

Revolution in the Social Sciences: Beyond Control Freaks, Conformity, and Tunnel Vision

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Preface

Is it actually possible that personal and world problems that we presently remain unable to solve have taught us that we are quite limited creatures when in fact our potential for continuing to develop is unbounded? Have the present patterns of organizing society that we have learned to conform to yielded a situation that increasingly threatens the very existence of the human race? However, is there indeed a direction that we can learn to take that will enable us to solve our threatening problems? Does that direction point us toward both the personal evolution of the individual and the evolution of society?

We answer all of these questions with a resounding "Yes!" based not on any gloom-and-doom scenario nor on any utopian dream but rather on realistic optimism derived from our integration of social science knowledge. Just as physicians and engineers solve physical and biological problems on the basis of knowledge from the biophysical sciences, so can we all learn to solve personal and world problems on the basis of knowledge from the social sciences. That knowledge presently exists in bits and pieces that are scattered throughout our libraries. Following Edna St. Vincent Millay's poem, "This Gifted Age," that knowledge is indeed "wisdom enough to leach us of our ill," waiting to be integrated so that we can penetrate the complexity of human problems.

Our use in this book of poets like Millay illustrates what we see as an essential direction for such integration: following in the footsteps of Francis Bacon, the founder of the scientific method. Bacon claimed, "I have taken all knowledge to be my province." Together with others in the Sociological Imagination Group that we founded in 2000, our seven published books have moved us--one step at a time--toward our present insights. We can now state unequivocally--while giving full recognition to enormous and increasing present-day problems--that we human beings are indeed creatures with unlimited potential not only for solving current problems but also for continuing evolution beyond our wildest dreams.

It is human language that is our greatest invention and our most powerful tool for penetrating the enormous complexity of human behavior and enabling us to solve our problems, and then to go on from there. And it is the extraordinary language of the social sciences--as illustrated by the concepts within the table of contents--that can enable us to increase enormously the power of our linguistic tool. Following Part II, that language can help us learn to develop not only intellectually with respect to "head" but also emotionally and in our problem-solving ability, relating to "heart" and "hand." It is also that language, following Part III, that can help us to change the institutions of society from their present patterns limiting our development to patterns that follow the dream of John Dewey: "the supreme test of all political institutions and industrial arrangements shall be the contribution they make to the all-around growth of every member of society." We have come to see that growth--which has in the past been limited--as potentially unlimited once we learn to make use of the extraordinary language of the social sciences.

It is indeed the case that the social sciences--sociology, psychology, anthropology, political science, economics and history--have as yet failed to yield a clear direction for progress on the fundamental problems threatening contemporary society. And it is also the case that this has yielded widespread discouragement about this possibility not only throughout society but even among social scientists. Yet we are convinced that such assessments do not take into account the enormous complexity of human behavior. And neither do they take into account a potential that has yet to be fulfilled and that follows the requirements of the scientific method: the integration of our knowledge of human behavior. It is exactly that integration that we have emphasized in this book. It is a direction that Mills called "the promise of sociology: and that we call the promise of the social sciences.

We deeply appreciate the advice and encouragement of Louis C. Johnston, who shares our own vision of human possibilities. And we are equally grateful to J. David Knottnerus for his most insightful comments and enthusiasm. Dean Birkenkamp's, Michael Sisskin's, Julie Kirsch's and Jana Hodges-Kluck's beliefs in our contribution have proved to be most helpful. And we would also like to acknowledge the support and feedback we've received from Christian Flores-Carignan, Robert W. Fuller, Thomas J. Scheff, S. M. Miller and Carl Slawski. Most important, however, we are deeply indebted to all those individuals on whose shoulders we stand and who have filled the pages of our bibliography.

Introduction

In his *The Structure of Scientific Revolutions* (1962), Thomas S. Kuhn--a historian and philosopher of science--saw the continuing development of the physical and biological sciences as largely based on changes in fundamental assumptions or "scientific paradigms." For example, the acceptance of Albert Einstein's Special Theory of Relativity in place of Isaac Newton's laws of motion depended on three things: (1) raising to the surface Newton's basic assumptions and show how they yielded data that were contradicted by evidence; (2) developing alternative assumptions that promised to resolve those contradictions; and (3) evidence for those alternative assumptions. Thus, it was not just (3) such evidence that was essential. It was also dealing with Newton's and Einstein's fundamental assumptions--or (1) and (2)--that was required.

More specifically, Einstein's basic assumptions included the idea that light travels at the same speed in any direction, contradicting Newton's assumption that light can travel at different speeds, depending on circumstances.. Yet Newton's assumptions were contradicted by very clear evidence, such as experiments on the speed of light by two engineers, Michelson and Morley, and thus Einstein was able to accomplish (1). As for (2), Einstein developed the alternative assumption that light travels at the same speed in any direction, following the results of the experiments by Michelson and Morley. That assumption helped Einstein to construct his Special Theory of Relativity. As for (3) that third leg of Einstein's achievement, research over time confirmed that theory, such as Einstein's idea that light should bend due to the force of gravitation. This change from the acceptance by physicists of a change from Newton's laws of motion to Einstein's Special Theory of Relativity was no easy matter, given their commitment to those laws for centuries. It required them to (1) face up to the problems posed by their own long-buried assumptions, and (2) to learn to accept the possibility that alternative assumptions might resolve those problems.

Kuhn realized that his theory of how basic changes in science have occurred could be applied to the social sciences no less than the physical and biological sciences. It is that very application to human behavior that is the basis for this book, as indicated by our own title: *Revolution in the Social Sciences*. Just as Kuhn's analysis indicates, such a revolution requires (1) raising to the surface the long-buried assumptions of social scientists about the nature of human behavior and confronting basic problems posed by those assumptions. A revolution in the social sciences also requires (2) alternative assumptions--which might be labeled as a "cultural paradigm, "worldview" or "metaphysical stance"--that promise to solve those problems. Still further, such a revolution requires (3) evidence that supports the theory that is based on those alternative assumptions or that cultural paradigm, worldview or metaphysical stance. Given the deep commitment of social scientists to their present worldview or cultural paradigm, such a revolution will prove to be no easy matter. Yet we are convinced of the enormous importance of that change, given existing and growing problems throughout the world.

Our subtitle--*Beyond Control Freaks, Conformity, and Tunnel Vision*--suggests the problematic nature of our present basic assumptions about human behavior. "Control freaks" and "conformity" suggest patterns of dominance and subservience or hierarchy within all of our institutions. In these ways, where we have learned to bow down to those in authority and

supposed experts, we limit our own patterns of interaction with others along with our ability to learn from experiences. And we develop a very limited view of our potentials as individuals coupled with a highly exaggerated view of the abilities of authority figures and so-called experts. Our limited learning in turn suggests our "tunnel vision"--shared by those above us in our hierarchies--where we all fail to see the forest for the trees in our efforts to understand ourselves and our world. In other words, enormous ignorance of how to solve our problems prevails. Yet our subtitle is most optimistic about our possibilities. We can learn to (1) raise to the surface the fundamental assumptions that limit our understanding, assumptions held by social scientists no less than the rest of us.

As for (2), we can build on our democratic ideals that point us away from hierarchies and toward our incredible potential as human beings. We all can learn to move away from our hierarchical way of life and learn to interact with one another in an egalitarian way and thus learn from our experiences in one scene after another. That interaction is an alternative to the relative isolation fostered by our present basic assumptions, cultural paradigm, worldview or metaphysical stance. The result can be not only our continuing to expand our understanding or intellectual development--by contrast with our present tunnel vision--but also our continuing development or evolution as individuals. Indeed, the original title of this book was "Personal Evolution." For our movement away from (1) and toward (2) promises nothing less than the continuing development of our intellect ("head"), our ability to understand and express our emotions ("heart"), and our problem-solving ability ("hand"). Given our tunnel or highly specialized vision, we humans have failed to understand our incredible possibilities.

With respect to (3), our theoretical approach is based on the integration of existing knowledge primarily from the social sciences, an integration that defies the narrow specialization existing throughout the academic world. For example, there are no less than 45 Sections of the American Sociological Association with very limited contact with one another, and this situation is paralleled throughout the social sciences. Our own emphasis on the integration of knowledge in this book builds on the work of the Sociological Imagination Group that we founded with the help of others in 2000. That work includes these seven books: *Beyond Sociology's Tower of Babel* (Phillips, 2001), *Toward a Sociological Imagination* (Phillips, Kincaid, and Scheff, 2002), *The Invisible Crisis of Contemporary Society* (Phillips and Johnston, 2007), *Understanding Terrorism* (Phillips, ed., 2007), *Armageddon or Evolution?* (Phillips, 2009), *Bureaucratic Culture and Escalating Problems* (Knottnerus and Phillips, eds., 2009), and our just-published *Saving Society* (Phillips, 2011).

The Sociological Imagination Group chose its name from the title of the most well-known book written by the American sociologist C. Wright Mills: *The Sociological Imagination* (1959). That book was voted by the members of the International Sociological Association as the second most influential book for sociologists written during the entire 20th century; the most influential one was written early in the century by a major founder of the discipline. Mills breadth of vision that we are building on in this book is illustrated by this quote from his well-known book:

The sociological imagination. . . is the capacity to shift from one perspective to another—from the political to the psychological; from examination of a single family to comparative assessment of the national budgets of the world; from the theological school to the military establishment; from considerations of an oil industry to studies of contemporary poetry. It is the capacity to range from the most impersonal and remote transformations to the most intimate features of the human self—and to see the relations between the two (1959: 7).

Given the enormous complexity of human behavior, such breadth is essential if we are to understand the pressing problems of contemporary societies and learn to confront them ever more effectively. Mills' vision extended beyond professional sociologists or social scientists to include the rest of us. Indeed, democratic ideals call for a population that is sufficiently educated as to the nature of their problems for them to make intelligent decision about the policies required to confront those problems effectively. Mills' vision, then, suggests the kind of broad education that we all must experience in contemporary society in our effort to achieve a genuine democracy. In our view, that education must point us toward nothing less than our own "personal evolution."

In order to understand the meaning and significance of our concept of "personal evolution," it is essential that we go very far back in time, even to the very origins of the universe some fourteen billion years ago. For we have argued in Chapter 1 of this book that the very nature of our universe is interactive, including the interaction among physical phenomena. And we have also argued in that chapter that such interaction is fundamental to the nature of biological evolution. It is such interaction that, over the billions of years of biological evolution, has yielded the development of us humans with our extraordinary tool for interaction that can enable us to learn with no limit whatsoever: language. As claimed by Stephen Jay Gould, our eminent and popular biologist, "We are, in a more than metaphorical sense, permanent children. . . small face, vaulted cranium and large brain in relation to body size, unrotated big toe, foramen magnum under the skull for correct orientation of the head in upright posture, primary distribution of hair on head, armpits and pubic areas. . . Humans are learning animals" (Gould, 1981: 333-334). This is not merely the situation of some of us: Gould was writing about every single human being.

Moving much closer to modern times, the American and the French revolutions in the 18th century--which built on worldwide developments such as the achievements of ancient Greece and Rome coupled with the European Renaissance that rested on scholarship within Islamic civilization--emphasized democratic ideals with their glorification of the potential of every individual. It is those revolutions, coupled with our continuing scientific and technological revolutions that they helped to spawn, that have yielded what Miller and Savoie have called our continuing "respect revolution" (2002, 8-12). That revolution includes a variety of social movements throughout the twentieth century, illustrated by what has occurred in the United States. There has been the civil rights movement, the women's movement, the gay, lesbian and transgender movement, the senior movement, and the disability movement. These movements are continuing into our present century, for the "respect revolution"--just like our technological revolution--is a revolution that has not yet ended, as is well-illustrated by what is occurring throughout the Middle East. All of these changes focus on the potential not of only some of us but rather of all of us.

In order to move from the respect revolution to the idea of personal or individual evolution, it is essential that we move toward a still deeper democratic idea--the idea of the intellectual potential of every single one of us--given our present assumptions about the supposed hierarchy of intelligence or capacity to learn. Just as Gould claimed, we are all "learning animals," and we all possess the features of children that he described. It is in Chapter 3 that we discuss studies by Bowles and Gintis, Shenk, Nisbett, and Rosenthal that throw cold water on our assumptions that the individual's intelligence is limited by some number. Indeed, our overall emphasis throughout this book on the importance of "heart" no less than "head" and "hand"--coupled with the gross failures of our intellectual elites to cope with contemporary escalating problems throughout the world--should be enough to shred those assumptions. The result is our idea that every single one of us--regardless of our past achievements or lack of achievement--possesses nothing less than the extraordinary potential not just for further development but rather for continuing personal evolution. To believe otherwise, in our view, is to become our own worst enemies, especially in these times when we must learn to become our own best friends.

Although it will take this entire book to describe and document the breakthrough in the social sciences that results from the integration of social science knowledge--and that is the basis for personal evolution--we can at least provide here some hints about our overall argument. It is human language that is our greatest invention and our most powerful tool for penetrating the enormous complexity of human behavior and enabling us to solve our problems, and then to go on from there. And it is the technical or extraordinary language of the social sciences--as illustrated by the concepts within the table of contents--that can enable us to increase enormously the power of our linguistic tool. Just as the technical languages of the biophysical sciences have been the basis for increasingly effective biophysical technologies, so can the technical language of the social sciences become the basis for increasingly effective personal and social problem-solving technologies.

In Part I we shall expand on the ideas in this brief introduction, yielding the framework we require to present that technical or extraordinary language of the social sciences in Part II. As discussed in Part II, that language can help us learn to develop not only intellectually with respect to "head" but also emotionally and in our problem-solving ability, relating to "heart" and "hand." It is also that language, following Part III, that can help us to change the institutions of society from their present patterns limiting our development to patterns that follow the dream of John Dewey: "the supreme test of all political institutions and industrial arrangements shall be the contribution they make to the all-around growth of every member of society." We have come to see that growth--which has in the past been limited--as potentially unlimited once we learn to make use of the technical or extraordinary language of the social sciences

The title of a book by Britain's Astronomer Royal suggests the nature of our present situation: *Our Final Hour: A Scientist's Warning: How Terror, Error, and Environmental Disaster Threaten Humankind's Future in This Century--On Earth and Beyond*. In that book Martin Rees claimed that "The 'downside' from twenty-first century [biological and chemical] technology could be graver and more intractable than the threat of nuclear devastation that we have faced for decades" (2003: vii). We agree with his assessment as to the enormous and

increasing threats to our survival. Our present way of life continues to yield wars without end, ever more effective weapons of mass destruction and the means to deliver them, and a wide range of world and personal problems that we cope with only to a very limited extent.

We remain realistic about these problems. However, we are realistic optimists, following our convictions about a revolution in the social sciences based on the integration of social science knowledge, and following our belief in the individual's potential for continuing evolution. This book is by no means a recipe that will enable the individual, after reading the last page, to fulfill unrealized potentials and confront personal and world problems ever more effectively. Yet we do claim, following the vision of the Dutch sociologist Fred Polak, that an image of the future can become the most powerful force we humans can develop for actually creating the future, providing that it is backed up by concrete procedures for moving toward that image. We have put forward our own extremely general image of the future on the website of the Sociological Imagination Group. And we believe that our argument in this book can yield the basic ideas that are essential for making progress toward that vision. We have a dream that:

There will be a future for our children, our grandchildren, our great-grandchildren, and their great-grandchildren.

One day we will all learn to see ourselves as children who are only just beginning to understand ourselves and our world, and we will also learn to dream about our infinite possibilities and move toward those visions one step at a time.

One day we will all learn to pay close attention to the accomplishments of all peoples throughout history as well as to our own personal accomplishments, and we will also learn to pay close attention to the failures of the human race and to our own personal failures.

One day we will be able to bring to the surface and reduce our stratified emotions like fear, shame, guilt, hate, envy, and greed, and we will learn to express ever more our evolutionary emotions like confidence, enthusiasm, happiness, joy, love, and empathy.

One day we will see peace on earth and fellowship among all humans.

One day we will no longer look down on any other human being.

One day we all will learn to be poets, philosophers, and scientists.

Part I Strategy: Learning from History

It is the complex language--more than any other feature--that we humans have created over thousands of years that sharply distinguishes us from all other forms of life and that is the basis for the evolution of the individual and society. It has been basic for helping us to solve problems great and small, and enabling us to pass along that knowledge from one generation to the next. It is written language that has been the foundation for the cumulative development of knowledge within science. Isaac Newton claimed, "If I have seen further it is by standing on the shoulders of giants." And it is science that has succeeded in shaping our entire way of life.

Yet human language along with science have proven to be two-edged swords. For example, in Chapter 1 we shall learn how we have failed to take advantage of the incredible potentials that language offers to every single one of us. It is a failure illustrated within the most outstanding minds of any given generation--our heroes, our Nobel Prize winners, our leaders in all walks of life--no less than within the minds of the rest of us. It is also in Chapter 1 that we shall learn how the social sciences have failed us, as illustrated by this excerpt from Edna St. Vincent Millay's and Norma Millay Ellis' "Upon this age, that never speaks its mind," © 1939, 1967 (reprinted by permission of Holly Peppe, Literary Executor, The Millay Society):

Upon this gifted age, in its dark hour,
Rains from the sky a meteoric shower
Of facts . . . they lie unquestioned, uncombined.
Wisdom enough to leech us of our ill
Is daily spun; but there exists no loom
To weave it into fabric . . .

However, just as language and the scientific method have been much of the basis for the shaping of our world by the physical and biological sciences, so can those tools become much of the basis for the shaping of our world by the social sciences. Social scientists can learn to get their act together. Although presently there are no less than 45 distinct Sections of the American Sociological Association--a situation paralleled within the other social sciences--sociologists can learn to integrate those bits and pieces of knowledge, and other social scientists can follow suit. The "fabric" that they develop can be used to confront our "dark hour" and "to leech us of our ill." And far beyond the solution of our most threatening problems, we humans can continue to evolve, creating the kind of world that we can scarcely imagine.

It is in Chapter 2 that we discuss a breakthrough in social science knowledge yielding a "loom" or scientific method broad enough to follow in the footsteps of Francis Bacon. We have been guided here by the words of the sociologist C. Wright Mills: "The sociological imagination. . . is the capacity to shift from one perspective to another—from the political to the psychological; from examination of a single family to comparative assessment of the national budgets of the world; from the theological school to the military establishment; from considerations of an oil industry to studies of contemporary poetry." Mills has been the guiding spirit for our work.

Chapter 1

Problems: "A Little Learning Is a Dangerous Thing"

Edwin A. Abbott's *Flatland: A Romance of Many Dimensions* (1884/1952) is one of the earliest science fiction stories ever written. Flatland is a two-dimensional world inhabited by Triangles, Squares, Polygons and Circles, with the number of one's sides determining one's status in society. A Square, the narrator, is visited by a three-dimensional Sphere who takes him up into space and shows him the wonders of Spaceland, our three-dimensional world. But when the Square returns and attempts to explain his fantastic journey to his countrymen, he is imprisoned for life for his seditious remarks about the supposed existence of a third dimension.

We Spacelanders would not imprison someone for talking about the existence of a fourth dimension of time. Indeed, we freely speak about the past and the future. Yet just how frequently do we think about our millions of past experiences as well as those of society as a whole, and just how far back in the past do we generally travel? Further, how often do we think about the many possible futures that we might construct along with the specific behavior that would take us toward them? Apparently we are creatures of Spaceland rather than Timeland, for we find ways to avoid entering the time dimension more than occasionally. We resist entering Timeland much like the Circles who imprisoned the Square resisted entering Spaceland.

Our failure to move decisively from Spaceland toward Timeland joins us with lower forms of life that are almost completely dominated by the requirements of the momentary external scene. Thus, we continue to largely ignore our own past experiences and those of society, and we continue to largely ignore our future possibilities. Indeed, it is an "outward" orientation to the momentary scene with little awareness of our "inward" past experiences and future possibilities. In other words, we fail to achieve interaction between who we are, based on our past experiences and future possibilities, and our present external experiences. Similar to lower forms of life with no complex language and very limited memory, we humans--with our complex language that gives us memory and future orientations--also point toward an outward orientation. And that outward orientation works against our achieving genuine inward-outward interaction with others. For we must travel inward toward our unique personal experiences in order to achieve such interaction. Instead, our limited an inward orientation leaves us largely isolated from our unique selves.

The subtitle of this book illustrates this isolation from our own unique selves with its resulting lack of deep interaction with others. For example, a "control freak" is oriented to making another "conform" to his or her bidding, yet they are both oriented outward rather than both inward and outward. Sociologists have a concept for this:

"social stratification," which is the persistence of hierarchy. The control freak is at the top of the hierarchy, and the conformist is at the bottom. Their lack of genuine or deep interaction carries over into the lack of genuine interaction among ideas, which is the very nature of "tunnel vision." This is what Edna St. Vincent Millay was writing about when she referred to "a meteoric shower of facts" which "lie unquestioned, uncombined." And it is illustrated as well by the division of the social sciences into hundreds of specialized fields that generally fail to communicate with one another. Given the complexity of human behavior, that lack of the integration of knowledge works against a crucial ideal of the scientific method: that the scientist should be open to all phenomena relevant to the problem under investigation.

We are convinced, then, that we must learn to enter Timeland far more frequently, just as it is essential to take time very seriously if we wish to understand what has happened in the past that has caused our present problems, and if we wish to change our future behavior so as to solve those problems. Presently we continue to swim on the surface of the ocean of time, rarely going far below to explore where we have come from. And if the sky represents the future, we continue to remain on that surface rather than learn to fly. We begin this chapter by journeying billions of years back in time to the development of our physical universe as well as to the evolution of life. We then continue by focusing on the past five centuries of our continuing scientific and technological revolutions. Finally, we take a second look at those centuries, centering on a fundamental and increasing problem: "The Growing Gap between Aspirations and Their Fulfillment." And we discover, following Alexander Pope--an 18th-century English poet--that "A little learning is a dangerous thing."

The Physical Universe and Biological Evolution

The American poet Robert Frost helps us to develop insight into the very nature of our physical universe along with the process of biological evolution in his "Mending Wall":

Something there is that doesn't love a wall,
 That sends the frozen-ground-swell under it,
 And spills the upper boulders in the sun,
 And makes gaps even two can pass abreast. . .
 I let my neighbor know beyond the hill;
 And on a day we meet to walk the line
 And set the wall between us once again,
 We keep the wall between us as we go. . .
 Before I built a wall I'd ask to know
 What I was walling in or walling out. . . .;
 He moves in darkness as it seems to me,
 Not of woods only and the shade of trees.
 He will not go behind his father's saying. . .
 He says again, "Good fences make good neighbors."

Just as Frost describes the interaction of the frozen ground on the wall's boulders, so is the interaction of all phenomena fundamental to the nature of the universe as a whole. Efforts to wall in and wall out phenomena are doomed to failure in the long run, just as are the human being's efforts to limit his or her full interaction with external phenomena by staying within Spaceland rather than moving into Timeland. No complete isolation of phenomena is physically possible within our universe, for a given phenomenon's container will be affected by what goes on outside of the container and, as a result, will have an impact on what goes on inside the container. And the reverse occurs as well. Interaction among phenomena is thus the name of the game throughout our universe, even if that interaction is quite indirect. Frost's neighbor "moves in darkness" when he says that "Good fences make good neighbors," for he is directly opposing the very nature of the universe. He is pointing toward a way of life that requires a narrow "head" orientation, a "heart" oriented to emotional repression, and a "hand" that is relatively ineffective.

If interaction is part of the very nature of our physical universe, then it is no less part of the very nature of our billions of years of biological evolution. For it is the interaction between organisms and their environments that determines whether or not a given species is better adapted to its environment than a species competing with it. Thus, for example, long-necked giraffes would be better adapted to an environment of tall trees than short-necked giraffes. And their progeny would have a better chance of surviving than the progeny of short-necked giraffes, leading to the continuing evolution of the former and the extinction of the latter. Once again, then, it is interaction--this time between organisms and their environments--that is the fundamental process that is involved. It is interaction by contrast with isolation that is not only fundamental to the very nature of our physical universe. Interaction is equally fundamental to the process of biological evolution. And once again this foreshadows the present-day importance of interaction versus isolation for us humans, for we can choose to move toward isolation by remaining in Spaceland or to move toward interaction by shifting toward Timeland.

Unfortunately, however, our commitment to Spaceland versus Timeland--along with its limitations with respect to our utilization of "head," "heart" and "hand"--parallels the commitment of Abbott's Flatlanders to Flatland rather than Spaceland. Just as the Flatlanders resisted the possibility of a third dimension and thus doomed themselves to a very limited way of life, so do we Spacelanders avoid entering Timeland and thus fail to understand and cope with escalating problems throughout the world. For example, our dominant approach to the nature of the physical universe is to look outward in an effort to discover other intelligent forms of life. At the same time, we continue to largely ignore the possibility of an inward journey, where we would learn about the nature of human behavior and human problems. For example, the specialized knowledge of the physical universe that we humans have developed has failed to see interaction as absolutely fundamental to its nature and has failed to see us human beings--with our complex languages--as by far the most interactive phenomena throughout the known universe. Further, that specialized knowledge fails to detect the barriers we have constructed to fulfill ever more of our interactive potential, such as our commitment to Spaceland rather than Timeland. Thus, our focus on exploring outer space takes away from our

possibilities for fulfilling our human potential for understanding increasing problems and confronting them effectively.

This failure to understand the nature of our physical universe and its implications for our situation at this time in history is paralleled by our failure to understand the nature and implications of biological evolution. Charles Darwin's fantastic achievement of unearthing the essential nature of biological evolution in his *The Origin of Species* (1859/1964) shook the world. And biological research during the past century and a half has worked to support and extend his almost unparalleled scientific achievement. Yet our near-universal commitment to our outward-oriented Spaceland rather than an inward-outward oriented Timeland has worked against a profound understanding of the implications of Darwin's findings for human behavior and human problems. Darwin proceeded to enter Timeland with a theory that looked back at nothing less than billions of years of the origins of species from the lowly one-celled organism to the present-day human being. Yet this sweeping approach to the fourth dimension of time goes against the grain of us Spaceland creatures, for our focus is on our own momentary situation, much like the focus of organisms without our complex languages.

More specifically, much of the interpretation of Darwin's work applied his explanation of the biological evolution of non-linguistic species to us humans with our complex languages and our ability to learn from experience. Thus, for example, those people with some physical defect or handicap, those with mental problems, those seen as low in intelligence, those who had committed a crime, those addicted to alcohol or drugs, and those who remained in poverty came to be seen as "unfit" within what Darwin had called the competitive "struggle for life." And it is best that they should die in order to make way for the development of "superior" human beings and the progress of society as a whole. This interpretation of Darwin's ideas about the evolution of non-linguistic organisms as applying to human beings strengthened racist ideas, such as those of the Ku Klux Klan in the United States and Adolph Hitler in Nazi Germany, ideas that yielded a rationale for the extermination of the "unfit" as being unworthy of life.

It is this elitist view of Darwin's evolutionary ideas that colors even today any effort to apply the idea of evolution to human behavior. Yet our own vision of personal evolution is not just democratic: it is exceedingly democratic because of its orientation to the potential of personal evolution for every single one of us human beings. We might think of the possibilities of personal evolution as depicted by a stairway to the stars with extremely wide steps, by contrast with a see-saw where the individual can only move up to a limited extent and only at the price of someone else moving downward. Our world at present is a combination of both the see-saw and the stairway, with its areas of business competition coupled with limited human development and its areas of stairways, as illustrated to an extent by the institution of education. Yet both business and education--along with other institutions as well--can be transformed in a more democratic direction, as suggested by John Dewey, the American philosopher and educator:

Government, business, art, religion, all social institutions have a meaning, a purpose. That purpose is to set free and to develop the capacities of

human individuals without respect to race, sex, class, or economic status. And this is all one with saying that the test of their value is the extent to which they educate every individual into the full stature of his possibility. Democracy has many meanings, but if it has a moral meaning, it is found in resolving that the supreme test of all political institutions and industrial arrangements shall be the contribution they make to the all-around growth of every member of society (Dewey 1920/1948: 186).

Dewey presents here a most radical vision of how all of our institutions should be completely transformed from their present directions toward a focus on the continuing development of every individual with whom they come into contact. His effort to "educate every individual into the full stature of his possibility" meshes closely with our own focus on the potential of every individual to continue to evolve with respect to "head," "heart" and "hand." Jane Addams, a well-known American social worker writing in *Democracy and Social Ethics*, shares our own vision of democracy:

A conception of Democracy not merely as a sentiment which desires the well-being of all men, nor yet as a creed which believes in the essential dignity and equality of all men, but as that which affords a rule of living as well as a test of faith (quoted in Knowles, 2004: 3).

"Sentiment" has to do with "heart," "creed" with "head," and "a rule of living" with "hand." From this perspective the ideal of democracy becomes broad enough to include the ideas, feelings and actions of the individual. Addams also wrote that "The cure for the ills of Democracy is more Democracy." By so doing she gave recognition to the limitations of present-day political systems of democracy that fail to engage the active and continuing commitment and participation of the individual in the democratic process from one day to the next, rather than simply voting infrequently. She pointed toward the development of nothing less than a democratic way of life for the individual and society, directly opposing patterns of an outward orientation, emotional repression and ineffective actions that generally characterize present-day democracies.

These ideas of democracy build on a most fundamental idea of Darwin's approach to the evolution of species, the idea of interaction, which is equally fundamental to the nature of our physical universe. For it is those organisms that are able to interact more successfully with their environments that survive to yield the progeny that also survive. And it is those organisms that fail to interact successfully with their environments--such as the short-necked giraffe within an environment of tall trees--that become extinct. The idea of democracy also stresses the idea of interaction, for voting--by contrast with having no voice in determining the leaders of society--is an example of interaction between leaders and those who are led. Jane Addams' view of democracy carries still further this idea of interaction, for she sees democracy as creating nothing less than "a rule of living" that yields continuing interaction between leaders and the led. This view of Darwinian theory with its emphasis on interaction is a far cry from the notion of "the survival of the fittest," where the supposedly unfit are left to die rather than encouraged to interact with others in society.

By contrast, an interpretation of Darwin's significance for human behavior that focuses on the survival of the fittest points toward a see-saw world that fails to emphasize interaction and instead focuses on the isolation of individuals. For there is quite limited interaction when hierarchies of individuals are central to society. To illustrate with reference to a stairway world, assuming that the stairway's steps are sufficiently wide, one person's ascent does not get in the way of another person's ascent. Indeed, to the extent that individuals in the process of climbing the stairway interact with one another, they can gain understanding about how to climb the stairway, for the experiences of each individual are at least somewhat unique. However, if the climbers avoided such interaction and centered instead on patterns of hierarchy, they would be able to learn little from one another, and their understanding of how to continue to climb would thus become limited. A more extreme interpretation of Darwin's theory as illustrating hierarchy could result in active opposition among the climbers to one another, yielding more of a see-saw situation than a stairway situation.

The importance of our focus on interaction in interpreting the significance of Darwin's theory for understanding human evolution cannot be understood without direct attention to the nature of language. For it is our complex language that sharply divides us from lower forms of life, and it is language that is the basis for our interaction with one another. Whatever else language helps us to achieve, it is our learning as a result of interaction that is absolutely fundamental. We can use language to learn how to climb that stairway when we interact with others who are also climbing it. Without our complex language, by contrast, our ability to learn from such interaction would be drastically limited. Language enables us to move beyond the momentary Spaceland situation and enter Timeland, exploring people's past experiences of succeeding and failing to climb as well as their plans for attempting to climb in the future. Instead of leaving the poor, the handicapped, the lawbreakers, the addicted, and those with mental problems to die within a competitive struggle where only the elite survive, the "unfit" can learn to solve their problems as a result of interacting with our incredibly powerful tool of language. And the result can yield a society that moves ever closer toward Jane Addams' vision of an active democracy that invokes everyone's "head," "heart" and "hand."

Yet if language is indeed such a powerful tool for learning, and if indeed we are all attempting to climb that stairway, how can we explain our failure to develop the kind of active democracy that Addams envisioned? Ludwig Wittgenstein, an eminent 20th-century philosopher, can help us here, for he claimed, "The limits of my language mean the limits of my world." Somehow we have limited our usage of language, failing to take advantage of its incredible potentials for helping us to learn how to develop ourselves and solve personal and world problems. To probe more fully the nature of language's potentials, we might distinguish among the languages of social science, biophysical science, and arts that include literature, film, drama, painting, sculpture and music. We might see these languages as emphasizing, respectively, three capacities of language: dichotomy, gradation or number, and figurative language, imagery or metaphor.

More specifically the social sciences have emphasized dichotomies, such as the distinction between equality and hierarchy or conformity and deviance. This goes back to

the fundamental nature of all languages: their division of the world into two categories. There is the phenomena denoted by a given word, on the one hand, and all other phenomena, on the other hand. The biophysical sciences, by contrast, have emphasized the gradational component of language. Here, we see things as matters of degree, such as degree of force and amount of atomic weight, and we can proceed to assign numbers to those degrees. The use of mathematics has been essential in the development of the biophysical sciences. The arts, by contrast, emphasize metaphor, imagery or figures of speech, using language, painting, sculpture or music to represent sense experiences. This includes taking us back to biological or perceptual experiences that precede the development of language. Images from the arts are, potentially, powerful means of communication. They can help us to understand what we have learned, and they can also help us to communicate knowledge.

This overriding emphasis of the social sciences on dichotomy, the biophysical sciences on gradation, and the arts on images or metaphors is a species of a failure to continue to move toward interaction, as illustrated by Frost's neighbor who believes that "Good fences make good neighbors." For each of these fields of knowledge within the academic world has built a linguistic fence separating it from the other fields of knowledge. This is the kind of failure that is nearly universal both inside of the academic world and outside of it. It was illustrated above by our failure to enter Timeland and thus interact with past occurrences and future possibilities. Edna St. Vincent Millay's poem presented the example of a meteoric shower of uncombined facts. We noted the existence of 45 Sections of the American Sociological Association with limited communication among them, a situation paralleled throughout the social sciences. And we might also note the enormous chasm between the academic world and the world inhabited by everyone else, with both academics and lay people generally failing to cross that chasm and interact with one another.

This failure of us humans to build on the very nature of the universe and the very nature of biological evolution with their focus on interaction is paralleled by our failure to learn how to understand our growing problems and move toward solving them. For example, we continue to develop ever more powerful weapons of mass destruction along with ever more effective means to deliver them. Yet we fail to learn how to halt that production as well as how to motivate people to avoid using such weapons. We continue to move toward the exploration of outer space, yet we fail to emphasize what we require most at this time in history: the exploration of inner space. We continue to be plagued by social problems. For example, there is a growing gap between the rich and the poor throughout the world; there are widespread patterns of addiction to alcohol, drugs and other obsessive patterns of behavior; there is equally widespread physical and mental abuse between individuals inside of and outside of families; and there is the continuing inability of leaders and our specialized "experts" to make significant progress on these and a wide range of other problems throughout society.

Yet despite the apparent hopelessness of our current situation, there is indeed a way out. Just as the ideals of the scientific method call for "standing on the shoulders of giants"--based on written language's ability to communicate what those giants have discovered--so can those ideals point toward a genuinely interactive academic world as

well as the world outside of academia. If interaction is indeed the name of the game of both our physical universe and the process of biological evolution, then we should also be able to learn--by following scientific ideals--how to make interaction the name of the game of our world, including the interaction among ideas as well as individuals. And just as interaction has yielded an evolutionary history resulting in the emergence of the human being, so can a scientific method that emphasizes interaction enable us humans to continue that evolutionary journey so that we can not only solve our current problems but also move far beyond them.

As for the nature of such an incredibly broad scientific method--yet one that follows scientific ideals--that is a task that will be addressed by this book as a whole. Before that, however, we can at least provide a hint of our vision of this kind of scientific method, based on an image of a pendulum that can swing in ever-widening arcs. The first paragraph of the introduction to Part I illustrates the significance of this metaphor. That paragraph invokes the ability of our complex language to help us solve our problems, corresponding to optimism about solving the problems suggested by Millay, such as our "dark hour" and our shower of uncombined facts. Such optimism suggests that we can in fact learn to solve problems with the aid of the scientific method. For example, we can build on the power of the biophysical and social sciences along with the humanities by making use of all three of language's major potentials: gradational, dichotomous and metaphorical. It is exactly here that the extraordinary or technical language of the social sciences can help us by reconstructing it so as to open up to all three of language's major potentials. By so doing, that extraordinary language moves us away from the tunnel vision of specialization with limited communication. And that technical language moves us toward fulfilling the broad ideals of the scientific method.

Given that initial optimistic assumption of our potential for solving problems with a scientific method, we are in a position to swing our pendulum of the scientific method to the left, where we learn to become aware of a given problem and become committed to making progress on it, as illustrated in the second paragraph with its attention to what Millay called our "dark hour" and our "meteoric shower" of "uncombined" facts. That awareness and commitment in turn becomes the basis for a swing to the right--illustrated by our third paragraph--where we can learn to make actual progress on the problem. That progress in turn becomes the motivation or momentum for a swing even further back to the left, followed by a swing even further to the right, and so on. We might note the close relationship between the pendulum metaphor for the scientific method and movement from Spaceland into Timeland. For it is in Timeland that we open up to personal and world phenomena throughout the past as well as within possible futures. And it is essential for a scientific method that hopes to uncover the complexities of human behavior to deal with that full range of phenomena.

This pendulum metaphor for the scientific method is thus nothing less than a vision of continuing interaction: between awareness of and commitment to solving a given problem, on the one hand, and progress on that problem, on the other hand. This is interaction that begins with optimism that problems that are put forward can in fact be solved. Given that optimism, which we may see as an initial assumption as to the

possibilities of the scientific method, the scientist can then move back and forth from awareness and commitment to a problem, represented by a swing of the pendulum to the left, and progress on that problem, represented by a swing to the right. And it is such interaction that can continue indefinitely if the problem is sufficiently difficult--as is the case for fundamental problems of human behavior--so as to require a very long period of effort in making progress on the problem. Thus, the pendulum metaphor for the scientific method carries forward the idea of interaction that is so central to the nature of the universe as well as the process of biological evolution.

In the section to follow, "The Continuing Scientific and Technological Revolutions." we shall make use of this pendulum metaphor that conveys both our ideals for the scientific method as well as a pattern of interaction that is so fundamental to the nature of the universe, the process of biological evolution and the ideal of democracy. As we shall see, scientific ideals along with ideals for interaction have been only partially illustrated by the history of the past five centuries. And it is that very limitation which is much of the basis for our present situation of escalating problems throughout the world. Yet we can indeed move toward fulfilling our ideals for the scientific method by opening up to the full complexities of language. And we can accomplish this with the aid of the extraordinary or technical language of the social sciences.

References

- Abbott, Edwin A. *Flatland: A Romance of Many Dimensions*. New York: Dover, 1884/1952.
- Addams, Jane. *Democracy and Social Ethics*, 1902. IN Eliazabeth Knowles (ed.), *The Oxford Dictionary of Quotations*. New York: Oxford University Press, 2004, 3.18.
- Darwin, Charles. *The Origin of Species*. New York: New American Library, 1859/1964.
- Dewey, John. *Reconstruction in Philosophy*. Boston: Beacon Press, 1920/1948.
- Kuhn, Thomas S. *The Structure of Scientific Revolutions*. Chicago: Univ. of Chicago Press, 1962.
- Knottnerus, J. David, and Bernard Phillips (eds.). *Bureaucratic Culture and Escalating Problems: Advancing the Sociological Imagination*. Boulder, Colorado: Paradigm Publishers, 2009.
- Miller, S. M., and Anthony J. Savoie. *Respect AND Rights: Class, Race, and Gender Today*. Lanham, Maryland: Rowman & Littlefield, 2002.
- Mills, C. Wright. *The Sociological Imagination*. N. Y.: Oxford University Press, 1959.
- Phillips, Bernard. *Beyond Sociology's Tower of Babel: Reconstructing the Scientific Method*. New York: Aldine de Gruyter, 2001.
- Phillips, Bernard (ed.). *Understanding Terrorism: Building on The Sociological Imagination*. Boulder, Colorado: Paradigm Publishers, 2007.
- Phillips, Bernard. *Armageddon or Evolution: The Scientific Method and Escalating World Problems*. Boulder, Colorado: Paradigm Publishers, 2009
- Phillips, Bernard. *Saving Society: Breaking Out of Our Bureaucratic Way of Life*. Boulder, Colorado: Paradigm Publishers, 2011.
- Phillips, Bernard, and Louis C. Johnston. *The Invisible Crisis of Contemporary Society: Reconstructing Sociology's Fundamental Assumptions*. Boulder, CO: Paradigm, 2007.
- Phillips, Bernard, Harold Kincaid, and Thomas J. Scheff (Eds.). *Toward a Sociological Imagination: Bridging Specialized Fields*. Lanham, Maryland: University Press of America, 2002.
- Rees, Martin. *Our Final Hour: A Scientist's Warning: How Terror, Error, and Environmental Disaster Threaten Humankind's Future*. New York: Basic Books, 2003.