What do birds and humans have in common? That relatively straightforward question reveals no riddle or punch line but the compelling world view Michael Fullan presents in his stunning and important book, *Change Forces: The Sequel*. Fullan addresses two of the most critical understandings we can have about teaching and learning. Teaching and learning, like a bird or a human, are complex and evolutionary. This is because they involve living beings. By logical extension, schools are living systems. This fundamental consciousness informs Fullan’s wonderful understanding of the dynamics at work in schools which require theories of complexity and evolution to explain what is happening in these institutions and how to continue to improve them. That is what so many teachers, myself included, have been saying in different ways for decades. Everyone who cares about public education needs to read *Change Forces: The Sequel*. For it helps clarify why it can be so exciting and hard to work in schools and so difficult to keep improving them. As with any living organism, so much is going on that to keep it humming means not to control but to cooperate.

Fullan correctly advocates that complexity and evolutionary theories guide our thinking about schools and, most important, refresh and invigorate our strategies to recommit to our “moral purpose” in public education, its reforms, its restructuring, and its renewal. As an urban public high school teacher, who has taught mostly in the inner city of Los Angeles for more than a decade, I am delighted by Fullan’s clear and subtle thought, his dedication to a democratic “moral purpose,” and his enlightened theoretical maps. What is most powerful is that Fullan embraces forces of complexity and evolution that are fundamentally ecological.
Change Forces: The Sequel addresses living organisms – learning cultures that exist to develop knowledgeable human beings. They only thrive as they share what they know and can do. We may call these cultures “schools,” and in turn, schools “organizations,” but deep down they are living systems. As such, ecological models, together with complexity theory and evolutionary theory serve them, democracy and humanity best. It is time someone of Fullan’s stature made this argument clearly.

However, Fullan does not go far enough in Change Forces: The Sequel. He fails to deal head-on with the fact that schools’ cultures exist within and must contend with the society’s culture, which is driven by market forces and industrial models. The trends of educational reform have been market-oriented. We need to be savvy and wary of the market trends that conflict with and erode quality teaching and learning practices.

Fullan asserts our moral purpose in education to be primary. He defines that purpose on the micro level as “making a difference in the life-chances of all students – more of a difference for the disadvantaged…” and on a macro level as the “contribution to social development and democracy.” To him, this is a spiritual commitment. I agree. Fullan admonishes us to see that “At the very time we need more of a moral commitment to the public good, the forces of change are creating confusion, frustration and discouragement.” Ingeniously, Fullan then argues that meeting our moral purpose means applying sophisticated thought and adaptive, disciplined energies. He advocates using complexity theory and evolutionary theory as the mental maps to guide us further.

In lean and clinical prose, Fullan cuts through rhetoric to explain what forces are at work in schools and how complexity (chaos) theory assists our acuity. This new science, he eagerly points out, “claims that the link between cause and effect is difficult to trace, that change . . . unfolds in nonlinear ways, that paradoxes and contradictions abound and that creative solutions arise under conditions of uncertainty, diversity and instability.” We work best by realizing the capabilities to be creative at the edge of chaos. I would add that to do this one needs to be centered, grounded in a strong sense of oneself, one’s community, and one’s setting.

Practical conditions need to be worked on constantly to involve ways for people to move at a pace that is reasonable. This means slowing down at times, in order not to let the fast pace of change generate freneticism, fragmentation, and undue exhaustion. This is where small schools or learning communities, if structured well, can help. For smallness facilitates communication and personalizes teaching and learning. Smallness encourages teaming and the integration of curriculum. Small communities, including teaching fewer students, can help one be more
responsive, flexible and nimble in adapting to new situations and demands. Small communities of learning do not only provide a healthier setting for intellectual inquiry, they also make the kind of “inside-out” or “outside-in” collaboration, particularly the “deep inside collaboration,” which Fullan addresses, sustainable. They help maintain connectedness. Smallness alone does not ensure quality. However, without building smallness into our practice, structures and strategies, quality wanes. Teaching and learning are hard enough without appreciating that we are doing them at the edge of chaos. Practical conditions in schools need to enable a personal and communal equilibrium.

To show what evolutionary theory is and how it can apply to schools and their development, Fullan discusses the successful adaptation and development of knowledge among titmice, which are social birds, as opposed to the failure of robins, whose males are territorial and cannot share similar knowledge. This evolutionary insight recognizes that the essential aspect of successful school cultures and communities is their members’ ability to cooperate. That capacity has long been recognized as a strong support for learning and productivity, in general, and for democracy, in particular; hence, cooperative learning has become a prominent and necessary aspect of quality pedagogy. Cooperation also marks the nature of team-teaching and interdisciplinary efforts. Such cooperation can be very hard work. Yet, the norm is to have conditions which call for educators to do far too much. Unfortunately, Change Forces: The Sequel says nothing about the specific types of practical conditions that have strengthened collaboration.

Currently, conditions demand teachers to do more and more things, trying to get the young to know more and more “stuff,” contained in too many “high standards.” Many teachers also still work with too many students. Although some high school classes are small, the norm is still that each teacher has a large number of students; for myself anywhere from 155 to 200 a semester. In addition, while “high standards” are essential, no curriculum should be determined by externally imposed standards amounting to more than 50% of a teacher’s responsibility if students are to be supported and challenged as learners within a particular context of community, place and time. Yet, today’s conditions demand that one does too much at a faster and faster pace, which leads to doing little or less over all, incurring unnecessary stress. For example, studying the Bill of Rights, a quintessential piece of American history with pivotal political, social and economic implications, becomes a trivial pursuit that has little meaning in the lives of the students today except one more thing to know for an exam or one more project to accomplish.
Like any significant knowledge, the Bill of Rights should engender powerful ideas and ways of being, not just count as another standard to use in a right answer. However, moving too fast, with more and more to do, compels teaching and learning to be an accumulation. Students begin to feel that there is no time to enjoy what they are doing, let alone figure out what their knowledge can mean in their own lives, except to get ahead, into college. Assembling things to do and know is not inquiry. Investigation means delving deeply into resources to question, explore and experience so one can assimilate, make meaning and internalize.

Every hour a teacher sets up a class to engage in quality inquiry, involves considerable preparation to integrate resources and instructional strategies suitable for the diverse personalities or intellectual dimensions of a certain class. A teacher also spends more hours responding to student work. For children to read, write, discuss, gather data, recollect information, probe ideas, make observations, weigh facts, communicate, calculate, collaborate, express themselves, share conclusions, critically think, problem solve, make meaning, and so on, as well as build deep understanding and community, take real time.

While the rate of change may be fast these days, the majority of learning cannot afford to be. Accomplished teachers know how to enrich experiences and support youth by varying and managing pace, much like the cadence a bicycle rider maintains to go long distances. Using time carefully, even slowing things down appropriately, keeps the pace in learning reasonable for each student and group. This means using “wait time” after a question is asked or encouraging some students to pick up their pace, reading three poems instead of one, because they prove more adept; or using journal writing to stop and reflect. To use time well means to know how to pace oneself.

It is not just the current pace of change, due to technological advances, that hastens our endeavors. We could deal with that rather well if we used tools and strategies that respect the characteristics of living systems, as complexity and evolutionary theories require. But we are also still hanging onto industrial models in our culture, dominated by market-orientation and behavior. These industrial models wrongfully treat children as objects or inert products. Teachers and staff are mistakenly considered laborers and administrators managers, all supposedly aiming to transact in and produce knowledge as if it were a commodity and to produce kids as if they were cars. Most educational reformers challenge industrial models, but they persist. Fullan does understand knowledge to be “not the acquisition of best practices as products . . . [but] the ability to generate and learn new ideas.” Ironically, he misses a capital opportunity to counter the market
and industrial forces directly with an evolutionary concept of knowledge and knowing. We need his voice on the matter.

Ironically, we speak of moving to a service-oriented and information-oriented economy rather than a manufacturing one, but we surrender to using tools of accountability that standardize, promote linear thinking and dictate homogenized development. Change Forces: The Sequel could have deliberately and formidably opposed these threats to applying complexity and evolutionary theories. While Fullan’s eight “Complex Change Lessons” would make powerful posters to hang in classrooms, schools, especially lunch rooms, and administrators’ or policy-makers’ offices, they omit vital facts and concrete details of the lives involved in the schools. There is no reference, for example, to the inordinately labor intensive and time consuming efforts of high powered collaborative organizations and schools and their effect on personal lives.

Fullan wants us to fulfill our “moral purpose,” but to do so we need to confront the fact that in the United States, and in many other societies, we have vested our sense of democracy and freedom in private property and capitalism, endorsing private achievement. Currently, school cultures and communities exist within a societal culture that is largely market oriented and this devalues human thought and action as commodity production. Yet humane development is surely the end of education – children and youth are intellectual, spiritual, emotional, physical beings.

Success and achievement mean more than getting a job and taking care of material needs. They also mean taking care of democracy by investing social capital in the common good and tending to grassroots political involvement concerning what is being done in our name. Conversely, the rules of competition in current market models drive the incentives for private achievement rather than those for public good. Standards – meant to clarify academic goals and unify our efforts to achieve them – have turned into hurdles, which use industrial accounting systems, namely standardized tests as single measures of success.

Fullan rejuvenates the Jeffersonian dictate of public schooling for democratic ends with determination and insight. However, to do this in complex, postmodern times when the rate of change has accelerated and our democratic needs are growing, we are compelled to be more sophisticated thinkers and adaptive activists. Without the time and structure to support democratic behaviors in schools and beyond, people cannot sustain the hard work necessarily involved in a rich culture of inquiry. They burn out; quit; hold back; barely try; or make “heroic” personal sacrifices that may well be rewarded or celebrated but are not the bases of a sustainable system of education or healthy models for our young.
Change Forces: The Sequel merits a lot of our attention. Its sophisticated reasoning offers leadership and encouragement. It is a compelling contribution to our efforts to educate children well so that we may fulfill our moral purpose and democratic promise. Yet Fullan’s book is still not the whole story. We also need to keep our eyes open to how unfettered market forces can collide with evolutionary forces, wrecking educational reform and renewal. Ecological, not industrial, models serve life and democracy best because teaching and learning are essential acts developing human beings, not machines.
Each contributor has chosen a practice or a teaching they feel will best support you as you courageously and nobly step into the role of evolutionary leader yourself, consciously committing yourself to the task of leading the way towards greater levels of care and well-being in your communities, and in our world. The most important spiritual practice for an aspiring Evolutionary Leader is the deep and ongoing contemplation of what evolution means. Once we learn how to distinguish the complex design of our own ego-based mind, we are better equipped to move from identification with our own ego-based separation and into a more awakened integral, holistic and dialogic perspective on life in the world.