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Part I

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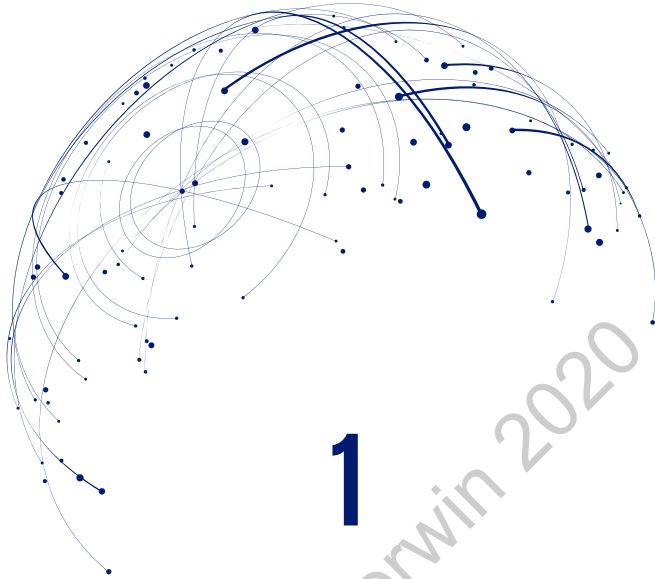
System Change

The two chapters in Part I set the stage for the book.

Chapter 1, *The Nature of the Beast*, examines three big change forces: the march of evolution; the dramatic toll of rising inequity; and the serious deficiency of current policies. Although the average citizen cannot do much directly about these mighty societal factors, to know them is to understand the context within which we live and the trends that will affect our immediate future. To appreciate evolution is to realize how humankind has become so magnificent as a species, while acquiring the power to self-destruct. Social awareness and attraction to others can be one of humankind's greatest natural assets. Cooperation and teamwork have resulted in prodigious accomplishments. Or they can lead to tribalism, distrust, deadly conflict between groups. The message to the reader is to help tip the balance in favor of collaboration on an ever-wider scale, not just in our own local circles. If the three forces—social evolution, greater equity, and better policies—can be channeled into future developments, we have a chance of overcoming the status quo, which we argue will not end well if allowed to persist.

Chapter 2, *The Emergence of System Solutions*, begins to map out how we might tackle the dangerous state of the status quo in order to create a better future through *coordinated system change*. We need to do this by taking the following steps: (a) realizing the limits of complex solutions in favor of strategies that mobilize people at all three levels of the system—local, middle, and macro; and (b) appreciating and cultivating the *phenomenology of good system change*—that is, by understanding the worldview of those at each of the three levels of the system, and by strengthening mutual understandings of people across the levels. In essence, this means understanding one's own and others' *context*—the details and nature of everyday lives—and (c) developing an appreciation of a new form of system change in which systems operate in a combination of upward proactivity (to other levels), downward liberation and facilitation, and lateral learning within each level (see Chapter 2, Figure 2.2).

Part I provides a springboard to successful system action across the three levels that we take up in Part II.



The Nature of the Beast

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It's turtles all the way down.

*—An infinite regression anecdote
cited by Stephen Hawking*

This chapter is not a treatise on system change per se. We won't be taking the reader into any abstract theoretical discussion. The moment you do that is the moment you lose the plot, which is *What can ordinary people—all people, really—do to reflect system thinking in their daily existence?* The latter is the only hope for practical system change to have a proactive and ubiquitous presence and thus make the profound difference that will be required for survival of the human race.

4 PART I: SYSTEM CHANGE

If you stay at the abstract level, it is easy to get bogged down, hopelessly confused, and end up with a sense of the surreal. You can carefully examine descriptions of “system thinking” and of “complexity theory”

Our goal is to make system thinking accessible to the average person.

and still not know what each means let alone their relationship to each other and to practical matters. Both theories address hidden forces, interdependencies, nonlinear developments, continuous feedback, complex adaptive responses, negative consequences for the environment, and much more. If you *study* these theories—say, do a doctoral dissertation on the topic—you will end up with very few people who want to talk with you. Yet understanding and influencing system change is crucial to the very future of humankind. The question then, and our goal in this book, is to make system thinking available to the average person—essentially how to better understand and influence the dynamics of change within and across the three levels of the system.

We get at system dynamics in education inside the practicalities of working with all levels and all ages of those within the system. It turns out that “leading practitioners” are system players even if they don’t know it explicitly. So, here is our main proposition for this book: Whatever level of the system you operate in, you need to become expert practitioners in working with systems and members at all levels therein, indeed in leading others to do the same. Our message is that you must immerse yourself in action and reflective practice. Learning complex things takes us to the heart of how change best occurs among humans. It usually is not through some cognitive breakthrough (aha, I’ve got it), but rather through new *experiences that cause us to ask new questions*. We know from neuroscience in the past decade that new things that “stick” with us are a result of episodes that touch us *emotionally*. If these happenings are social in nature, they become all the more powerful because people reinforce and extend each other in groups. As we proceed in this fashion, we can *then* make sense of our learning cognitively. Here is the deal then: Because we build our theory from the ground up in interaction with practitioners of all ages and at all levels, we can guarantee that you will know more about systems theory after reading, thinking, and trying out the ideas in this book than if you spend triple the time studying systems theory. And your learning will be distinctly practical;

you will become more effective in leading and creating improved learning for students across the system. We are being pedagogically playful here. You should do both—make theory and practice a two-way street.

In the course of the chapters, we will examine how system dynamics play themselves out and what this means for how we should address them by way of policy, strategy, and everyday practice. In this chapter we take up the fundamental question of why changes in the status quo are fundamental to our future and the existence of the planet. We identify the forces that may in combination provide the power to overcome our most formidable obstacle: the inertia of the status quo.

In Chapter 2 we identify some of the practical language of system thinking in order to get at detail in ways that leverage system change. This will set us up for Part II where we delve into the system at each of its three main levels and their interaction: local, middle, and macro.

The first key question in Chapter 2 is “Are there more forces potentially in favor of positive change compared to forces preserving the status quo?” If the answer to that question is yes, we would suggest that the lack of systemic thinking is getting in the way of bringing about changes that people actually desire or would embrace upon experiencing it. This would then take us to identifying the practicalities of systemic forces that would move education forward. At the present moment, in our view, the world may be evolving to a state that the majority of people on the planet do not desire.

We want also to say that no system in the world has solved the problem of achieving ongoing system change and improvement—not Finland, not Singapore, not anyone. In fact, the world is currently losing ground relative to educational success, as we will show in this chapter. Moreover, more and more policy makers are realizing that current strategies are not working. In this sense they are more open to alternatives. Our book is intended to provide a new and potentially more powerful alternative for moving forward into 2020 and beyond.

The times resonate well with the Canadian poet and songwriter Leonard Cohen’s 1992 song “Anthem”: “Ring the bells that still can ring. . . . There is a crack, a crack in everything. That’s how the light gets in.”

We will see in Part II that there are systems, big ones like California, that have given up on the bells that have stopped or never did ring and are now leveraging the cracks of light that are shining on systems than can work.

Just over 25 years later (2018), on his birthday and just before he died, Cohen lamented that no light was getting in. His haunting song “You Want It Darker” speaks of hopelessness and “We kill the flame” despite “a million candles burning” represents a state of despair.

In this chapter we do flirt with disaster as we consider three big reasons why we need a system perspective to face off with the devil: (1) evolution should worry us; (2) inequity is reaching dangerous heights; and (3) current policies are woefully inadequate. In each case and in combination, we will see that large numbers of people at *all socioeconomic status (SES) levels* are realizing that humanity is steadily losing ground to powerful negative forces. Many people, especially the young, are desperately seeking a solution and are willing to fight for it.

If turned in positive directions, the three forces—evolution, equity, and better policies—could combine to halt and reverse the decline that we are so dangerously living through. Or, if left alone, they could be the end of us. The future could go either way—thrive or dive.

Three Reasons for Adopting a Systems Perspective

Adopting a system perspective will enable us to address

1. The current trajectory of evolution
2. Actions to combat inequity and increase equity in society as a whole
3. Actions to improve policies to strengthen systems as a whole

THE MARCH OF EVOLUTION

Drawing on the empirical findings of leading evolutionary biologists, especially E. O. Wilson (2014), D. S. Wilson (2019), and neuroscientist Damasio (2018), and our own and others, work in the “humanities,” we lay out the case that the human race is getting increasingly close to a tipping point that could go either way: toward flourishing or radical decline. Right now, given inertia and lack of capacity to act collectively, the odds favor extinction.

The argument is complex but not difficult to amass and understand:

1. Humans do not have a special place in the universe; we “lucked out” due to evolutionary developments that ended up privileging us with big brains and capacity therein.

2. Humans are not intrinsically good. Each of us is conflicted; sometimes we are selfish, other times committing to others and the common good (only sociopaths—about 4% of the population—are oblivious to good). We may have tendencies to cooperate and favor mutual help, but only if certain conditions prevail. We believe that “goodness” has the edge, but it needs certain conditions to win out. Hence our book.

3. We are social beings born to connect: We have “inherited propensities to communicate, recognize and evaluate, bond, cooperate, compete, and from all these, the deep warm pleasure of belonging to our own special group” (E. O. Wilson, 2014, p. 75). BUT, this can just as easily take the form of “tribalism”—my group is good; all others are bad or irrelevant.

4. Building on number 3, D. S. Wilson (2019) states: “Modern evolutionary theory tells us that goodness *can* evolve, but only when special conditions are met. That’s why we must become wise managers of evolutionary processes. Otherwise evolution takes us where we don’t want to go” (pp. 13–14). Yes, goodness “can” evolve, but only under certain conditions. We are optimists and believe that humankind is tipped in favor of positive conditions. Stated differently, when conditions worsen, “system thinking” is more likely to be on the rise because people take to the big picture more readily when the need is evident. Our book is about how goodness can evolve.

5. “This means that an evolving population is not just a population of individuals, but also a population of *groups*. If individuals vary in their propensity for good and evil, then this variation will exist at two levels: variation among individuals within groups, and variation among groups within the entire population” (D. S. Wilson, 2019, p. 77).

6. Damasio claims that “so far” evolution “has guided non-consciously and non-deliberately, without prior design, the selection of biological structures and mechanisms capable of not only maintaining but also advancing the evolution of the species” (p. 26). Notice the qualification “so far.”

8 PART I: SYSTEM CHANGE

7. Our invisible fortune (as just mentioned in number six) may be running out for two reasons. One is Damasio's claim that things are becoming much more complex to a point where destructive forces may prevail. The second reason is that humans have now reached a level of sophistication that they can intervene in biological evolution, such as with clones, artificial intelligence (AI), or extending life. Further, these interventions likely have unknown evolutionary consequences. There is no reason to believe that by themselves AI and its associates will favor humankind—if anything just the opposite (see point nine below).

8. While humans are born to connect to other humans, this does not apply (except for a few of us and for many indigenous populations) to Mother Nature and the universe—the latter to most of us are not “living things” in the same way other humans are. This fact alone and our neglect of the nonhuman but living universe could be the end of us. Humans have arrogantly and naively become self-appointed godlike rulers of the universe. “We have become the mind of the planet and perhaps our corner of the galaxy as well. We can do with Earth what we please. We chatter constantly about destroying it—by nuclear war, climate change . . .” (E. O. Wilson, 2014, p. 176).

9. There are other forces at play such as climate change and technology that are part and parcel of evolution. Climate change is perilously close to destroying the planet and large swaths of humans with it. More broadly, don't expect technology to do us any favors. It has a life of its own and for every marvelous invention there is the basic growing realization that “no one is in charge.” A former Google strategist and Oxford-trained philosopher, Williams (2019) argues persuasively that technology has robbed us of one of the greatest natural resources that humans have: the capacity to *pay attention*. “Information abundance consumes attention” observes Williams, leaving little time to think (p. 15). He concludes that the “liberation of attention may be the defining moral and political struggle of our time” (p. xii). Further, there is “a deep misalignment between the goals we have for ourselves, and the goals our technologies have for us” (p. 9). The more our attention is consumed, the less prudent we become, argues Williams: “Sometimes the struggle to see what is in front of your nose is the struggle to get away from it so you can see the whole” (p. 12).

More worries: Thomas Siebel, CEO of a company that provides artificial intelligence software, captures the latest developments of digital transformation with a book that has the ironic subtitle *Survive and Thrive in an Era of Mass Extinction* (Siebel, 2019). He then proceeds to describe the core of digital transformation as “the confluence of four profoundly disruptive technologies—cloud computing, big data, the internet of things (IoT), and artificial intelligence” (p. 9). Siebel concludes that these digital transformations “can unlock tremendous economic value, and competitive benefits” (p. 209). But for the life of us we could not find the words “human” or “social” in the entire book. Anytime you get powerful forces with no humans in the equation, start running for cover!

This is where evolution is taking us when we don’t have time to pay attention. The solutions will have to be systemic. In the past we could count on evolution and the comparative simplicity of social interaction to resolve these issues in our long-term favor. *This is no longer the case*. It is too complex, too unpredictable, and too susceptible to arbitrary intervention by humans acting as idiosyncratic agents. As Damasio puts it, given our more complex evolution and intervention therein, “To expect *spontaneous* homeostatic harmony from large and cacophonous human collectives is to expect the unlikely” (p. 219, italics in original). If we can no longer depend on “spontaneous” solutions, it is time to deliberately try and shape the future for the better.

We are not talking about one country getting better here and there. True to our system principles, the solutions concern systems within systems that are interdependent. System thinking for Senge and others has always been about *sustainability* under ever complex, multivariate conditions. The biochemist Leslie Orgel’s Second Rule is “Evolution is cleverer than you are”—meaning that random variations seeking adaptive solutions will find solutions that humans would not have discovered. True enough—*so far*—but humans are now tampering with gene manipulation and enabling technology to run rampant in a way that may alter future trajectories for the worse. Thus, the question becomes: Can we position ourselves to fashion education as a force for tweaking evolution in a positive direction? We will need systemic thinking to do that. We will need a new kind of education system—one that features equity, excellence, and well-being.

So, one big force for change increasingly obvious to people of all ages is evolution. Up to this point those who have studied or thought about evolution have assumed that it eventually is a good thing (Damasio's "without prior design [has ended up] favoring the species"). Our point in this book is that the forces are so complex, dynamic, and fraught with danger that we can no longer assume that good outcomes are guaranteed.

We like Andres Campero's (2019) treatment of human evolution because of its comprehensive simplicity. Campero states that we can boil down our complexity to the interaction of three fundamental forces: genes, culture, and consciousness. *Genes* are molecules and patterns of molecules that have evolved over time through adaptation to ever-complex environments. Genes are at the core of many of our instinctive actions and desires. They are a result of a long process of "chemical evolution" that led to complex molecules resulting eventually to become our evolving DNAs.

Cultures refer to the customs and habits of groups and subgroups that derived from rudimentary and eventually sophisticated forms of communication and interaction. At some point, claims Campero (2019), "cultural evolution started to become intertwined with genetic evolution thus changing the evolutionary landscape" (p. 34). *Consciousness* is the mystery. Where did it come from? If it's a chemical process, when and how did it first emerge? Genes and culture exist independent of consciousness. Even though we can describe and internalize cultures, they originate and exist mostly outside our consciousness.

Where does this take us with respect to the present and near future? For one thing, we are at the point of consciousness and knowledge where "we can decide which genes we want to eliminate and repress," and because "evolution is cleverer than you are," we don't know where this manipulation of evolution will take us. Culture is also an unpredictable variable. Culture is not conscious in the way we normally think of consciousness. Culture becomes more or less known by members; cultures can be internally positive (tribalism) and externally hostile (to other tribes). Or cultures can become forces for the common good globally. This takes us to the question of whether evolution is likely to be a positive or negative force for the future.

The potentially good news is that it is our social nature that sets humans apart. We are borne to connect. The big question is which way will it go—connect for the good of humankind, for the destructive, or for the neutral (the latter will by default favor the destructive).

In some ways, evolution—the interaction of genes, culture, and consciousness—is neutral on the big question of “What is our future?” We are pretty sure it tells us that it could go either way—very good or very bad (D. S. Wilson’s “evolution could take us where we don’t want to go” [2019]). At the end of the day, our own belief is that humankind’s evolutionary nature as of today (2020) favors cooperation for goodness, creativity, and the thriving of our civilization. But it needs to be influenced in the right direction. Our book is intended to articulate the argument, degrees of proof, and actions that will help leverage the likelihood that “goodness” will prevail in the future. And for that to happen, education will have to shift from its passive role of, in effect, allowing society to deteriorate, to take up the mantle that social activist George Counts proffered in 1932, *Dare the school build a new social order!* In this book we will not be able to take up Counts’s dare in full, but the chapters in Part II do start us down the pathway toward a new social order.

What actions can education leaders take to leverage the likelihood that goodness will prevail?

THE DRAMATIC TOLL OF RISING INEQUITY

For the last 40 years, we find all over the world *exponentially ever-expanding inequality*. It is so pervasive, so out of control that we can only call it an evolutionary phenomenon—it is built into the system as a self-perpetuating, seemingly inexorable force. In coldhearted systemic thinking, for a moment at least, we won’t even dwell on its social injustice. Regardless of one’s values, extreme inequality is bad, even fatal for all of us if combined with the other two forces in this chapter.

At the macro level, epidemiologists Wilkinson and Pickett (2019) have produced two detailed empirical analyses over the past decade of how countries are faring economically, socially, and mentally in life. We give you their overall conclusion:

How More Equal Societies Reduce Stress, Restore Sanity and Improve *Everyone’s* Well-Being (subtitle of their book, *The Inner Level*, our italics)

12 PART I: SYSTEM CHANGE

The authors developed an “Index of Health and Social Problems” that combines measures of life expectancy, trust, mental illness (including drug and alcohol addiction), obesity, infant mortality, children’s math and literacy scores, imprisonment rates, homicide rates, teenage births, and social mobility” (p. 3). Wilkinson and Pickett found that all major “health and social problems are more common in unequal societies” (p. 3). In the so-called developed countries, the United States and the United Kingdom lead the world in “worse” health and social problems *and* in inequality.

Wilkinson and Pickett’s (2019) main premise is that we need to understand that all of humanity is sensitive to what they call “a deep psychology of inequality”:

We have evolved to be extremely sensitive to social status. Bigger material differences create bigger social distances between us and add to feelings of superiority and inferiority. As people become more concerned with status they become more out for themselves. (p. x)

In such cases “all of us feel increasingly emotionally insecure” (see also Arnade’s powerful 2019 book called *Dignity*, to which we return in Chapter 6). This partly accounts for what Wilkinson and Pickett call “one of our more surprising findings”:

Inequality affects the vast majority of the population, not only the poor minority. Although its severest effects are on those nearest the bottom of the social ladder, the vast majority is also affected to a lesser extent. This means that if well-educated people with good jobs and incomes lived with the same jobs and incomes in a more equal society they would be likely to live a little longer, and less likely to become victims of violence, and their children might do a little better at school and would be less likely to become teenage parents or to develop serious drug problems. (p. 5, italics in original)

Before delving into these issues let’s put a placeholder on developing countries—a topic to which we will return in the final chapter. In such countries poverty and inequity are extreme as noted by Gillian (2019),

a lawyer who analyzes the legal plight of what she calls the Bop or “Bottom of the pyramid”—the 4 billion of the 7.5 billion population at the bottom—who survive on the equivalent in purchasing power of less than about US \$8 a day” (p. 281).

Back to developed countries. As it turns out, conditions are worsening, not due to lack of overall money but rather to extreme, one could say perverse, distribution of resources. As we further examine the wealthier countries, we will spare you chapter and verse. The Economic Policy Institute (2018) provided a recent update on the so-called bottom 1% phenomenon. In the past 30 years the wealth of the top 1% (or whatever percent you want to take) has grown in leaps and bounds (the following figures are from the EPI report). The top 1% has seen its wealth grow by 157% compared to 22% for the bottom 90%. In the same period the bottom 90% saw an annual wage growth of 5% compared to 30% for the top 1%. The top 1% accounts for over 13% of total wages; the top 10% over 39% (obviously leaving 61% for the remaining 90%). Then there is Jane Mayer’s (2016) *Dark Money* that takes us through how scores of billionaires acquired their money. Or Richard Florida’s (2017) analysis of how the poor are faring increasingly badly in the American city. To take two of Florida’s countless demographic findings: “By 2014, 14 million Americans lived in concentrated poverty in extremely poor neighborhoods—the highest figure ever recorded and twice as many as in 2000” (p. 98). And “one in four black Americans lives in a high-poverty neighborhood compared to just one in thirteen whites” (pp. 116–117).

We also see the systemic, hidden ramifications of being poor. Political science professor Eubanks (2017) conducted a detailed examination of how the growing automated social services sector affected the poor. Doing an in-depth study of access to housing resources in Los Angeles and a child welfare agency in Pittsburgh, Eubanks arrived at this main conclusion:

What I found was stunning. Across the country, poor and working class people are targeted by new tools of digital poverty management and face life-threatening consequences as a result. Automated eligibility systems discourage them from claiming public resources that they need to survive and thrive. (p. 11)

In the end, concludes Eubanks: “automated tools for classifying the poor, left on their own, will produce towering inequalities” (p. 200).

Even when the system appears to work, it doesn’t. The culprit? Hidden systemic factors. Linda Nathan (2017) was the principal of the Boston Arts Academy, a secondary school designed and committed to the academic success of poor and minority students. More students did indeed graduate with higher grades. Nathan describes how many graduates failed after they left the school and attended postsecondary institutions because of the absence of “surrounding support.” Poor students found themselves confronted with hidden costs or missed deadlines that led to inability to continue. While race was less an issue at the secondary school (which was designed to support these very students), students had different experiences once they got to college. Some direct racism was encountered, but most of all what took its toll was being left on your own as an individual where there was no social support, and where being a minority student was too difficult for individuals to navigate through an impersonal bureaucracy (indeed, an impersonal society).

Lewis and Diamond (2015) found the same phenomenon in their book *Despite the Best Intentions*. Riverview High School is a well-funded school that espouses equity for its diverse population of whites, blacks, and Latinx students. Despite policies to the contrary, Riverview ended up favoring whites and disadvantaging others in both treatment and outcomes. More generally across the United States, the same phenomenon of discrimination follows minority students into higher education. Kirp (2019) in his account, *The College Dropout Scandal*, found that 40% of enrolled students—with minorities showing a higher percentage—fail to graduate from four-year community college programs. Equally disturbing is Tough’s (2019) portrayal of those who think that college may be the route to social mobility, only to find that it is a bridge to nowhere.

What Nathan, Lewis, and Diamond, Kirp, and Tough rail against is the false assumption that the individual—in this case students in poverty and minority status, including those who want to move upward—will figure it out. As Nathan puts it:

What all of the talk seems to miss is the importance of putting children’s experience front and center. In other words, when the emphasis on grit ends up as a stand-alone pedagogy, the context of a student’s life and family circumstances is ignored. (p. 76)

We also find increasingly that young people at all socioeconomic levels (SES) are suffering. The poor suffer for reasons that we have just seen; it turns out, however, that better-off students are also not faring well. Increasing numbers of them find that present-day schooling holds little purpose and meaning for them. Some do get the grades, and others are helped by influential rich parents who buy their way into best universities, but it is clear that this phenomenon is wearing thin. Many of these so-called privileged students end up doing worse in their lives than their parents.

The problem of lack of purpose among youth is documented in detail by Heather Malin, who is director of research at the Stanford University Center on Adolescence. In several studies the best that youth could do in response to the question “What is your purpose at school?” was “to get good grades, go to university and get a good job.” Malin (2018) “found no difference in purpose between low-income students and their more affluent peers” (pp. 65–66). In fact, we hypothesize that students who have had some difficulty in life and have overcome it (with or without help) end up having greater drive. In the meantime, the unfortunate conclusion overall is that only about 24% of senior high school students “have identified and are pursuing a purpose for their life” (Malin, p. 1).

No matter what the measure, we can say that the majority of students—some two-thirds or more—find that present schooling is not meaningful. Stress is high and increasing at a rapid pace for students from *all* SES levels. For students these days the modal response to schooling is either *alienation* (if you live in destitute circumstances) or *stress/anxiety* (if you are swept up into the academic rat race). In an odd way these findings indicate a new potential for change because so many young people at all SES levels are deeply dissatisfied and have withdrawn. Our rhetorical question is “Could young people be attracted to a better agenda?”

On a societal scale there is even greater trouble. Growing inequity, frozen social mobility, desperate lives of indignity, hopelessness, and eventually resentment toward just about everyone destroy trust and social cohesion. Democracies fail; societies crumble. There is nothing about this scenario that can end well.

Our question—call it a last-ditch effort—is “Is there another pathway?” Can growing equity, along with excellence, be the solution that benefits everyone? Can we help evolution become smarter than us once more? This other pathway to a better future is more fundamental, more related to

evolution's hidden tendencies, and more speculative. *But it can be tested!* If we make equity a “first cause”—alongside meaningful learning, purpose and excellence, and in relation to everyone learning—we have a chance of getting an outcome that is a “win for all.”

In short, pay attention and make reversing the deadly path of galloping inequity in favor of excellence for all as priority one. It may be the only chance we have. And it is something that education could become good at.

THE SERIOUS DEFICIENCY OF CURRENT POLICIES

The third factor leading us to a systems perspective relates to policies that could influence the conditions for evolutionary success—such as policies related to income distribution, climate, poverty, jobs, cooperative endeavors, inequity, and schooling itself. There are two domains of policy and action. One is societal and concerns inequity and the economy. The other is educational and centers squarely on the school system.

Political action beyond education is outside the scope of our book, but we would posit that this may be the time where, in the words of poet Seamus Heaney, “The long term tidal wave of justice can rise up, And hope and history can rhyme.” On the one side is extreme inequity in wealth; on the other is persistent and stagnant inequity in schools. Relative to the former, money to the rich seems insatiable where currently 1% of the population in the United States possesses 29% of the wealth. If this trend is inevitable, we are heading for mass extinction. A big part of the societal solution will have to be addressed politically, and there are some signs that the combination of action at the top (e.g., the rich being concerned, and politicians being elected to tax and redirect money), and the bottom (political uprising) could turn some of the tide. This extends beyond our book's scope, but here is our point: Education must and can play its part in saving society. This is the role we try to fashion in this book. It will require power and persuasion, but we find in our system work that there are many internal change agents, adults, and students together, who see education as the vehicle where equity, excellence, and well-being can be achieved synergistically. Our solution, as we will see, is our model of “new pedagogies for deep learning” (Fullan, Quinn, & McEachen, 2018).

We have said that nearly all individuals have tendencies to be selfish or cooperative, depending mainly on their circumstances. How they turn out depends on whether the *social conditions* favoring cooperation become established. Let's say this a different way: Whether individuals become self-centered and aggressive to others or self-fulfilling and positively committed to others depends on their upbringing, a term we use broadly to include family and society. We are at the point for reasons well covered in this chapter that humankind is flirting with disaster. We see the possibility of a radical breakthrough arising from the systemic forces that underpin the problems.

The radical change we have in mind won't occur because of some top-down transformational system strategy. But it may happen if the most powerful hitherto hidden systemic forces become more known and enabled to do their magic; and they in turn can be leveraged for continuous transformation of how the global system might work for the benefit of everyone, including the universe. After all, systemic factors have done harm for the past half a century. There is no reason why they could not be turned to our advantage.

Thus, we find that the latent positivity of evolution and "the win for all" potential of increased equity could be the foundations for salvation. This takes us to the policy domain, which in fact is the focus of the remainder of this book. Since 2000, the world of education has increasingly focused on policy solutions for system success. It's not working! In the Western world this shift to deliberate system change can be marked by the first OECD's PISA assessment results reported in 2001 comparing the results of 15-year-olds in literacy, math, and science every three years. Now in its seventh iteration (2019), the assessments involve the 35 OECD member countries and another 35 or so countries that have joined the PISA testing cycle. We are not about to carry out an internal analysis of the scores. Yes, the top performers include Singapore, Japan, Estonia, Finland, Canada, and South Korea. The PISA results are not "the end all and be all," but they provide a useful marker. The head of PISA at OECD, Andreas Schleicher, recently (2018) published a book, *World Class: How to Build a 21st-Century School System*. Schleicher states his main conclusion:

Over the past decade, there has been virtually no improvement in the learning outcomes of students in the Western world, even though expenditure on schooling rose by almost 20% during this period. (p. 13)

Maybe it was the wrong system policies at work that were the culprits. Our Finnish colleague, Sahlberg (2012), called the problem the spread of bad GERMs (Global Education Reform Movement). Ideas were spreading, but they were not good ones. For Sahlberg they included standardization, focus on core subjects, low-risk ways of reaching goals, corporate management models, and test-based accountability. Hargreaves and Shirley (2009) in *The Fourth Way* made a similar comprehensive critique of the limitations of GERM-like policies evident in what they called “The Third Way.”

One of us had written a similar analysis calling the problem “Wrong drivers for whole system reform” (Fullan, 2011). A driver is a policy and a wrong driver is a policy that doesn’t work. There were four: punitive accountability, individualism, technology, and ad hoc policies including multiple ever-changing initiatives. We had begun in Ontario in 2003 to focus on what we later called the “right drivers” (see Figure 1.1, Moving Away From the Wrong Drivers).

In the rest of this chapter we will show how these critiques have led us to a transition point in system reform that is still not resolved in 2020. Indeed, this book, which we affectionately call “the devil,” is intended to capture the potentially pivotal juncture where we now find ourselves in global system reform in education. To put it another way, current success in Ontario; California; and Victoria, Australia—the three cases we take up later—have been on the right track but have not yet broken through to attack and integrate equity, excellence, and well-being.

Figure 1.1 Moving Away From the Wrong Drivers

Wrong Drivers	Right Drivers
Accountability	Capacity building
Individual teacher and leadership quality	Collaborative work
Technology	Pedagogy
Fragmented strategies	Systemness

Source: Fullan, 2011

Let us trace the early stages of a possible policy shift from “wrong” to “right” drivers.

Fullan (2010) wrote a book called *All Systems Go* in the heady days of Ontario’s success that began in 2003. One of the charts contained a list of nine elements of successful reform. In fact, we (Fullan and Gallagher) both were among the architects of the reform in Ontario along with key others including the province’s premier, Dalton McGuinty (see Figure 1.2).

We revisit these elements in Chapter 5 when we consider Ontario as part of the macro picture. The nine elements in interactive development formed the basis of a provincewide strategy that involved 4,900 schools, 72 districts, 2 million students, and over 100,000 educators. And it was largely successful: For example, high school graduation rates for the 900 schools moved immediately from a base of 68% to 86% at a steady rate of almost 2% year after year. Other jurisdictions took a strong interest in the “Ontario story” and began to develop their versions, two of which we currently work in: the state of California in the United States, and the state of Victoria, Australia.

The Ontario strategy marked a milestone in large-scale system change. In 2010, it looked like it might represent a breakthrough. Fullan and Joanne Quinn (2016) worked toward this resolution in a book called *Coherence: The Right Drivers in Action*. Many people loved the 2011 “wrong driver” analysis, telling us that we nailed it, but they also said that we did not

Figure 1.2 Elements of Successful Reform

1. A small number of ambitious goals
2. A guiding coalition at the top
3. High standards and expectations
4. Collective capacity building with a focus on instruction
5. Individual capacity building linked to instruction
6. Mobilizing the data as a strategy for improvement
7. Intervention in a nonpunitive manner
8. Being vigilant about “distractors”
9. Being transparent, relentless, and increasingly challenging

Source: Fullan, 2010

go far enough in detailing the “right drivers” in action. Hence, we wrote *Coherence*, which captured the directional solution in four interactive quadrants (see Figure 1.3).

In the book *Coherence*, we adjusted the formulation so that the parallel comparisons were clear: Fragmented strategies became Focus; Individualism became Collaboration; Technology was driven by Pedagogy; and Punitive Accountability became Securing Accountability.

Fullan and Quinn made the case that the four new right drivers in interaction resulted in *coherence*. We concluded that coherence was the solution, which we defined as *the shared depth of understanding of the nature of the work*. The *Coherence* book was and still is enormously popular. In book study after book study, and workshop after workshop, people agreed that “coherence” was the answer. And we had in fact provided numerous examples in the book of coherence in action in named, specific cases. We also furnished *The Taking Action Guide to Building Coherence* that contained 33 protocols (Fullan, Quinn, & Adam, 2016). But then people attempting to use the ideas got stuck. People couldn’t achieve coherence by working directly

Figure 1.3 The Coherence Framework



Source: Fullan & Quinn, 2016

on coherence. We thought we had simplified a complex phenomenon; in fact, we called our solution simplicity. The moral of the story is that you can't get complete solutions from a book. You have to work with the ideas in practice, learning the details of success as they apply within the culture of your organizations. It is the interaction of good external ideas and the nuances of local culture that makes the difference.

Remember we are talking in this chapter about three big reasons why we think current conditions could—and it is a mighty big could—result in “system breakthrough” in 2020 and beyond. The first two concern favorable evolution and reduced inequity. The third factor consists of better policies, especially the shift from “wrong to right drivers.” More and more people, including politicians, are becoming convinced that the policy drivers that they have favored for the past two decades, including the focus on literacy, testing, narrow accountability, and the like, are indeed wrong—that is, they do not bring about system change. They are not only failing to get us anywhere but are actually propelling us backward.

Excuse an aside here about an intriguing aspect of the phenomenon of change. People find it easier and more compelling *to critique* a situation than *to resolve it*. Fullan (2015) wrote a whole book about this in which he made the distinction between “freedom from” vs. “freedom to” change. The former involves working hard against something you don't like; the latter happens when you get stymied when it comes to the solution, even after getting rid of what you did not like. This also explains a curious reality about task force reports at times of crisis or potential change. When a task force nails the *problem*, it is seen as a brilliant piece of work.

Put differently, it is given way more credibility, in fact often revered, than it deserves. Why? Because when you look at the situation closely, you find that the report is much better at identifying what is wrong than in providing solution-related ideas. It typically utterly fails to help get on a pathway to solving the problems themselves. A classic example is *A Nation at Risk* (National Commission on

More and more people, including politicians, are becoming convinced that the policy drivers they have favored for the past two decades, including the focus on literacy, testing, narrow accountability, and the like, are indeed wrong.

Excellence in Education, 1983), but we could name 30 more over the past three decades.

We are not being overly harsh here as much as we are talking about the nature of the beast. It is comparatively easier to criticize what already exists—we know it and can be specific—compared to coming up with solutions, which by definition are unknown and subject to the dynamics of future actions. And actually implementing those solutions when they are at best partially known presents a whole new level of challenge. Compounding the problem of system improvement has been the tendency to add scores of categorical programs and other ad hoc solutions. In fact, this phenomenon—the unknown solution, piecemeal programs, and failure to implement—is why we need systems thinking in action.

The promising news—our point in this chapter—is that more and more people at all levels are becoming convinced that current policies simply do not work and have not worked over the past two decades. We now at least have Leonard Cohen’s “that’s how the light gets in.” The crack in the status quo is becoming more obvious to more and more people.

The solution we favor and pursue throughout this book entails the mobilization of all three levels of the system (local, middle, and top)—independently and in concert—to focus simultaneously and systemically on equity, excellence, and well-being.

CONCLUSION

The three forces that we have examined in this chapter—the evidence of evolutionary tensions, the dramatic rise of inequity, and the palpable inadequacy of current policy—will result in some upheaval no matter what we do. The world is rapidly and increasingly becoming more troubled to the point that literacy, numeracy, high school graduation, and the like may be important foundational goals but are no longer nearly up to the challenges we face. Our students need these foundational goals; they also need much more. We have already seen that the majority—at least two-thirds—of students are bored, alienated, stressed, or all three. Present-day schooling, and this has been increasingly the case for at least two decades, is painfully unfit for the learning that is required for survival let alone “thrival.”

Further, the forces that are wracking society are making their way into school: worsening climate change, ambiguous and scary job market, limited social mobility, tribal-like conflict, deterioration of trust, and the erosion of social cohesion. Within schools there is a growing sense of ill-being, insecurity, futility with respect to the purpose of schooling, and vulnerability among the young. We need a very different school system and one that engages the world as part of a proactive solution. We are pursuing such a solution in partnership with schools in eight countries under the banner of *Deep Learning: Engage the World Change the World* (Fullan, Quinn, & McEachen, 2018; Quinn, McEachen, Fullan, Gardner, & Drummy, 2020). All of us should shift our policy and cultural action toward the equity/excellence/well-being triumvirate.

Artificial intelligence is the machine version of deep learning. We need a human solution, which is what our work strives to develop in partnership with school systems at all levels. The giant shift in the role of schools is not only to prepare students and schools for a troubled world, but to be part of a radically new solution from day one—a goal that we linked earlier to George Counts’s 1932 challenge: *Dare the school build a new social order!* The answer is, yes, it should dare, but the proposition is a hell of a lot more complicated some 90 years later.

We need to say as well that *no system in the world* has yet figured out the solution. Anxiety, stress, and ill-being are at all-time highs and continue to affect students at all SES levels. Problems and tensions mount. Even our best examples of seeming success are not all that convincing. The high-ranking Asian countries with their intense pressure on academic achievement seem to be losing ground. Finland probably has the right culture, but its leaders are not satisfied, and they are becoming increasingly challenged by urban and diversity issues. Moreover, the population is small, only 5.5 million, and as Fullan (2016) argued in one blog, people need to “Find your own Finland.” In any case, as a planet, we are losing ground and the loss is taking on scary, interdependent, unpredictable characteristics.

Our conclusion in this chapter is not just that we must act. Urgency has never been a sufficient trigger for collective action. Rather we have suggested that there are three powerful forces that represent propitious conditions for radical transformation. We will need additionally a powerful

catalyst in the form of a new approach to system reform—one that involves all three levels of the system—and gets at the interactive details within and across levels. And one that tackles head-on the dynamic power of synthesizing equity, excellence, and well-being.

In the meantime, humans, in less than two generations (about 50 years), for the first time in civilization, have been the cause of creating a potentially “uninhabitable earth” (Wallace-Wells, 2019). Now the question is whether we are we capable of reversing this deadly concoction. Fullan (2020a) calls this the battle of the century: catastrophe versus evolutionary nirvana. We need a new integrated set of forces focusing on fundamental change, as we outline in this book. The glue for this new synthesis to occur is system thinking, not leaving it only in the hands of those at the top, although it includes them, but advocating this approach all the way up and down and across the system. We are back to our turtles “all the way down.”

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