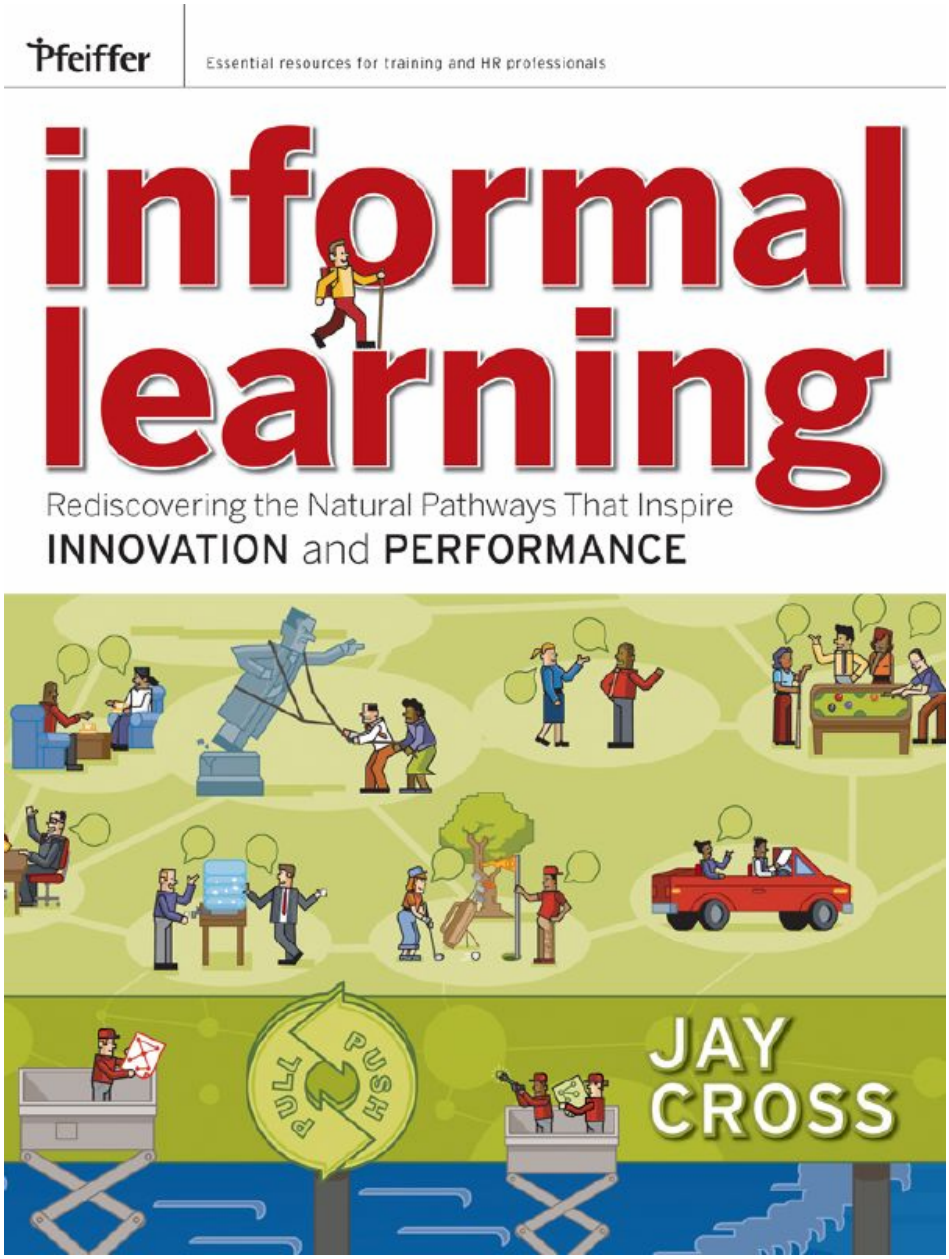

OUT OF TIME

I AM OUT OF TIME. You bought the beta edition of this book. Things change so fast that all books are dated by the time they are published. Check the book Web site for extensions and updates. Of course, the site is beta, too, but at least it is more recent. Nothing gets finished anymore. The world is moving too fast for closure. Our lives are in beta.

Everything is faster, more interconnected, and less predictable. Getting aligned with this new world is the road to profit and longevity for organizations, well-being and fulfillment for individuals. This book won't give you the answers, but it will set you on the right path.

Time is all we have.

BARNABY CONRAD

THE HYPERINFLATION OF TIME

When I was growing up in Hope, Arkansas, a ticket to the Saturday afternoon double feature cost fifteen cents. A Pepsi cost a nickel. Penny candy cost a penny. Motel 6 once charged six dollars a night. It's not that everything in the old days was dirt cheap. Rather, the value of money has changed.

The same thing is now happening to time. More happens in a minute today than in one of your great-grandmother's minutes. Not only is more and more activity packed into every minute, the rate of change itself is increasing. Measured by the atomic clock, the twenty-first century will contain a hundred years. Measured by how much will happen, in the twenty-first century, we will experience twenty thousand current years (Kurzweil, 2005).

A plot of the acceleration of time resembles a hockey stick. We have just left the blade and are shooting up the handle. We cannot keep driving into the future with the same old ox-cart; the wheels would fall off. The vehicle we ride into the future must be very responsive, for we are sure to encounter many surprises. There's no map to what's up ahead.

Time is Everything flows. That's life. Now everything flows faster. Survivors will. be those who are most responsive to change. Unlearning obsolete routines is the secret of long life. Anything that is rigid is probably a vestige of earlier, slower times.

TIME GUSHES FORWARD

When I was ten or eleven, Disney's nature movie Living Desert provided my first experience of time-lapse photography. A seedling sprouted, grew, bloomed, and

died in a couple of seconds on the screen. Withered green disks of cactus plumped up and grew little buds, and the buds miraculously turned into fat red prickly pears. Living things were always growing. I'd failed to notice that before because they changed too slowly for me to perceive. Stopping time has fascinated me ever since, be it Eadward Muybridge's photographs capturing a horse with all feet in the air or Harold Edgerton freezing a bullet in flight.

Read Stewart Brand's marvelous book How Buildings Learn (1994), and you realize that a fifteen-second animation of a century of New York's Park Avenue would show buildings going up and coming down again and again, an immense railroad yard sinking beneath the earth, and mansions being replaced with gleaming skyscrapers, the scene morphing from cabin to brownstone to a Mies van der Rohe glass box.

Even the most permanent things are temporary when you shift to the long term and convert eons to seconds. A stream trickling across flat land carves the Grand Canyon. The floors of seas rise to form mountains. If dinosaurs get half an hour on screen, we humans get only a few seconds. Three or four hundred years ago, a nanosecond in geological time, we adolescent humans convinced ourselves that we were the center of the universe, that we were in control, and that we could bend nature to our will. Descartes told us it was all in our heads. Newton explained how things moved (logically). Englishmen and Scots invented industry. Frederick Taylor told workers "You are not paid to think." Hierarchy flourished. Those days of certainty are over. We no longer control the universe (actually we never did). We are simply another thread in the fabric of life. A hundred years after Einstein, everything is beginning to feel relative. The watchmaker has left the stage. Uncertainty is the rule. We are all in this together.

NETWORK EFFECTS

Networks are growing faster than vines in the rain forest, reaching out, and encircling the earth. Denser connections yield faster throughput. The exponential growth of networks is the underlying reason that everything is speeding up.

Social networks, computer networks, communications networks, and any other network you can think up are constructed of nodes and connectors and nothing more. Each new node of a network increases the value of the over-

all network exponentially because the additional node connects to all the preexisting nodes. Connecting networks to other networks turbocharger their growth.

New linkages distribute information and power, breaking down organizational boundaries and fiefdoms. Networks subvert hierarchy. Perhaps it took longer than we expected, but people were right when they said the Net changes everything.

Forty years ago, Intel cofounder Gordon Moore noted that the number of transistors on a chip doubled every year. Later, the rate slowed to doubling every eighteen months, and the exponential growth of computing power per dollar became known as Moore's Law. Moore's Law is why the laptop computer you bought not long ago is now selling for half what you paid for it.

Research has found that Moore's Law applies to many areas besides computing. Examples are fields like DNA sequencing, gross domestic product, manufacturing output, e-commerce, educational expenditures, magnetic data storage, wireless data devices, Internet hosts, bandwidth, and miniaturization.

Inventor Ray Kurzweil (2005) plots what fifteen thinkers and reference works consider "the key events in biological and technological evolution from the Big Bang to the Internet" (p. 19). They're taking place at a quicker and quicker pace. The speed of evolution itself is picking up. "Before the middle of this century, the growth rates of our technology-which will be indistinguishable from ourselves-will be so steep as to appear essentially vertical .... The growth rates will be . . . so extreme that the changes they bring about will appear to rupture the fabric of human history" (p. 30).

ON A HUMAN SCALE

It's a safe bet that you don't have as much time as you used to. Things used to be simple. People had plenty of time. Suddenly everything is complex, life is out of control, nobody has time, and most workers hate their jobs. The world has changed, and we humans have not kept up.

We are being propelled into this now century with no plan, no control, no brakes. BILL JOY

Life is either a daring adventure or nothing.

HELEN KELLER

You don't have to do the math to feel what's going on. Compare your email to a couple of years ago. Are you in control of the situation? Does the incessant arrival of more and more stress you out? What if you receive twice as many e-mails and voice mails next year? Or four times as many the year after that?

People are so overwhelmed with incoming messages that they have little time to cover new ground. You say your company wants innovation? How can people innovate when they hardly have time to get their regular jobs done?

We all face a choice. The first option is to run faster and faster to keep up. A word of warning here: time management courses, self-improvement books, fancy calendars, personal digital assistants, spam filters, tickler files, discipline, and longer hours are not going to get you out of this one. At best they give you a temporary advantage. The second option is to get off the treadmill, admit that the world is not under your control, and embrace the chaos of change. That's what the remainder of this book is about.

In Figure 1.1, my son, three years old in the photograph, is not reading the technology catalogue in his hands. (It's upside down.) He is merely going through the motions. You may be in a similar state. If you are looking for an immediate quick fix to deep-seated organizational and personal issues without study and reflection, don't waste any more time reading here. Come to Internet Time Wiki for an overview. Then decide if you want to dig deeper.

FIGURE 1.1. Young Austin Cross, Going Through the Motions

To get the most out of this book, you must think outside of your comfort zone. You may find yourself nodding in agreement with many commonsense statements, only to reflect that adopting this approach wholesale will require a reversal of the corporate culture you are accustomed to. As Chairman Mao said, "You want to make an omelet, you break a few eggs."

KEEPING UP

When the job environment changed only slowly, corporate learning involved acquiring the skills and know-how to do the job. Now corporate learning means keeping up with the new things you need to know to do the job, maybe even daily. The traditional barriers separating training, development, knowledge management, performance support, informal learning, mentoring, and knowing the latest news have become obstacles to performance. They are all one thing and for one purpose: performance.

Learning used to focus on what was in an individual's head. The individual took the test, got the degree, or earned the certificate. The new learning focuses on what it takes to do the job right. The workplace is an open-book exam. What worker doesn't have a cell phone and an Internet connection? Using one's lifelines to get help from colleagues and the Internet to access the world's information is encouraged. Besides, it's probably the team that must perform, not a single individual.

The new teaming means having great connections: sources that know, advice that helps, alerts to what's important, and ready answers to questions. Perhaps it's time to promote the chief teaming officer to chief performance officer. Beyond running an in-house schoolhouse, the chief performance officer's concerns include the corporate news function, the architecture of the work space, the quality of communications, intranet structure, and organization development.

THE FUTURE OF WORK

At the Accelerating Change 2005 conference, MIT professor Tom Malone said, "New technologies are making it possible

for the first time in human history to have the economic benefits of very large organizations and, at the same time, to have the human benefits of very small organizations, things like freedom, flexibility, motivation and creativity."

In The Future of Work: How the New Order of Business Will Shape Your Organization, Your Management Style and Your Life, Malone (2004) observes that all networks are alike in that they form and grow in similar stages. At first, nodes are unconnected. When communication becomes feasible, they evolve into a hub-and-spoke arrangement around a single source of power. As communication becomes cheaper still, all nodes begin to take on power. For example, early humans organized in bands of thirty to forty people (larger groups would have over hunted the local area). When spoken language and writing came on the scene, kingdoms formed. And when printing and mass communication appeared, democracies replaced them.

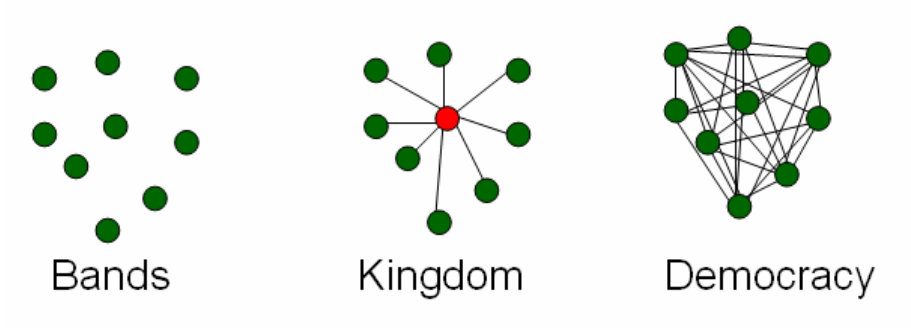

FIGURE 1.2. Human Organization over the Past 10,000 Years

Business went through a similar evolution, albeit in accelerated fashion. When I was a boy, if you needed a prescription filled, you walked to Cox's Drugstore and Mr. Cox filled your prescription. Then Rexall, Walgreen's, and Eckerd's took over the independents. When I buy drugs over the Internet now, I don't know who I'm dealing with any more.

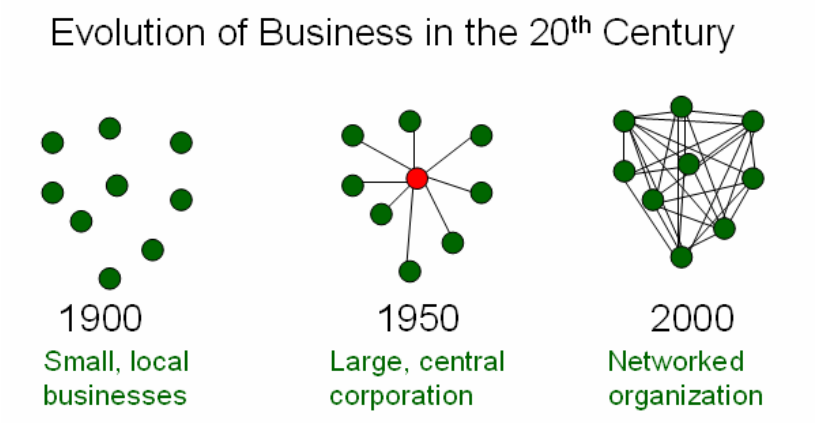

FIGURE 1.3. Evolution of Business in the Twentieth Century

I remember living through this pattern with computers, as shown in Figure 1.4. I wrote my first computer program in FORTRAN IV for an IBM 7094 Mod II at the Princeton Computing Center in 1966. That $11 million machine had 144 KB of memory and a cycle time of Y4MIP My IBM X40 ThinkPad cost one-five thousandth as much yet runs five thousand times faster. Price-to-performance has doubled twenty-four times in the last thirty-six years.

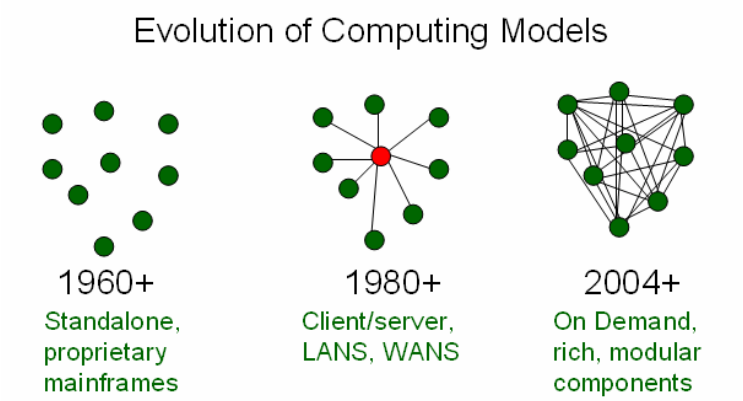

FIGURE 1.4. Evolution of Connectivity of Computers

The 7094 stood alone on a raised floor in a glass box, totally isolated. Twenty years later, top-down client-server networks became the rule. And now the Internet is the model of a completely distributed network. Training is no exception to the rules of network evolution. In past times, training was individualized; people learned at grandma's knee or in the studio of a master craftsman. With printing came instructor-centric schools. As we enter an age of informal and workflow learning, authority is less centralized than ever

before (Figure 1.5.) "Learning is best understood as an interaction among practitioners, rather than a process in which a producer provides knowledge to a consumer," says Etienne Wenger, a social researcher and champion of communities of practice.

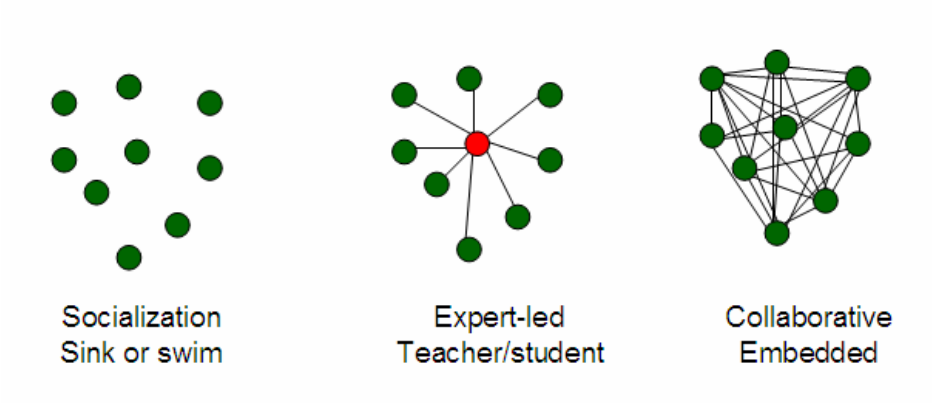

FIGURE 1.5. Evolution of Learning

We've outgrown the definition of learning as the activity of an individual and moved back to an apprenticeship model, though at a higher level. We learn in context, with others, as we live and work. Recognizing this fact is the first step to crafting an effective learning strategy.

We humans exist in networks. We are part of social networks. Our heads contain neural networks. Learning consists of making and maintaining better connections to our networks, be they social, operational, commercial, or entertainment. Rich teaming will always be more than a matter of bits flowing back and forth, but the metaphor of learning as networking gives us a way to describe how learning can be embedded in work itself.

Walter J. Freeman, speaking on the poetry of brains at the August 2005 meeting of the Future Salon, said we focus too much on the individual brain instead of on the collaboration of groups of brains. Working with one another is the essence of Doug Engelbart's goal of 1951: "As much as possible, to boost mankind's collective capability for coping with complex, urgent problems."

We're beginning to consider a new concept of worker. Think of a worker as the sum of employee and support systems, combining the strengths of each into a whole greater than the sum of the parts. The worker's dashboard appears on a phone, personal digital assistant, monitor, or head-mounted

display. Bear in mind, however, that this is a two-way dashboard. It empowers the worker to give as well as receive, to collaborate with other people and to be contacted by others.

Business Week (12/19/05) calls a business where power is distributed an open-source workplace and notes that "the CEO is no longer omnipotent and the truly effective ones don't want to be. The best ideas may evolve from the bottom up and sometimes from the outside in. New technologies such as private workplace wilds and blogs are disrupting command-and-control corporate structures. Any employee can create, edit, refine, comment on, or fix an idea. What some used to dismiss as a recipe for chaos is more likely a path to greater productivity."

THE WORK OF THE FUTURE

The work of the future is knowledge work. You're undoubtedly a knowledge worker yourself. See if you don't agree, as I do, with Tom Davenport's statement that knowledge workers "don't like to be told what to do, . . . work best when working with other people in social networks, and are better led by example than by explicit management" (2005, p. 14).

I fit Davenport's description of knowledge worker well. I want to set my own schedule and choose where I work. I think for myself. No one will ever reduce what I do to a flowchart. I like to work on things I help create. I'm always building for the long term while getting today's work out the door. And if I don't feel good about doing something, I probably won't do it well. I work for me first and my organization second.

"What the mind can conceive, man can achieve," preached positive thinking evangelist Napoleon Hill (1937), and while he was over the top, it's true that we live up (or down) to our expectations. Tell someone it will take her a week to do a report, and she will find a way to stretch the project to a week, even if she wound otherwise have completed it in a couple of hours. Tell a group of students they are in the "slow group," and they'll perform at the slow-group level.

Slow and fast. We're accustomed to measuring the speed of production in terms of output per hour. How many sandwiches can the cook assemble? How many cakes can Lucy and Ethel put in boxes? How many phone calls can the

telemarketer complete? How long should it take a third grader to learn to multiply?

This industrial mind-set has seeped into all aspects of work. If the average input operator keys in 100,000 digits per hour, we'd expect the range of performance to be in the 80,000 to 120,000 range. The slowest operator is not going to log, say, 10 strokes per hour, and the fastest is not going to enter 250,000.

Knowledge work doesn't have these physical limitations. The best worker may be hundreds of times more productive than her less effective peer. Following a speed reading course, the average reader goes from reading 90 words a minute to 150; high performers go from 350 to 2,900 words per minute. These people justify special handling.

Innovative knowledge work is a different beast. A knowledge worker may go months without having a great idea, but her one great idea more than makes up for the difference in frequency.

"The butterfly effect" is a popular metaphor for the potential asymmetry of results that occur from the interaction of complex systems. If a butterfly flaps its wings in Brazil, might it cause a tornado in Texas? The answer is, "Probably not, but it could happen."

The chief technical officer at Google believes a superlative engineer can be 250 times more productive than an average performer. Making a great performer better gives more bang for the buck than moving an average performer up a notch. It's a human butterfly effect.

Are you uncomfortable in your job? Seventy to eighty percent of Americans say they don't like their work. People enjoy change, but they don't like to be changed. We're struggling because we're attempting to serve two masters. Workers are straddling the gulf between business-as-usual and a new networked world.

Twenty years ago I had two secretaries. They screened my calls, prepared my correspondence, scheduled my appointments, and made my travel arrangements. Now I write my own letters, keep my own calendar, and schedule my own travel. No one screens my calls, unless you count cutting off the phone and letting the answering machine take

messages. My inputs used to be phone calls, snail mail, and interoffice memos. Now I also get e-mail, voice mail, Skype and GoogleTalk calls, instant messages, Web feeds, list-servs, and calls on four telephones.

This is why a third of all male knowledge workers clock more than fifty hours a week. Forty-three percent get less than seven hours sleep a night. Sixty percent rush through meals. Twenty-five percent of executives report that their communications are unmanageable (Business Week, Oct. 3, 2005). Verna Allee highlights the differences between the old world or work and the new.

Traditional Thinking, New Thinking

Assumption	**Traditional Thinking**	**New Thinking**
Scientific Foundation	Newtonian physics	Quantum physics
We Understand by	Dissecting into parts	Seeing in terms of the whole
Information is	Ultimately knowable	Infinite and unbounded
Growth is	Linear, managed	Organic, chaotic
Managing Means	Control, predictability	Insight and participation
Workers Are	Specialized, segments	Multi-faceted, always learning
Motivation is from	External forces & influences	Intrinsic
Knowledge is	Individual	Collective
Organization is	By design	Emergent
Life Thrives On	Competition	Cooperation
Change is	Something to worry about	All there is

Source: Allee (1997). Reprinted with permission.

Shifting from hierarchies to network organizations has another ramification: there is no boss. This is a case of, "Be careful what you wish for." Workers aren't accustomed to having no superior to get instructions from, to fight for their cause, to listen to their complaints, or to ask for guidance. Instead of playing well-defined roles, workers become nodes that must respond to demands in real time.

SLOW DOWN

There is more to live than increasing its speed.

GANDHI

The author of In Praise of Slowness (2004), Carl Honore, read a newspaper item about One-Minute Bedtime Stories, a time-saver for harried parents. At first he was delighted with this swell idea. On reflection, he realized how screwy it was to cut corners on quality time with one's children. Who's calling the shots on this one? Carl digs into the subject, looking at the Slow Food movement, the Slow City movement, hours-long Tantric sex, the frenzied pace of work, and the diminution of leisure.

Each of us sets our own metronome. You can take time to smell the roses or you can zip right past them. This ties in to Bodil Jonsson's observation in Unwinding the Clock (2001), that "if I can fool myself into thinking that I don't have enough time, couldn't I just as well fool myself into thinking that I have plenty of time? So I decided to have plenty of time" (p. 48). So I decided to slow down for a spell.

When automobile drivers drive recklessly, they have accidents. When people rev out too high in their daily lives, they tear the fabric of everything that makes living worthwhile: family, relationships, values, community.

Fast and slow are attitudes, not absolute rates. "Fast is busy, controlling, aggressive, hurried, analytical, stressed, superficial, impatient, active, quantity-over-quality. Slow is the opposite: calm, careful, receptive, still, intuitive, unhurried, patient, reflective, quality-over-quantity. It is about making real and meaningful connections-with people, culture, work, food, everything. The paradox is that Slow does not always mean slow" (Honore, 2004). Carl is about as subtle as a neo-conservative Amway sales rep, but he does make a strong case for checking your internal speedometer periodically.

If quality performance and a quality life are your goals, don't give in to someone else's ridiculous pace. Learning requires time to sink in. Don't let scrambling to meet the clock crowd out time for reflection.

Most men pursue pleasure with such breathless haste that they hurry past it.

SOREN KIERKEGAARD

UNLEARNING REQUIRED

Your brain is a trickster. It has to be. If your brain stopped filtering out 99.99 percent of the input bombarding your senses, your head would explode from sensory overload.

Every second, 14 million bits of sensory information slam into our cranial firewalls. The bandwidth of human consciousness is about 18 bits per second. We don't see things with just our eyes; we hallucinate images from low-resolution clues. It's like one of those pictures that's made up of large squares. When you're close, it's just a bunch of squares. Back up, and the picture becomes clear. Look at a painting by Monet up close and then twenty feet back to experience the same effect. Your brain connects the dots to show you something that's not there.

People who put on a pair of spectacles whose lenses turn everything upside down become totally disoriented, but after a while, their vision adjusts, and everything appears to be normal again-until they remove the glasses and again see an upside-down world. Lenses that show the left eye what the right normally sees, and vice versa, give a jarringly odd cubist vision, but the brain soon adapts to this too and flips back to normal when the glasses are removed.

The human brain is a trickster. Keep this in mind as we delve into counterintuitive material. Taking it to heart will require unlearning some long held beliefs. Your mind will fight you on this.

Neuroscientists reported recently that fMRI tests confirmed what social psychologist Solomon Asch had reported fifty years ago (Blakeslee, 2005). Here's Asch's experiment. Eight people sit in a circle. They are handed a card with lines of varying length (Figure 1.6). The first person says the lines are the same length, as does the second, the third, and so

on through to number seven. (The first seven were in on the ruse.) The eighth person? One in four of them answered incorrectly 50 percent of the time. fMRI studies showed that people sometimes actually saw what other people described rather than what was on the cards.

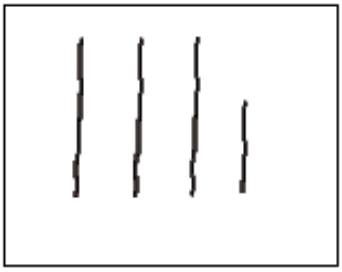

FIGURE 1.6. All the Same Length? Some People Thought So

Informal learning, which we dig into in the next chapter, is nothing new. It is a return to the natural way people team: through conversations with one another, trying things out, and listening to stories. Learning is how people adapt to changing conditions, and things are changing faster than ever before.

By the way, the lines ahead are not all the same length.