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TELLING THE NEW STORY: DARWIN, EVOLUTION, AND CREATIVITY VERSUS CONFORMITY IN SCIENCE

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> Important as the struggle for existence has been and even still is, yet as far as the highest part of our nature is concerned there are other agencies more important. For the moral qualities are advanced either directly or indirectly much more through the effects of habit, by our reasoning powers, by instruction, by religion, etc., than through natural selection.
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> —Charles Darwin, *The Descent of Man*, Conclusions, p. 404

For a century, many of psychology's great founders and innovators, in keeping with Darwin's long-ignored full theory of evolution (Loye, 2004)—of which we will say much more here—have struggled to build a humanistic, moral, and action-oriented theory of evolution. Beyond the prevailing constraints for their field, it can now be seen that they were seeking an alternative to the prevailing paradigm accepted by biologists, Neo-Darwinians, and the so-called "man in the street" of "survival of the fittest" and selfishness as prime drivers for human, as well as prehuman, evolution. Darwin not only had much more to say about evolutionary motivation at the human level but also, unknown to them, had earlier stated what became the driving ethos for scores of creative psychologists. This is a story much in need of telling.

This chapter explores this pivotal but little known chunk of our history as a case Writ Large of creativity against conformity—that is, of forces supporting open and innovative inquiry versus those promoting falling in line with dominant views. What now adds urgency to the story is that in

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the conflict of paradigms that shape science, society, and the lives of every one of us, it is becoming evident to many of us that conformity to the "old" Darwinian paradigm of "survival of the fittest" and "selfishness above all" is relentlessly driving our species toward destruction (Loye, 2004).

Among the highly creative pioneers for what might be called a "second Darwinian revolution," we will look at Darwin's disciple George Romanes, along with Freud, Fluegel, Morgan, Baldwin, James, Mead, Dewey, Piaget, Lewin, Fromm, Tomkins, Kohlberg, Gilligan, Maslow, and Assagioli, and in more recent times, Csikszentmihalyi, Wilber, Combs, Krippner, Ornstein, Wilson, de Waal, Damon, and others. With threats to the well-being of our species steadily mounting, we will close with a look at the new Darwin Project and prospects for an alliance of psychologists along with evolutionary systems scientists to more effectively and swiftly shift from old to new.

If we move out beyond psychology's usual focus on the individual and the small group (e.g., family, workplace, or organization) to look at the increasingly troubled situation of our species, a large problem affecting us at all levels becomes apparent: We face immense challenges in the 21st century, calling for new views of human nature (Loye, 2004) and a vast increase in everyday creativity (R. Richards, 1999). Yet both are still radically constricted through a tragic triumph of conformity over creativity.

The specific problem is that we have arrived at what the great body of science as a whole agrees is a pivotal juncture in human evolution without a fundamental source for guidance, namely an adequate theory and story of evolution to provide a reasonably sure sense of the path for humanity from past and present into the future. The theory we have is based almost entirely on the study of the past and the prehuman and the subhuman.

The tragedy is that the creativity of the founders and innovators of the field of psychology as well as all of social science, who set out to give us precisely what was needed, again and again fell victim to the age-old pressures and dynamics of conformity that Barron (1969), Crutchfield (1964), Csikzentmihalyi (1996), R. Richards (chaps. 1 & 13, this volume), and scores of other psychologists have revealed. To appreciate what is at stake, we need to bring back into the discourse shaping psychology and social science as a whole, the minds and voices of all those whose works we can now see are still of prime relevance to the development of a fully human theory and story of evolution.

By "fully human" what is meant is this: 20th-century science did a remarkable job of making both the theory and story of cosmic evolution come to life for us via physics. It also gave us an impressive theory and story of biological evolution via chemistry and biology. But when it came to dealing with the explosion out of nature of higher brain, mind, and consciousness, which characterizes the emergence of our species and our

impact on this planet, and constitutes the subject matter for the field of psychology, it fell tragically short of what was needed.

Why tragic? As that great innovator in the study of creativity Silvan Tomkins (1962–1992) made evident with his pioneering development of script theory (Carlson, 1995), we live by story. Yet what about the unsettling demonstration of Tomkins's insight that the newspapers now force on us almost daily? We live by story, and the story we live by is driving our species to extinction (e.g., see Laszlo, 1994; Elgin, 2000).

What can we do about it? The studies in this chapter reveal that within our heritage as psychologists lies the powerful answer the great founders and innovators kept trying to advance. The idea, which lies at the core of our whole field, is that if we change the theory, we can change the story. The hope rising from this demonstrable fact is that by changing the "old" theory and the "old" story for evolution, we can bypass the road to extinction and move on to build the better world. (Also see chaps. 10, 11, & 12, this volume, for varied views on paradigm shifts.)

Another source for the same answer is a discipline of increasing interest to many psychologists, in which Kurt Lewin (1951) was a major contributor, the field of systems science. Driving psychology in this direction has been the growing interest in nonlinear dynamical systems, or "chaos," theory (see chap. 2, this volume). During the 4 decades of my own involvement in the past and present for both fields as well as involvement with evolutionary and futures studies and chaos theory (Loye, 1977, 1978, 1984, 1998, 2000a, 2004), I have come to see that if we are to achieve the fully human theory of evolution that the future for our species requires, it calls for a new working partnership between these two, psychology and systems science, with thereafter the widening involvement of the other fields of social science as well as natural science and the humanities.

We first look at the heritage of psychology's past, including Darwin's "lost theory," bearing on our chance for the better future, then at the same for systems science, and last at how the two are beginning to come together in projects that, with widening scientific and educational involvement, could be large enough to have a significant impact on our lives throughout the rest of the 21st century and beyond.

CREATIVITY VERSUS CONFORMITY IN THE EVOLUTION THEORY AND STORY

Another psychologist noted for creativity studies, Howard Gruber, in his study of the creative thrust for the theory and story of evolution, was the first to uncover the startling degree to which Darwin's underreported

work originally anticipated the development of modern cognitive, social, and humanistic psychology (Gruber & Barrett, 1974/1981). The pioneering interest Darwin displayed in psychology in *The Expression of Emotions in Man and Animals* (Darwin, 1872) has long been noted. Yet after a lengthy probe of the early notebooks as well as *The Descent of Man* (Darwin, 1871), what Gruber (1974/1981) reported in his award-winning *Darwin on Man* was that for his far-ranging insights, Darwin deserves far more credit as a founder of modern psychology in addition to evolution theory than had been realized.

On digging further into this neglected side of Darwin in a major study of the relation of psychology to evolution theory, University of Chicago psychologist and historian of science Robert J. Richards (1987) discovered an aspect of this relationship that is of central importance both in the reclamation of the "other" Darwin and in the meaning for our future. This is the fact that along with such well-known early psychologists as J. M. Baldwin and William James, in a way almost wholly unsuspected, Darwin was a major moral theorist.

Digging still further, by applying rigorous content as well as hermeneutical analysis from an advanced systems scientific perspective, I uncovered the rest of a startling picture wholly at odds with the prevailing stereotype.

Driven by neo-Darwinian science—including, most forcefully, the claims of evolutionary psychology and sociobiology today—for over a century, as noted earlier, the prevailing paradigm has locked onto "survival of the fittest" and selfishness as the prime Darwinian drives for the evolution of ours as well as all other species. Working, however, with the advantage of a computerized version (Goldie & Ghiselin, 1997) of the book in which Darwin specifically tells us he will focus on human evolution, *The Descent of Man*, I found this frankly astounding twist to the lost story of Darwin and all the great psychologists who, without knowing it, were his heirs in the uphill drive to launch a "second Darwinian revolution."

My instrument was nothing more than the computer "find" procedure that today any computer-literate 8-year-old can use. Despite all the years of development by psychologists and other social scientists of the use of word count as one of the most powerful tools of the methodology of content analysis, so automatically and routinely accepted was the "old" prevailing Darwinian paradigm that no one had bothered to apply it to either of Darwin's supposedly sacred basic texts on evolution for the primary theory underlying psychology and all the other sciences of living systems.

I first tried the "find" button to look for how many times Darwin wrote about the central concepts for the prevailing paradigm. In 898 pages of very fine print in *The Descent of Man*, I found that Darwin wrote only twice about "survival of the fittest," once to actually apologize for ever using the term! And what of the other obvious concepts? Only 12 times for selfishness, and 9 times for competition. I then tried the other set of concepts which,

throughout the century, one great psychologist after another, from Baldwin and Piaget to Maslow, has tried to establish as being of paramount importance in our development, reaching what might call the apogee with the development of humanistic, transpersonal, and positive psychology.

In the sharpest possible contrast to "survival of the fittest"—in this book in which he specifically tells us he will move on from the evolution theory of *Origin of Species* to what mainly drives evolution at our species' level—Darwin writes of love 95 times. He writes of moral sensitivity 92 times. He writes of sympathy 61 times. And he writes of mutuality or mutual aid (the terms they used for cooperation in those days) 24 times. Furthermore, in keeping with the expanding portrait of Darwin the psychologist, of the thrust of creativity that was to distinguish 20th century psychology at its best, he writes of mind 90 times, intellectual qualities and powers 75 times, reason 53 times, imagination 25 times, learning 18 times, consciousness 15 times, curiosity 14 times, and instruction 10 times. Darwin further writes, in regard to what became a primary area for James (1890/1950), Hull (1952), Skinner (1965), and the whole field of educational psychology, 108 times of habit, and bearing on the neuropsychology of the 20th and 21st centuries, 110 times of the brain including his prescient interest in the frontal brain.

If we consider the fact that Darwin's has long been considered the single most important theory underlying not only psychology but all fields of science concerned with living systems, is it too much to suggest that we are looking at the most colossal case of the triumph of scientific conformity over scientific creativity now on record?

What emerges in the text behind these astounding word counts (Loye, 1994, 1998, 1999, 2000, 2001, 2002b, 2007a) is a clear picture of the structural relation of *The Origin of Species* to *The Descent of Man*. This is of major bearing on the challenge to us to break the shell of conformity to the old paradigm for evolution and give not just peace but creativity a chance. In the first book, Darwin lays down the biological foundation, or "first half" on which both science and society fixated. Yet in the second book, he outlines the psychological superstructure, prefiguring the development of cognitive, social, developmental, humanistic, transpersonal, and positive psychology in our time. Of the most neglected urgency, it is in this second book that he provides the basic sketch for a moral and action-oriented second or completing half for his theory of evolution that psychology, as well as the rest of science, has only barely begun to build (Loye, 1994; Rachels, 1998).

This is important to keep in mind because it indicates where Darwin was headed in the development of his theory of evolution. We are also looking at how he clearly hoped to see this development proceed after his death.

THE LOST STORY OF WHAT MIGHT HAVE BEEN: SELF-ORGANIZING PROCESSES

From this point on we are looking at the lost story of what might have been. On Darwin's death he left all his papers on psychology to his worshipful young disciple George Romanes (R. J. Richards, 1987), who went on not only to become a leading British psychologist but also the first to lament what was repeatedly to block any chance for psychology to advance evolution theory in Darwin's intended direction. The problem was the progressively more fierce possession of evolution theory by biology and its adroit exclusion of the perspective and creativity of other fields. Only 10 years after Darwin's death, there was a move afoot by biologists to "hide certain parts of Darwin's teaching, and give undue prominence to others," Romanes (1897, p. 9) states in *Darwin and After Darwin*. Posthumously published after Romanes died of a brain tumor, Romanes had left this book to his student Lloyd Morgan to finish.

Whether "the misrepresentation be due to any unfavourable bias against one side of his teaching, or to sheer carelessness in the reading of his books" (Romanes, 1897, p. 9), it was inexcusable that the "neo-Darwinians"—for it was Romanes in this book who first coined the phrase—should "positively reverse" Darwin's teachings. The new breed of self-proclaimed Darwinians were "unjustifiably throwing over their own opinions the authority of Darwin's name," Romanes charged (1897, pp. 9–10). "I myself believe that Darwin's judgment with regard to all these points will eventually prove more sound and accurate than that of any of the recent would-be improvers upon his system," Romanes predicted (1897, pp. 9–10).

The next attempt to advance evolution theory in Darwin's intended direction came with no less a founding father for humanistic and many other fields of psychology than William James, although the ill-fated James, Mark Baldwin, and by now Romanes's student and disciple, the British neuropsychologist Lloyd Morgan, were more heavily involved (R. J. Richards, 1987). Perceiving the need for a new concept to account for evolution at the level of human emergence, Baldwin, Morgan, James, and the anthropologist Henry Osborn proposed the idea of "*organic selection*" as the higher developmental alternative to natural selection (Baldwin, 1896). Despite difficulties in explaining the idea for Baldwin et al.—and their functionally forgotten successors in psychology, as we see later in this chapter—the core idea was actually quickly conveyed by the wording. In radical contrast to "natural selection" as the basic explanation for how evolution shapes all organisms by the selection of "winners" by overriding external forces, the core idea for "organic selection" is of how the organism (e.g., ourselves) shape evolution by our selection of who or what we want to become.

In other words—astounding how at the time and thereafter this was so seldom clearly perceived—this was the basic heresy for the departure of psychology from all previous scientific fields. For here was the first statement for a perspective that could have brought the psychology of learning, experience, and choice by both group and individual into a theory of evolution that might then seamlessly segue from biological into cultural evolution.

However, fate intervened to further consolidate the monopoly of evolution theory by biology. As a result of R. J. Richards's (1987) detective work, more has now come to light of how what happened to Baldwin may have changed the course of history. In pursuit of the most important ignored emphasis for Darwin's "higher" theory, Baldwin was the first of a long line of psychologists pioneering not only the heretical psychology of "organic selection," but even more so of moral development. Then in 1908 he was discovered in a Black brothel in Baltimore by a newspaper reporter. The scandal not only forced Baldwin to flee to France but also seemed to help slam the door on the whole field of psychology through guilt by association.

It also seems to have so effectively scuttled the disruptive insight of "organic selection" as the higher level counterpart to "natural selection," that it took much of a century for the idea to fight its way back into mainstream scientific consciousness. This was the core idea for psychologist Gordon Allport's concept of "functional autonomy" in the 1950s (Allport, 1964); again for Jean Piaget in the 1970s (Piaget, 1980). Then in another touch of the irony that overlays the tragedy of this story, the advance for psychology that had been shut out of evolution theory by the monopoly of physics and biology by the end of this effectively "lost" century, now spread like wildfire throughout physics and biology. This was the evolutionary relevance (also known as "the Baldwin effect" or "organic selection") of what through a variety of radically advancing new concepts out of chaos and complexity theory is now known as "self-organizing processes" (Csanyi, 1989; Depew, 2000; Depew & Weber, 1996; Jantsch, 1980; Kauffman, 1996; Maturana & Varela, 1987; Prigogine & Stengers, 1984; Salthe, 1993).

THE LOST STORY OF WHAT MIGHT HAVE BEEN: MORAL DEVELOPMENT AND MORAL EVOLUTION

The other closely allied, and in his pioneering for science as well as evolution theory for Darwin, and the most important factor in "higher level" evolution, was the drive of moral development and moral evolution. Here, once again, the originating creativity of a handful of great psychologists was blocked and sidelined by the conformity of social as well as natural science—and the social, economic, political, and educational systems legitimized by this truncated science—to a neo-Darwinian biological paradigm of "survival

of the fittest" and "selfishness above all." Particularly interesting is the fact that the chief "lost" moral concern for Darwin, which was dropped by his successors in biology for much of a century, was also central to the work of Sigmund Freud and his disciples J. C. Fluegel, George Herbert Mead, John Dewey, Jean Piaget again as well as Baldwin.

Generally forgotten today is the hit or miss interest in evolution that Freud (1989) displayed in *Civilization and Its Discontents*. Among his greatest contributions was his extensive definition of the nature and operation of the superego and the ego ideal in relation to the ego as the basis for our moral development (Freud, 1990)—a position elaborated and greatly extended by Fluegel (1945). Although identified mainly as a sociologist today, George Herbert Mead (1934) is considered to be one of the fathers of social psychology. Again, in works almost wholly neglected today, can be found an intensive exploration of both evolution and moral directionality. The same is true of Mead's much better known friend and occasional mentor, the most widely influential American psychologist of his time, John Dewey (1922). As for Piaget (1965), uniquely equipped as a biologist as well as a psychologist through his studies of the moral as well as more general mind of the child, his was quite possibly the 20th century's greatest contribution to our understanding of moral as well as cognitive development and its tremendous importance to cultural evolution.

However, with the worldwide lionizing of Freud by psychotherapy and of Dewey and Piaget by the fields of education as well as the demands of other broad-gauged interests that took all of them elsewhere, their attempt to expand and update evolution theory was again easily deflected by the biologists. The biologists came to the monopoly of evolution theory equipped with the seemingly safe, familiar, and systems-popularized theory and the tale of the neo-Darwinian paradigm. From grade school through graduate studies they were also always there—by now entrenched in the textbooks for all levels of education throughout the Western world seemingly beyond all contesting.

Another pivotal figure in the vital stream of creativity is the psychologist most likely headed for a major revival of interest in the 21st century. If we look at his work again today, it can be seen that Kurt Lewin (1951; Loye, 1971) was not just another so-called father of social psychology and group dynamics. It becomes apparent that along with his pioneering of a clearly morally oriented action research—to solve, for example, the problems of racism, socialization of street gangs, design of better cities, equality of employment, the dynamics of democratic versus totalitarian governance—Lewin was also the precursor genius within psychology for the chaos and complexity theories prefiguring the needed wedding of evolutionary systems science with psychology (Abraham, 1997; Loye & Eisler, 1987).

We are now into the 1930s and 1940s and the Great Depression, the cataclysmic impact of Hitler, World War II, and the shock and implications of the explosion of the atom bomb and the devastation of Hiroshima and Nagasaki. Out of this profound stirring of the pot of concern emerged the new creativity of the moral evolutionary studies of psychologists Erich Fromm, Lawrence Kohlberg, and Carol Gilligan.

Stemming from his roots in Freud and Marx, in the remarkable *Man for Himself: An Inquiry Into the Psychology of Ethics*, Fromm (1947) wrote what still remains one of the most stirring arguments for the development of humanistic psychology in this direction. He also laid out the criteria for establishing a Global Ethic, first most widely and effectively answered by theologian Hans Kung (Kung & Kuschel, 1993 and then, from the perspective of evolutionary systems science as well as psychology, more recently by myself (Loye, 1999, 2006b). Building on the prior work of Baldwin and Piaget, Kohlberg (1984) launched the first major study of moral evolution to be sustained by the kind of institutional infrastructure that is needed to provide our species with what the challenge of the 21st century requires. Then came the jolt that unsettled Kohlberg as well as the male domination of science more generally as, in 1982, Gilligan—along with psychologist Jean Baker Miller (1976), sociologist Jessie Bernard (1981), and cultural evolution theorist Riane Eisler (1987)—finally managed to bring the neglected perspective of half the species into the moral evolutionary discourse.

THE CREATIVE BREAKOUT FOR HUMANISTIC PSYCHOLOGY

Despite the firm continuing hold by biology and physics on practically everything taught throughout Western society at all levels of education as evolution theory, by the second half of the 20th century, there was a widening consciousness of the need for the "higher" or more advanced form of evolution theory that Darwin prefigured as it affected humans. Out of by now 50 years of attempts bearing on the updating and expanding of evolution theory came the rise of humanistic psychology and the contribution of Abraham Maslow and others such as Roberto Assagioli (1965) and Kazimierz Dabrowski (1964).

Historically, Maslow (1968) most effectively stated both the initial and long range creative vision for humanistic psychology as well as transpersonal psychology and most recently the challenge of positive psychology. In the end what do we seek? Again the emphasis was on moral evolution, but with an increasingly urgent edge to go beyond just studying it, to direct intervention by the human agent in shaping human evolution. Said Maslow

(1971), the goal for the most critical challenge for human creativity is to develop the Good Person and the Good Society.

In other words, our evolutionary goal is not to bypass or transcend ourselves, as it might be said were the goals for behaviorism or a wholly otherworldly religion. Nor, contrary to the prevailing rhetoric for conventional theory is it merely to "adapt" to whatever comes our way. Through the ultimate outreach for creativity, our goal is to fulfill ourselves.

In so doing, as is generally well-known by now, in Maslow's (1968, 1971) needs hierarchy, one fulfills "deficiency needs" and continues on to "being needs." These include "self-actualization" which has, as one aspect, a "self-actualizing creativity" that operates in everyday creativity, a construct it helped inspire (R. Richards, 1999). In keeping with Darwin's original vision of the higher level of growth and health to which the individual can aspire—which culture can either nurture and advance or warp and block—for Maslow (1971) the self-actualizing person is relatively more aware, spontaneous, free, expressive, concerned with "being values" such as truth, goodness, beauty, wholeness, dichotomy-transcendence, aliveness, and justice.

Further intensifying the emphasis and the urgency of this message were two survivors of the Nazi devastation of Europe and the global threat of fascism, Assagioli and Dabrowski. "Superficiality, vulgarity, absence of inner conflict, quick forgetting of grave experiences, became something repugnant to me," Dabrowski wrote in proclaiming a heroic stance both for humanistic psychology and for the wedding of psychology with evolution theory (Piechowski, 1975, p. 234). "I searched for people and attitudes of a different kind, those that were authentically ideal, saturated with immutable values, those who represented 'what ought to be' against 'what is'" (p. 234).

Since those days, as the *Handbook of Humanistic Psychology* (Schneider, Bugental, & Pierson, 2001), *Handbook of Positive Psychology* (Snyder & Lopez, 2001), and sources for transpersonal psychology such as *Paths Beyond Ego* (Walsh & Vaughan, 1993) make apparent, there have been advances. Along the path we are pursuing here, Ken Wilber (1993), Allan Combs (1997), Stanley Krippner (1980), and Robert Ornstein (1991) have explored the evolution of consciousness. From Darwin's long-ignored concept of moral action as a central driver of our evolutionary level, Mihaly Csikszentmihalyi (1993), Frans de Waal (1996), David Sloan Wilson (Sober & Wilson, 1998), and Piagetian William Damon (1995) have brought this perspective back into the picture for evolution-relevant psychology. Yet after a whole century, the effort is still scattered and sporadic, with little more assurance of relating to or helping to build a body of theory in common—or of any significant recognition by society at large, rather than only by a special subgroup—than existed at the beginning for Baldwin, Piaget, Fromm, Kohlberg, Gilligan, or most of the rest of the earlier figures.

This takes us to what increasingly looms as a pivotal question for both psychology and evolution theory today: What happened to Maslow's vision of the Good Person and the Good Society?

THE COUNTERREVOLUTION OF EVOLUTIONARY PSYCHOLOGY

One could say that into the quasi-vacuum once filled with the humanistic aspiration that earlier prevailed in psychology, out of neo-Darwinian biology, there moved a particularly hard-edged new attempt to reassert its ownership of evolution theory with a biologized sociology and a biologized psychology. Another perspective would be that, in reaction to what is in effect a "second Darwinian revolution" I have been describing, came the counterrevolution of a backward shift toward the celebration of selfishness and "survival of the fittest" in both science and society. In other words, as decried by scientists and other scholars in a number of fields, in tandem with the dynamics of a radical rightward shift in national politics, first sociobiology and then evolutionary psychology emerged to close out the century with a bang (Rose & Rose, 2000).

Under fire by critics, evolutionary psychology has been evolving toward a less abrasive and more culturally sensitive approach. At the outset, however, to those of us old enough to have known and treasured the history of psychology as more than something to flip through in a textbook, not since the early days of American behaviorism has a new school of psychology trashed the views of its predecessors with such arrogance, vituperation, and ignorance. The introduction to the handbook for the new field, Barkow, Cosmides, and Tooby's (1992) *The Adapted Mind*, offers what are by now classic examples. Within this book, however, and behind the off-putting glitter of the new field's best-selling trade books, can be found something of enduring importance. In the quieter work of some of those attracted to evolutionary psychology by its popularity but leery of its excesses (e.g., Allott, 1991; Axelrod, 1984), can be found a critique of the status quo importantly bearing not just on the future for psychology, or of science, but possibly also of our species.

It could be said of humanistic psychology that it became too much a matter of catering to the needs of the comparatively well-off upper middle and upper class for therapy and self-absorbed work on personal development. By contrast, in keeping with the earlier emphasis for Kurt Lewin, the brash new field of evolutionary psychology focused anew on the problems of the lower class (e.g., urban decay and violence) threatening to tear society apart (see relevant papers in Barkow et al., 1992).

It could be said of transpersonal psychology that, with notable exceptions (May, Krippner, & Doyle, 1994), it suffered from a tendency within so-called New Age spirituality to celebrate a spiritual evolution devoid of the age-old essential link for spirituality with moral evolution applied to conflicts in our real world. By contrast, in keeping with the basic concern for Assagioli and Dabrowski as well as Darwin originally, in its focus on the nature and dynamics of altruism—as powerfully articulated by sociobiology founder E. O. Wilson (1975)—the brash new field focused on what drives and shapes morality as a bedrock concern for a society in which corruption and amorality threaten to shut off hope for any better future.

Most important, recognizing this as the central structural weakness for the social science of the 20th century, evolutionary psychology, at its best, focused on trying to link and bind together the sprawl of social science to evolution theory from which, ironically, biology had excluded psychology for more than a century. This is the powerfully expressed and historically vital central point for the otherwise problematic introduction to *The Adapted Mind* (Barkow et al., 1992).

However, with the arrival of the 21st century and the shock of events that have deepened awareness of the grim nature and true size of the challenges our species faces, again the excesses threaten to outweigh the advances for evolutionary psychology. Whereas some within or otherwise attached to the field strive creatively to join others in the search for a liberating new moral paradigm, many others still remain entrenched in what, despite all disavowals, essentially remains the old "selfishness uber alles" and "survival of the fittest" Darwinian paradigm (Loye, 2006b).

What seems to be happening is this: Rather than leading to an inviting new vision, and an inclusive outreach that might enlist science, education, and the necessary part of leadership for our society in a new effort to meet the true size of challenges facing us—as humanistic psychology and the human potentials movement so memorably promised earlier—evolutionary psychology has led to the kind of time-wasting squabbles that only the trade book publishers eager for best-sellers and regressive politicians eager for votes can enjoy.

Instead of humanistic psychology's earlier heralded "dawning of the age of Aquarius," where all might live together peaceably, we have a society scientifically and socially split apart. Socially, still after a century of billions spent on educating Americans, we are mired in the "Darwin Wars" pitting the creationists against the evolutionists. Scientifically, we are similarly mired in questions and issues that were either long ago resolved in philosophy or science (e.g., the "straw man" of the "blank slate"), or transcended by advanced evolution researchers using chaos, complexity, second-order cybernetics, synergetics, and comparable theories (Depew & Weber, 1996; Knyazeva, 2003; Salthe, 1993).

The heading for a book review in *Science* (Bateson, 2002) of Steven Pinker's (2002) best-selling paean to evolutionary psychology *The Blank Slate* seems to capture a reaction that is widening not just among psychologists but also in the higher levels of scholarship more generally: "the corpse of a wearisome debate."

THE CASE FOR EVOLUTIONARY SYSTEMS SCIENCE

Thus we have this brief history of the triumph of conformity over creativity in the case of a need to update and expand both the theory and the story of evolution. We have glimpsed the fact that beyond this, what is at stake is the survival of the outcome over millennia of the thrust and glory of human creativity at its best. So have we come to a dead end? Or can we find something new that can offer a mutually respectful new home for creativity in science as well as creativity in spirituality, to take us beyond being mired in the study and the rituals of our species' dismal past and present something useful for shaping our way into a better future?

In 1949 out of the scientific outback in which he had been relegated by mainstream biology and mainstream psychology, the renegade biologist Ludwig von Bertalanffy (1976) announced an idea for a potentially disruptive new field. As happened with all other fields of science within the 20th century, biology and psychology had become accustomed to living comfortably separated from one another with the guiding rule that one did not stray into the other's territory. The potentially disastrous consequences of this separation were also accentuated by the proliferation of ever more tiny subfields or disciplinary baronies wherein the holistic outreach of creativity was smothered by the constraints of subfield conformity. So the new idea did not catch on at first. However, von Bertalanffy was not to be stopped in his insistence on the importance for science of a new field that might transcend the dynamics of disciplinary and subfield conformities to liberate the new collective creativity of the "general systems theory" he was developing with Russian physicist, Nicolaus Rashevsky.

As von Bertalanffy had gained fame in the field of biology for, among other things, his development of a new method of diagnosing cancer, he could not be easily dismissed by biologists. Thus, when in 1960 he established an Advanced Center for Theoretical Psychology in Canada—which for 30 years thereafter was in the forefront of the evolutionary study of cognitive psychology—the wedding he envisaged between not only biology and psychology but also all the disparate fields of science became an ever more troublesome issue for traditional (i.e., conformist) science.

But while mainstream science found endless difficulties with the notion, it was seized with great enthusiasm along the creative periphery. To join

in the founding of this new scientific alignment, which they decided to call "systems science," out of economics came the evolution theorist and peace activist Kenneth Boulding (1978). Out of anthropology came Margaret Mead (1955). As his own work both foreshadowed and laid important groundwork for this development, out of the field of psychology Kurt Lewin would logically have joined them, but at the age of 56 he died in 1947.

From this amorphous newcomer to science then emerged the new core alignment that by now seems best designated as *evolutionary systems science*. Here, as celebrated and explained by Erich Jantsch (1980) in *The Self-Organizing Universe*, were the innovators of a variety of theories that became popularly clumped together as chaos theory. These included the Belgian thermodynamist Ilya Prigogine (Prigogine & Stengers, 1984) with a self-directive concept of autocatalysis and the Chilean biologists Humberto Maturana and Francisco Varela (1987) with autopoesis.

The base for chaos theory was in mathematics and natural science. However, soon, as I was among the first to point out in pioneering papers (Loye, 1990; Loye & Eisler, 1987), through the liberative thrust of the core idea of self-organizing processes, a revolutionary potential for the application of chaos theory to all of social science became apparent. It was during this time that a former Director of Research for the United Nations, general systems philosopher Ervin Laszlo, entered the picture with his formation of the General Evolution Research Group (or GERG, as it became known), in which I was involved as one of two psychologists along with two biologists and a physicist among its cofounders. Drawing together scientists of a variety of disciplines from ten nations, Laszlo launched what increasingly seems to me was one of the great creative visions out of the often radically diminished horizon for the social, humanistic, and moral science of the 20th century.

The world was still shuddering under the threat of potential nuclear holocaust when, in 1984, toward the close of the cold war, those of us who later formed GERG were called by Laszlo to a clandestine meeting in Budapest, then still under Russian control. The question he raised was to see if we thought it might be possible to use the then-rising popularity of chaos theory to build his vision of an action-oriented theory of general evolution that might be used by humanity to end the endemic insanity into which our species has fallen.

Long range, it was the vision of an evolution theory that might go beyond the scientific stalemate of the conformist fixation on biology and the past to incorporate the vast creative advances in social, systems, and futures science that for much of a century had been almost wholly excluded from the development of mainstream evolution theory. It was the vision of an evolution theory with ourselves—we humans, our species—at the leading edge, equipped to focus on gaining a better future for this earth and all living systems.

However pressing this might have been, the following situation was of greater immediacy and urgency. With scientists there from both sides of the iron curtain—seven of us from the West and three from Russia and Hungary—we were meeting in a Hungary still then ringed with a double wall of barbed wire and armed Russian guards, and in the background the thousands of tons in nuclear overkill for both sides of the Cold War.

What rather quickly gripped us was the vision of a theory that might be used not merely to understand, but to save our own and all other species. With chaos theory then coming into vogue, in getting underway Laszlo enlisted Prigogine, Varela, the Hungarian biologist Vilmos Csanyi (with a comparable theory of the evolutionary action of autogenesis), and American mathematician and chaos theorist Ralph Abraham.

The expanding idea was immense in difficulties but basically simple in goal: Why not use chaos theory to find a way of guiding our species through the social, political, and economic chaos we faced to an evolutionary stage of a higher and better order? In other words, why not find funding for and get underway with the development of a theory of evolution that might at last realize the cumulating vision from Darwin on, that is, of a creative theory that might be used by the thinking people of this earth and an enlightened social leadership to guide our species through the time of escalating and indeed species-threatening troubles now facing us to reach the higher plateau for humanity—long the dream of the great spiritual and philosophic as well as scientific visionaries?

THE GREAT ADVENTURE

Nudging at prevailing paradigms for psychology, forcing new thought, this was a time of maximal ferment for chaos theory, cybernetics, brain research, and systems science. In the midst of all these currents for thinking about evolution and the challenge lying ahead for our species, in 1985, along with three of his students, psychologist Stanley Krippner published a paper that, in retrospect, became of historic importance (Krippner, Rutenber, Engelman, & Granger, 1985). Although Krippner was at the time a former president of the Association for Humanistic Psychology (or HP) and a founding member of the HP-launched Saybrook Graduate School, the paper escaped the notice of all but a handful of us in the emergent field of evolutionary systems science. By now within the GERG membership, besides myself there was an authority on the evolution of consciousness, Saybrook and University of North Carolina psychologist Allan Combs (1997).

"At present, HP lacks a commonly-understood scientific paradigm to provide a theoretical framework with which to develop and evaluate models, methods, research, theories and therapies," Krippner and colleagues (1985)

wrote in the article, "Toward the Application of General Systems Theory in Humanistic Psychology." "We believe that GST [general systems theory] can perform just such a service to HP" (p. 113).

In raising the need for a new working partnership between psychology and systems science, this paper pointed toward the wedding between psychology and evolution theory that, despite the difficulties, seemed to be seeking to emerge. By the end of the 20th century, however, so little discernible progress was being made toward fleshing out a theory in keeping with the vision that originally animated GERG that I decided on a frontal attack. As in the old tale of the blind men trying to describe an elephant by feel—where one feels a leg and reports it is a tree, one feels the tail and reports it is a rope, and so on—it seemed to me that, along with other multidisciplinary systems scientists, for 14 years we GERGians had been meeting around the world in symposia for ever more ingenious reports on the "tree," the "rope," and so on. Increasingly, however, the message of events was that time was running out—if not for our species then most certainly for any chance of affecting anyone's vision of a better world. Why not then force the issue by bypassing leg, and trunk, and tail, and go directly for the elephant as a whole?

To probe new directions for science at the beginning of the 3rd millennium, the International Society for Systems Sciences, with GERG and 19 other organizations as cosponsors, had organized a World Congress of the Systems Sciences to draw scientists from all around the world to Toronto in 2000. Restating our goal as specifically the building of a "full spectrum, action-oriented," or fully human theory of evolution, and drafting a Toronto Manifesto to hopefully mark the occasion historically, from our GERG membership I pulled together two panels and a general discussion to focus not on something exotic, but rather, in the spirit of Lewin's action research, first to discuss "What should it look like?" and then "How do we build it?"

All too often science seems to move at less than a snail's pace in relation to the problems confronting our species. However, since then, with surprising rapidity, a promising prospect for both the long sought wedding of fields and the "full spectrum, action-oriented" theory has emerged.

Along the vital publications route, our Toronto papers first became a special issue for the main journal providing an international gathering place for evolutionary systems scientists, *World Futures: The Journal of General Evolution* (Loye, 2002a). More recently an update has been published as a book by the State University Press of New York with the title *The Great Adventure: Toward a Fully Human Theory of Evolution* (Loye, 2004).

With a foreword by the well-known explorer of creativity and cofounder of positive psychology Mihaly Csikszentmihalyi, including the

publication of my reconstruction of what now appears to be the psychologically oriented completion for Darwin's theory of evolution, *The Great Adventure* covers the "full spectrum" from natural through social science. Beginning with the foundational spectrum from physics through biology, GERG members Ervin Laszlo, biologist Stanley Salthe, cultural evolution theorist Riane Eisler, sociologist Raymond Bradley, psychotherapist (and past president of the Society for the Study of Chaos Theory in Psychology and the Life Sciences) Sally Goerner, systems scientists Ken Bausch and Aleco Christakis (a Club of Rome cofounder and past president of the International Society for the Systems Sciences), and systems scientist Alfonso Montuori of the California Institute for Integral Studies along with psychologists Allan Combs and Ruth Richards of Saybrook and Harvard Medical School fleshed out the prospects for the long scattered, divisive, and excluded superstructure, for example, the cultural base in the brain and the psychology and the higher reaches of creativity and consciousness. I provide a summary identifying 17 foundations and 10 guidelines in these chapters for what the fully human theory should look like, then in the last chapter a plan for building the theory as well as the new, more hopeful story of human evolution.

"Where is the new covenant going to emerge from?" Csikszentmihalyi asks in his foreword. The themes we have sought to bring back as well as newly introduce in *The Great Adventure*, he suggests, "are likely to be among the central ones of any new worldview," among them

> a new faith . . . of human beings about human beings. Not the traditionally taught evolutionary scenario dominated by competition and selfishness, but an understanding closer to the original Darwinian one that sees cooperation and transcendence of the self as the most exciting parts of the story. (Csikszentmihalyi, 2004, p. xii)

It is a heady prospect. A Darwin Project, with a council of over 50 distinguished American, European, and Asian scientists, educators, and media activists, has been formed to establish a strong educational base in new evolution studies to serve as a foundation for building the "fully human" theory of evolution. Already the Web site outlining our goals, with projection for distance learning courses and functioning library and book store (http://www.thedarwinproject.com), has been visited by over 400,000 presumably interested people in the United Kingdom, Germany, France, Italy, Switzerland, the Netherlands, Spain, Canada, Brazil, Mexico, Australia, Japan, as well as the United States.

Will creativity at last prevail over conformity?

We shall see, we shall see.

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