

• Recently, there has been an explosion in research on time. This book provides a much needed summary of that work. *The Human Organization of Time* will prove a valuable resource to anyone interested in temporal research in organizations.

Leslie PERLOW, *Harvard Business School.*

• Finally a masterful book about time. Bluedorn's work is comprehensive and cutting edge, laying out the interplay of time with fundamental aspects of organizations and individuals. It should be on every serious organizational scholar's bookshelf.

Kathleen Elsenhardt, *Department of Management Science and Engineering, Stanford University*
Coauthor of *Competing on the Edge: Strategy as Structured Chaos*

• This is a wonderful and important book, full of fascinating information, insights, conjectures, and constructs. Bluedorn forges a compelling case for the importance of time, and of our roles as current stewards of the temporal commons. From the Big Bang to the Bolshevik revolution to the puzzles of Deep Time, from the social construction of zero to the theory of relativity, from the gates of Trenton State Prison to the gates of Dante's Inferno, *The Human Organization of Time* weaves a compelling fabric of temporal threads. Bluedorn has found power and poetry in time.

Ramón ALDAG, *Department of Management and Human Resources, University of Wisconsin*

• *The Human Organization of Time* is a broad look at how we truly think about time. It unifies the many human patterns of time-scale concepts and gives depth and perspective to a complex field. Thorough and insightful, it will become the standard work.

Gregory Benford, *Department of Physics, University of California, Irvine*
Author of *Deep Time*

• *The Human Organization of Time* stands to be a definitive source for those interested in temporality and time. Bluedorn's knowledge of diverse literatures and his attention both to historical perspectives as well as contemporary theorizing and research is noteworthy. Issues of time and temporality pervade the human experience; Bluedorn helps us to appreciate temporality as a social construction with very real consequences for organizations and their members.

Jennifer M. George, *Jesse H. Jones Graduate School of Management, Rice University*

• A remarkable and original contribution to our understanding of the social construction of time and its effects on people and organizations. Playing off against a backdrop of work preoccupied with enduring and stable features of social life, Bluedorn underscores the importance of temporal features—pace, tempo, rhythm, entrainment, and historical turning points.

Alan Meyer, *Lundquist College of Business, University of Oregon*

The Human Organization of Time

TEMPORAL REALITIES AND EXPERIENCE

Allen C. Bluedorn

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To those who have brought such exquisite meaning to my times,
may their times be the best of times always:

To my wife, Betty;

To my sons, John and Nick;

To my brother, Ralph;

To my mother, Evelyn;

To my father, Rudolph, 1905-1988.

favorable attitudes toward engaging in multiple tasks simultaneously. (Joseph Kasof, personal communication, 2000)

Although untested empirically, the propositions suggested in Kasof's insights may, if supported, reveal at least some of the major psychological bases of polychronicity and help account for individual polychronicity variation within cultures.

Clearly other important questions about polychronicity can be framed, but *m* traitlike, scalability, and relationship with breadth of attention to be answered before any claims can be made that we truly understand 3 fundamental of behavior patterns. And certainly other questions dily to mind. For example, until now the term *multitasking* has in this chapter—and for good reason. That reason is the multi- >t combines both speed and activity-pattern dimensions rather zusing on activity patterns (i.e., polychronicity). As such it is only

partially synchronous with polychronicity and will be dealt with in Chapter 4, where speed is a principal focus.

So perhaps it is fairest to conclude by describing the status of our knowledge of polychronicity as Winston Churchill once did other matters: "Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning" (Churchill 1943, p. 266).

Seldom Early, Never Late

Time goes, you say? Ah no!
Alas, Time stays, we go.

—Austin Dobson, *The Paradox of Time*

How much is being on time worth? How much value do some societies place on punctuality, on the temporal precision of their machines as well as their people? Nearly three hundred years ago, in 1714, the British Parliament provided a precise answer to this question. Parliament set its value at twenty thousand pounds, which is equivalent to over 5 million contemporary U.S. dollars (Landes 1983, p. 112). This fortune was to be paid to whoever the "Constituted Commissioners for the Discovery of the Longitude at Sea" determined had been able to "Discover a proper Method for Finding the said Longitude," if the Commissioners declared the method "Practicable" (Act of Queen Anne, 12, cap. 15, as reproduced in Sobel and Andrewes 1998, p. 65).¹ The promise of this reward led to the solution, a punctual clock known as the "marine chronometer," which within a narrow range was never early, never late. And therein lay the solution to the longitude problem; for if you have a sufficiently punctual clock and set its time to that of a place whose longitude you know, you have the basis for later determining your ship's longitude accurately throughout the voyage.

The process works like this. There are 360 degrees of longitude, and the earth rotates on its axis once in twenty-four hours. Thus in one hour the earth rotates 15 degrees of longitude, which results from dividing 360 degrees by

twenty-four hours (see Brown 1949, p. 210; Sobel and Andrewes 199B, p. 7). Because of this relationship between longitude and time, in 1530 Flemish astronomer Gemma Frisius proposed the idea of using a portable timekeeper to identify a ship's longitude (Andrewes 1994b, p. 346). The method requires the time at a place of known longitude (e.g., Greenwich, England) to be kept on a clock aboard the ship, and for this clock to keep this time accurately throughout the ship's voyage. This is so the time at the reference location (e.g., Greenwich) will be known at any moment during the voyage. To determine the ship's longitude, the local time is determined and compared with the time at the reference location. Because of the relationship between time and longitude (15 degrees per hour), the difference between the local time and the accurate time of the reference longitude location converts easily to the ship's longitude at its present location (Andrewes 1994b, p. 346). So if Greenwich was the location of known longitude, and the marine chronometer said it was 2:00 p.m. in Greenwich when the local time was *noon*, there would be a two-hour difference in time, indicating a 30-degree difference in longitude (15 degrees per hour multiplied by two hours equals 30 degrees), so the ship would be at a longitude of 30 degrees west of Greenwich.² (The north-south position, latitude, can be determined by direct observations of the sun, a somewhat simpler problem to solve.)

Of course, Frisius's method will give the longitude with the desired accuracy only if the on-board clock providing the time at the reference location can do so with sufficient precision. And such a clock or watch would not be made for another two centuries after Frisius made his proposal, at least not one that could function accurately under the challenging conditions of sea travel (i.e., the constantly pitching ship, widely fluctuating temperatures, etc.).

But how accurate—how punctual—did such a clock need to be? To win the full twenty-thousand-pound prize, the longitude had to be determined accurately to within one-half of a degree, which is about thirty nautical miles (Andrewes 1994b, p. 346). This amounts to a margin of error (gain or loss) of no more than three seconds each twenty-four hours (Sobel and Andrewes 1998, p. 72). With 86,400 seconds in twenty-four hours, this meant the clock had to average an accuracy level of at least 99.9965 percent every day during a six-week voyage from England to the West Indies—the test specified in the Longitude Act of 1714. But why was such accuracy needed? The answer lies in the catastrophes that could befall ships whose captains did not know where they were with sufficient precision.

By being partially lost all of the time prior to the solution to the longitude problem, sea voyages lasted longer than necessary, which increased the likelihood of voyagers contracting an especially nasty disease, scurvy. Given that scurvy was caused by a lack of vitamin C, the longer the voyage, the greater the chances of contracting it, because during this era food sources that provided vitamin C were not part of the seafarer's diet (Sobel and Andrewes 1998, p. 19). But as appalling a fate as scurvy was to mariners, the more dramatic and terrifying threat was shipwreck, a catastrophe often caused by not knowing a ship's location or being mistaken about it. For example, Rupert Gould (1960, pp. 2-3) described several such results of faulty navigation. One of the most infamous is the sinking of four ships in the fleet of Admiral Sir Cloudisley Shovel, including the admiral's ship. The fleet was returning to England from Gibraltar in October 1707 when in bad weather it crashed into the Scilly Islands off the coast of Cornwall in southwest England. Four ships went down, resulting in the deaths of 1,647 sailors, including Sir Cloudisley (Sobel and Andrewes 1998, pp. 15-17).³ This tragedy was one in a series of such events that led to the Longitude Act of 1714, which offered the twenty-thousand-pound prize for a practical solution to the longitude problem. That it took nearly seven years for the British Parliament to respond officially may reflect the pace of life in the early eighteenth century, a pace of life that differs radically from that experienced by most readers in industrialized nations in the late twentieth and early twenty-first centuries. (The pace, or speed, of life will be discussed later in this chapter.)

An ironic temporal asymmetry surrounds the rest of this story. Although the punctuality of the marine chronometers was at the heart of concern in this entire matter, it being required, as noted, to be 99.9965 percent accurate, the Board of Longitude was not nearly as concerned with comparable punctuality in awarding the prize for the longitude problem's solution. The Board of Longitude was the body of experts—astronomers, mathematicians, navy officers—and government officials selected to judge solutions for "the discovery of the longitude," a phrase that came to mean something of "practical impossibility" (Gould 1960, pp. 16-17). And after more than half a century of effort the celebrated horological wizard (i.e., virtuoso clockmaker) John Harrison produced "No. 4" (a.k.a. "H-4" and "H.4"), a kind of giant pocket watch 5.2 inches in diameter (see Barnett 1998, p. 112; Gould 1960, pp. 53-54; Sobel and Andrewes 1998, pp. 129-31), which won the prize. When tested on a voyage from Ports-

mouth, England, to Bridgetown, Barbados, in the West Indies during the spring and summer of 1764, H-4 proved to be even more accurate than the prize required, as it allowed the calculation of the longitude to within ten miles (Sobel and Andrewes 1998, pp. 148-52). This meant the watch had been accurate to within about one second per day, or about 99.9988 percent accurate.

But after the success of this test, "the Board of Longitude allowed months to pass without saying a word" (Sobel and Andrewes 1998, pp. 152), perhaps anticipating contemporary bureaucratic hubris. Indeed, not until October 28, 1765, did John Harrison receive a certificate from the Board of Longitude authorizing him to receive *a portion* of the prize, seventy-five hundred pounds plus twenty-five hundred he had received from the board earlier (Gould 1960, p. 62), which one could argue was over a year late. Compared to the three seconds per day margin of error allowed Harrison, the Board of Longitude was permitted an absolute margin of error over *10 million times greater*. Seven years later, in 1772, and only after obtaining the support of King George III, Harrison received an additional £8,750 when Parliament passed a special money bill for this purpose (Gould 1960, pp. 66-67). This sum combines with other amounts given to Harrison over the years to constitute the remaining portion of the full twenty-thousand-pound prize, the delay in awarding this portion of the prize constituting an expansion of the absolute margin of error to something over *70 million times greater* than Harrison's watch was allowed. This example illustrates with quantitative fungible time precision the principle that the more powerful are allowed greater discretion to be late and keep others waiting (i.e., margins of error) than the less powerful (see Levine 1997, pp. 109-14), and as such, of the more general principle that time and the control of it are important political matters.

The politics of punctuality will be one of the matters discussed in the following section on punctuality, and that section will be followed by a discussion of the closely related phenomenon of speed in human life. As will be seen, speed is a matter closely related to punctuality, so the relationships between speed and punctuality will form part of that discussion.

PUNCTUALITY

As with so many temporal matters, what it means to be punctual, to be "on time," has varied widely throughout history and across cultures. It even varies

within organizations, for as Deborah Ancona and Chee-Leong Chong noted, if a product cycle lasts eight years, being three months late is being on time; but in a nine-month product cycle, three months late is late indeed (1999, p. 44). This variation is a reminder that punctuality is socially defined, hence a human construction that produces a wide range of variation across both time and space in the definition of what it means to be "on time." And when it comes to punctuality, that variation has had a direction over the last two or three millennia, a direction toward greater precision and more demanding targets. Despite wide-ranging contemporary variation, this general trend becomes evident by examining observations of earlier eras and lifestyles.

For example, punctuality was very different in the Rome of two thousand years ago. The Romans used sundials and water clocks to reckon the hours, but the imprecision of these mechanisms, along with the constantly changing temporal hours (see Chapter 1), made it difficult to measure and determine the hour precisely. This led Daniel Boorstin to conclude, "Since no one in Rome could know the exact hour, promptness was an uncertain, and uncelebrated, virtue" (1983, p. 31). Uncertain and uncelebrated it may have been, but that would all change with the invention of the mechanical clock (Landes 1983, p. 7; Levine 1997, p. 60). For before that event, in the late thirteenth century (see Chapter 1), the inability to reckon the hours precisely during the day or night vitiated attempts to coordinate activities, except through the use of relatively unambiguous temporal markers such as dawn, noon, and dusk, albeit noon in the hands of nonspecialists was itself problematic (Levine 1997, pp. 60-61). Robert Levine, a scholar whose work plays a prominent role in this chapter, described the era before mechanical clocks well when it came to punctuality: "Before the invention of the first mechanical clocks, the idea of coordinating people's activities was nearly impossible. Any appointments that had to be made usually took place at dawn. It is no coincidence that, historically, so many important events occurred at sunrise—duels, battles, meetings" (1997, p. 60).

Thus, with the exception of a few *relatively* unambiguous moments such as dawn, noon, and dusk, twenty-first-century-style appointments—"Let's meet for a cup of coffee at 10:15"—were literally inconceivable because times with that precision were unmeasurable in everyday life. But that would change radically after the invention and rapid diffusion of mechanical clocks in Europe during the late thirteenth and early fourteenth centuries.

To illustrate what was coming, E. E. Evans-Pritchard's famous ethnogra-

phy of the Nuer as they lived in the first part of the twentieth century provides an important description of time and punctuality in an agricultural/pastoral society, a society based on domesticated plants and animals, a society without a technology for reckoning the hours.

The Nuer have no expression equivalent to "time" in our language [English], and they cannot, therefore, as we can, speak of time as though it were something actual, which passes, can be wasted, can be saved, and so forth. I do not think that they ever experience the same feeling of fighting against time or of having to co-ordinate activities with an abstract passage of time, because their points of reference are mainly the activities themselves, which are generally of a leisurely character. Events follow a logical order, but they are not controlled by an abstract system, there being no autonomous points of reference to which activities have to conform with precision. Nuer are fortunate. (Evans-Pritchard 1940, p. 103)

In terms of the continuum presented in Chapter 2, Nuer times were extremely epochal. Moreover, the references to being "controlled by an abstract system" and to "autonomous points of reference to which activities have to conform with precision" obviously point to comparisons drawn with the system of time reckoning and temporal values existing in the West during the twentieth century. This set of values had been anticipated nearly fifteen hundred years before by Christianity's development of monastic life during the first millennium, a life that emphasized reciting prayers at set hours known as the canonical hours (Landes 1983, pp. 58-66). Hand in hand with this development, the monastic orders also emphasized and enforced a regimen of performing each prayer precisely at its prescribed time. David Landes has suggested that the emphasis on punctuality surrounding these prayers was due to a desire to avoid giving offense by missing a prayer at its appointed hour or by being late and having to shorten or rush through the prayer. More speculatively, he suggested that "simultaneity was thought to enhance the potency of prayer" (1983, pp. 62-63).⁴

Prayers prescribed at regular times were not unique to Christianity. Such practices exist in both Judaism and Islam, for example, but the difference lies in the precision attached to the times prescribed for the prayers. In Judaism and Islam "the times of prayer are bands rather than points" and as such, timepieces were not required to identify the times for the prayers (Landes 1983, p. 59). Thus Christianity's monastic practices developed a concern with time,

its measurement, and with punctuality well over a thousand years before manufacturing developed in the growing European towns and cities of the late Middle Ages, and certainly before the industrial revolution. This concern provided a cultural foundation for the increased emphasis on punctuality that would accompany the invention of the mechanical clock, a device that gave impetus to increasingly precise demands for being on time. And not being innate in the human condition, these demands required instruction to develop an increasingly precise and strict temporal discipline.

Learning to Be On Time

Before the new temporal discipline could become part of the tacit knowledge passed on by role modeling and subtle cues, it had to be taught explicitly—a task that took centuries. Yet even the ancient sundial provided lessons in temporal discipline long before the escapement transformed time reckoning, a point lamented by those who felt subject to its dominion as revealed in the following lines from a play written twenty-two hundred years ago:

May the Gods confound that man who first disclosed the hours, and who first, in fact, erected a sun-dial here; who, for wretched me, minced the day up into pieces. For when I was a boy, this stomach was the sun-dial, *one* much better and truer than all of these; when that used to warn me to eat, except when there was nothing *to eat*. Now, even when there is something *to eat*, it's not eaten, unless the sun chooses; and to such a degree now, in fact, is the city filled with sun-dials, *that* the greater part of the people are creeping along the streets shrunk up with famine. [Plautus's emphases] (Plautus 1902, pp. 517-18)⁵

Falhble though the sundial may have been, the increased precision and temporal discipline wrought by the concept of hours and the technology of the sundial to measure them was obviously seen as a mixed blessing by this playwright, if a blessing at all (e.g., the reference to the sundial determining when to eat, culminating in the people "creeping along the streets shrunk up with famine"). As later events would demonstrate, it seems that each major advance in technology's ability to measure time precisely was attended concomitantly by the resentment and resistance of many, and especially by those upon whom the new time discipline was being imposed. Reasons for such resistance are manifold, including the possibility of a general human tendency to resist fundamental change, a tendency described memorably by James Baldwin: "Most of us are about as eager to be changed as we were to be born, and

go though our changes in a similar state of shock" (1985, p. 643). And "shock" certainly describes the speaker's reaction to hours and sundials in the lines from the Roman play.

But beyond whatever general resistance people exhibit toward change, there were also sound political and economic reasons to resist the change toward more precise standards of punctuality and time discipline. For example, in 1335 King Philip VI of France authorized the city government of Amiens to use a bell to signal when people were to eat and when they were to begin and finish working (Crosby 1997, p. 86). This put the control of time, hence control of much of life, into the hands of other human beings rather than the natural markers of dawn, noon, and dusk. Not that dawn did not sometimes come too soon or dusk not soon enough, but with the timing of life now coming under the control of other people rather than nature, both the possibility and the reality of manipulation in the rhythms of time signals for personal benefit became objects of dispute. Public clocks, especially those with dials, made the verification of time a continuous possibility for all of the population (Landes 1983, p. 75), thereby reducing the possibility of abuse. But governments are never completely neutral, and who would say, in fourteenth-century Amiens for example, what was the right time to begin work? One doubts that the workforce was consulted extensively about this matter before a decision was made; one doubts anyone consulted the workforce at all.

Such matters are the subject of what may credibly be described as the most famous scholarly article ever written about time: E. P. Thompson's "Time, Work-Discipline, and Industrial Capitalism" (1967; see Glennie and Thrift 1996 for a discussion of this article's influence). Focusing on England during the seventeenth, eighteenth, and nineteenth centuries, Thompson chronicled the deliberate efforts made to instill in the entire population, but especially in the workforce, a time discipline based on obedience to the clock and to the appointments made at times specified on it (e.g., the time to begin work). And illustrating the premise that control of time reckoning was anything but a politically neutral issue, Thompson quoted records left by two nineteenth-century workmen, both of whom were employed in factories of the day and both of whom testified that workers were not allowed to have their own clocks or watches on company grounds.⁶ Because this prohibition contrasts so strikingly with contemporary practices where watches are ubiquitous, one of the statements will be repeated here:

In reality there were no regular hours: masters and managers did with us as they liked. The clocks at the factories were often put forward in the morning and back at night, and instead of being instruments for the measurement of time, they were used as cloaks for cheater and oppression. Though this was known amongst the hands, all were afraid to speak, and a workman then was afraid to carry a watch, as it was no uncommon event to dismiss any one who presumed to know too much about the science of horology [clock and watch making], (quoted in Thompson 1967, p. 86)

Although the contemporary reader will find the prohibition on watches novel and likely disconcertingly oppressive, a contemporary parallel would be the practice in many organizations of keeping salaries secret and attempting to reinforce the secrecy with norms that proscribe telling one's salary to others in the organization, norms that define such telling as "unethical." In both cases an obvious reason for the information blackout is the cover it provides for "cheater and oppression," something that Thompson documented well in the case of time and watches.

But cheating workers by manipulated time reckoning would not seem to be the primary motivation for managements' concern about time discipline in the workplace. That concern stems from the organization of work itself: "Attention to time in labour depends in large degree upon the need for the synchronization of labour" (Thompson 1967, p. 70). And the need for such synchronization became especially salient when employees were brought together daily in factories and other enterprises. This need for synchronization, hence for time discipline or punctuality, eventually produced a new set of values and attitudes toward time, new values and attitudes that were taught through a variety of devices.

Thus by 1700 some English enterprises can be described as possessing "the familiar landscape of disciplined industrial capitalism, with the time-sheet, the time-keeper, the informers and the fines" (Thompson 1967, p. 82), several devices and practices that rewarded the desired time discipline and punished its violators. But these were devices that altered and reinforced the habits of adults, adults who needed to be converted to the new temporal practices from such older patterns as the weekly Saint Monday, the habit of taking Monday off each week to relax, to socialize, and most salient from the standpoint of the new time discipline, to opt not to show up for work. And if people could be taught the new time discipline early in life, they would be better prepared to

meet the growing synchronization demands of the workplace—or at least to make the manager's ability to achieve it easier.

So a variety of forces, religious as well as economic, led to an increased emphasis on teaching punctuality in the schools, a life skill that was taught in both England and the United States (Thompson 1967; O'Malley 1990). For example, Michael O'Malley cited the following warning from a nineteenth-century *McGuffey's Reader*. "Little girl, never be a moment too late. It will soon end in trouble or crime" (1990, p. 20). This emphasis extended to the teachers as well as to the students, a point Thompson noted: "At the Methodist Sunday Schools in York the teachers were fined for unpunctuality" (1967, p. 84).

The twentieth century continued the nineteenth's emphasis on a strict punctuality as shown in the certificate awarded to my maternal grandmother when she was thirteen years old in 1903 (see Figure 4.1). A noteworthy feature revealed in this certificate is how fine-grained the school's system was for monitoring attendance and tardiness. The telling phrase on the certificate is "having been neither absent nor tardy during the month ending." These ten words speak volumes. First, they tell us that the school was concerned that my grandmother appeared both daily ("neither absent") and at the appointed times during the day ("nor tardy"), albeit the certificate does not specify the temporal point of no return a student needed to cross to be declared "tardy." But there is more, because the ten words also tell us that this laudatory behavior occurred during "the month ending," a detail indicating these awards were given on a monthly schedule throughout the school year. The certificate does not say whether it was presented in any kind of ceremony, but one easily envisions a modest monthly ceremony for bestowing these honors, not only to reinforce the recipient's behavior but also to remind the temporally deficient of the school's expectations in this regard.

The existence of a certificate at all is, of course, evidence for the importance placed on habits of punctuality. And to make sure the recipient understood the fundamental reason she was being rewarded, for why punctuality was so important, the certificate's first words present an aphorism attributed to Franklin: "Lost time is never found again." So in 1903 the Limerick School in Cedar County, Iowa, taught punctuality to its students well, perhaps too well, if punctuality implies an emphasis on speed. For a too great emphasis on speed is a matter addressed later in this chapter as well as in Chapters 7 and 9.

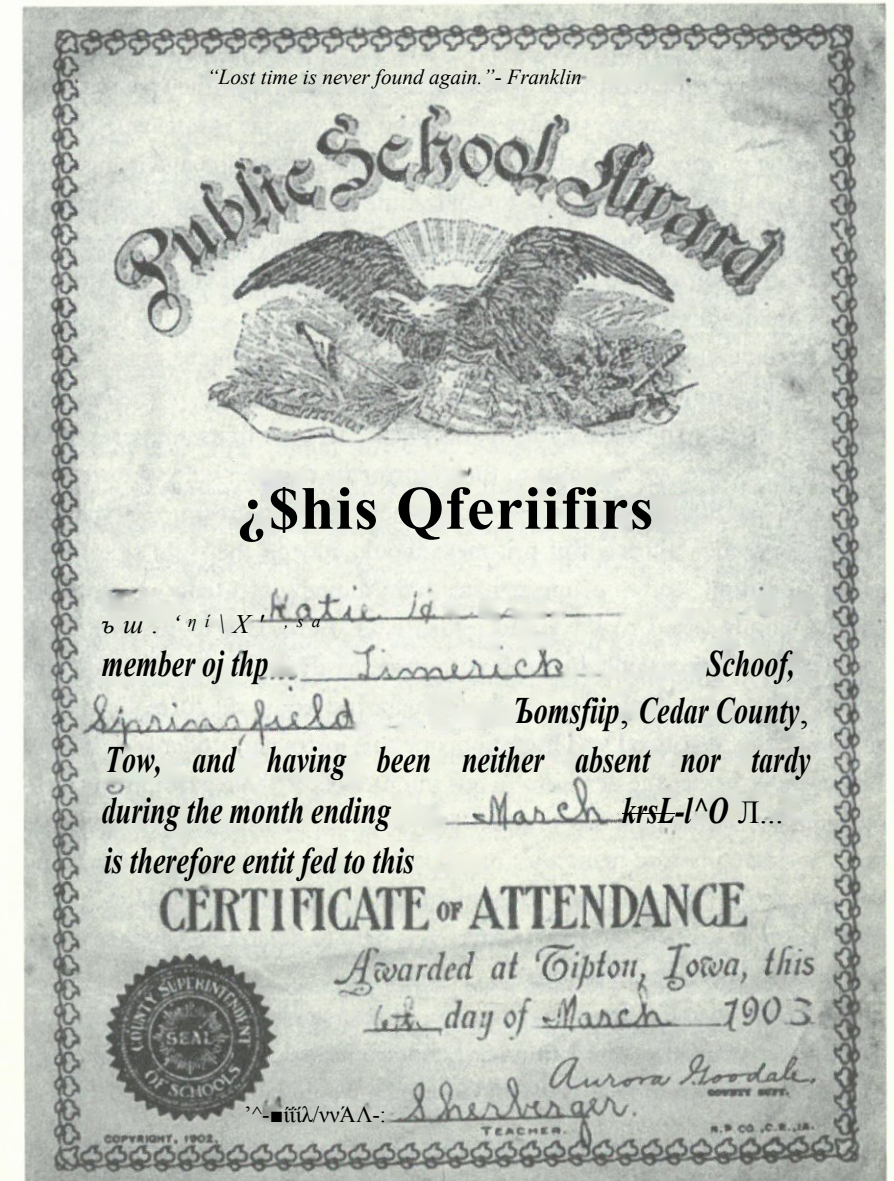


FIGURE 4.1. Certificate awarded in 1903 for an exemplary attendance and punctuality record in an American public school. The recipient was the author's maternal grandmother who was thirteen years old when she received the certificate.

Deadlines

Deadlines are the temporal markers defining punctuality; they are the standards used to determine whether something or someone is late, early, or on time. Being on time defines the virtuous; being late, the villain; and being early, usually just a mild irritant. In a fungible time sense, being one hour early is arithmetically just as unpunctual as being an hour late, but the stronger, and negative, reaction goes to the person or thing that is an hour late. And the origins of the deadline concept may explain why.

A deadline once referred to a physical line around a military prison, a line beyond which any prisoner who ventured would be shot (*Oxford English Dictionary*, 2nd ed.). Translating this spatial phenomenon into its temporal counterpart, being late, corresponds to the unfortunate prisoner who ventured beyond the deadline. In both cases we may shoot the transgressor—or want to, at least in some cultures. But prisoners should stay on the right side of the prison's deadline, and someone arriving early, though potentially an irritation, can be simply asked to leave and return later. Early arrivals present fewer problems and can usually be dealt with more easily than late arrivals or no-shows, and fewer people want to shoot them. Indeed, in the formalized rules of punctuality discussed by Thompson, one rule instructed students to arrive a few minutes before the deadline, "a few minutes before half-past nine o'clock" (1967, p. 84). So being a few minutes early was not considered unpunctual; it was considered part of being on time. But how many minutes are a few? And can one also be a few minutes late without being considered late? Unless a social consensus exists about such matters, it is hard to determine whether someone is early, late, or even on time.

And the consensus itself may change. In an assessment originally written seventy-six years after the Limerick School honored my grandmother for a month of perfect punctuality, Ellen Goodman would lament:

I am a member of a small, nearly extinct minority group, a kind of urban lost tribe who insist, in the face of all evidence to the contrary, on the sanctity of being on time.

Which is to say that we On-timers are compulsively, unfashionably prompt, that there are only handfuls of us in any given city and, unfortunately, we never seem to have appointments with each other. (Goodman 1979, p.106)

Times, they were a-changing in the twentieth century. For example, the practice of awarding certificates for perfect punctuality was unknown in the public schools my children attended late in the century. So across three or four generations the importance attached to being precisely on time was relaxed, not through a formal act of Congress, but in the less formal process of general social change. And in this case it is difficult to assess the change as either good or bad. Robert Heinlein (1973, p. 242) once quipped, "Roman matrons used to say to their sons: 'Come back with your shield, or on it.' Later on, this custom declined. So did Rome." Shall we likewise say, "Americans used to instruct their children: 'Be on time.' But then this custom declined, and so did America"? Before reaching such a pessimistic conclusion, this matter can be informed by examining punctuality from a cross-cultural perspective.

Many visitors to other cultures report that after language difficulties, temporal differences create the most problems, especially differences in punctuality (Spradley and Phillips 1972). And just such differences plagued a collaborative effort between banks from two countries—the United States and Mexico (DePalma 1994). The American bank, Banc One of Columbus, Ohio, signed on with Bancomer in Mexico to work with the Mexican bank in developing its credit card operations. A team from Banc One traveled to Mexico to work with their Bancomer counterparts on the credit card project, but the two groups experienced major difficulties stemming from punctuality issues. The Bancomer managers wanted to hold their meetings with the American bankers at 7:30 p.m. as part of their regular workday, which often extended from 9 a.m. to 9 p.m. This practice would intrude into time the Americans considered home time or recreation time, but certainly not work time (all times are not the same). But another problem arose, even after the U.S. bankers agreed to meet in the evenings: The Mexican bankers often arrived for the meetings sometime after 7:30 p.m.

To overcome this cultural impasse, the bankers from both countries agreed to a temporal compromise, with each group agreeing to behaviors contrary to their cultural traditions. For the Americans, this meant meeting during the evening. For the Mexicans, this meant agreeing to actually arrive at 7:30. And to ensure compliance with this now explicit agreement, the bankers developed a unique and highly visible enforcement mechanism. The bankers acquired a piggybank and placed it on the meeting table. The overall agreement specified that any late-arriving banker, American or Mexican, would drop a small num-

ber of pesos into the piggybank for each minute the banker was late (details about the banks and meetings from DePalma 1994, p. F5). Obviously the financial cost to the individual did not generate the motivation to be on time, for that motivation would have been social: To show up in the evening promptly at 7:30 demonstrated the commitment of both groups to the overall project, and either not to show up at all or to show up after 7:30 would demonstrate the opposite, an act that was then publicly sanctioned with deposits in the piggybank. A piggybank is, after all, one type of a bank, and it likely added important symbolic overtones to the mechanism for enforcing punctuality.

As this example illustrates, American culture and Mexican culture treat punctuality differently, and as a form of cultural variation, punctuality has been investigated comparatively across many countries. In the investigation of such differences, Robert Levine and his colleagues have taken the lead and have done so with consummate ingenuity. Levine discovered cross-cultural variation firsthand during a stay as a visiting professor at the federal university in Niteroi, Brazil (Levine and Wolff 1985). As he walked to class on his first day, he received a remarkable range of information about what time it was over a span of only a few minutes, information that included 9:55, 10:20, 9:45, 9:43, and 3:15 (Levine and Wolff 1985, p. 30). Welcome to Brazilian time, Professor Levine!

To a professor from California State University in Fresno, this initiation to temporal diversity certainly qualified as culture shock, but with his wits about him Levine was soon able to articulate what was happening: "Their timepieces are consistently inaccurate. And nobody minds" (Levine and Wolff 1985, p. 30). But more was happening than that, for Levine's unexpected immersion in a new temporal sea stimulated a stream of research on cross-cultural temporal differences that as of this writing has spanned more than two decades. The research has focused on punctuality differences and speed, or pace, of life differences, two interrelated temporal variables, both of which are the focus of this chapter—and to both of which Levine and his colleagues have made the leading contributions.

The first of the studies (Levine, West, and Reis 1980) examined punctuality differences between the United States and Brazil. To measure punctuality objectively, the Levine team checked the accuracy of fifteen randomly selected bank clocks in the downtown regions of Fresno, California, and Niteroi, Brazil (both cities had populations of about 350,000 at the time of the data collection). They used the time given by the local telephone company as the correct

time and calculated to the nearest minute each bank clock's deviation from this standard. As they had hypothesized, the American bank clocks were significantly more accurate than their Brazilian counterparts, on average by almost a full minute (Levine, West, and Reis 1980, p. 543). That clocks in a city vary, hence their authority does also, was observed two millennia before Levine began to use such variation as an index of the importance a society places on punctuality. In the first century Seneca provided the evidence: "It was as impossible to find agreement among the clocks of Rome as to find agreement among Roman philosophers" (Seneca as quoted in Boorstin 1983, p. 31). So, as was demonstrated with the problem of the longitude, behavioral punctuality is limited to the accuracy of the technologies used to reckon time.

Levine's success with this index of punctuality led to its use for subsequent research in other countries. With his colleague Kathy Bartlett, Levine employed the same method in five more countries and repeated it in the United States (Levine and Bartlett 1984). To make more plausible claims about entire societies, they checked the accuracy—as defined by the time given by the local telephone companies—of fifteen randomly selected bank clocks in each of two cities in each country (thirty clocks per country). The researchers measured the accuracy of bank clocks in Japan, Taiwan, Indonesia, Italy, England, and the United States, and did so in one large city (population over 1 million) and one medium-sized city (population of about five hundred thousand) in each country. The results showed that the Japanese bank clocks were the most accurate, followed in order by those in the United States, Taiwan, England, Italy, and Indonesia. However, statistical analyses revealed that only Indonesian clock accuracy differed significantly from the others, and city size had no statistically significant effect on clock accuracy (Levine and Bartlett 1984, p. 238).

Then, over a span of several years in the 1990s, Levine and Ara Norenzayan conducted the most ambitious international study to use the bank clock method yet (Levine and Norenzayan 1999). Basically, they sampled the world with a total sample of thirty-one countries. The countries were arrayed as follows in terms of bank clock accuracy (from most to least accurate): Switzerland, Italy, Austria, Singapore, Romania, Japan, Sweden, Poland, Germany, France, Ireland, China, England, Hong Kong, Costa Rica, South Korea, Bulgaria, Hungary, Jordan, United States, Taiwan, Canada, Czech Republic, Kenya, Netherlands, Mexico, Syria, Brazil, Greece, Indonesia, and El Salvador (Levine and Norenzayan 1999, p. 190). The United States ranked twentieth among the

thirty-one countries, which may not be surprising since punctuality may not be emphasized as much as it once was in American society. Although they probably have not disappeared entirely, certificates for punctual behavior do not seem as common today as they were in the America of 1903 (see the attendance and tardiness certificate in Figure 4.1).

But more important than any contest to win the punctuality championship are factors related to punctuality. Here too Levine and his colleagues have provided the leading work. For example, in the thirty-one-country study just discussed, Levine and Norenzayan (1999) reported analyses revealing that the accuracy of a country's bank clocks, hence its emphasis on punctuality, was greater in countries with colder climates, more productive economies, and more individualistic rather than collectivistic cultures. Indeed, they reported a substantial correlation between these three variables and punctuality (Levine and Norenzayan 1999, pp. 195-96), which indicates these three variables provided considerable predictive power for explaining the extent to which a country emphasizes punctuality. They also found that punctuality positively correlated with two measures of speed—the greater the emphasis on punctuality, the greater the speed with which things were done in a country. This finding replicated results from Levine and Bartlett's (1984, p. 244) earlier work, which produced even larger positive correlations between punctuality and the same two measures of speed/

Because of these findings, I included measures of both punctuality and speed values in the national study of American companies discussed in Chapter 3. Doing so allowed me to test the speed-punctuality association that Levine and his colleagues found in their studies of national cultures, but at the level of organizational cultures. And I found a statistically significant positive correlation between the psychometric scales measuring the extent to which punctuality and speed were valued in this random sample of all publicly traded American companies.⁸ So in organizations, at least American-organizations, as in countries, the greater the emphasis on being on-time the greater the emphasis on doing things fast.

Thus it seems that cultures that try to do things fast also try to do things with greater temporal precision in terms of observing deadlines and being on time. Moreover, economic productivity was linked to a greater emphasis on punctuality, as was individualism, which is an orientation to the individual and the individual's nuclear family rather than to the welfare of one or more larger

collectives (Levine and Norenzayan 1999, p. 182). As more researchers investigate these relationships and include more variables in their analyses, it will be interesting to see whether the physical climate retains its significant relationship with punctuality.

But other things are related to punctuality, several of which Levine, Laurie West, and Harry Reis (1980) discovered in their research on punctuality differences between the United States and Brazil. They conducted two studies, the first of which involved about four hundred randomly selected pedestrians evenly divided between Fresno, California, and Niteroi, Brazil. As with the bank clock results described previously, the watches worn by American pedestrians were significantly more accurate than those worn by their Brazilian counterparts. And indicating the degree of internalized concern with the time, Americans in the sample who were not wearing watches estimated the time of day significantly more accurately than did their watchless Brazilian counterparts. In fact, the errors in the Brazilian estimates were more than twice as large (an average error of 14.24 minutes) as those of the Americans (an average error of 6.93 minutes).⁹

However, both sets of estimates reflect the impacts of centuries of mechanical clocks and the form of time, clock time (i.e., fungible time), their influence promotes. That this influence has been deeply institutionalized is reflected in how we take the phrase "o'clock" for granted. This phrase is an abbreviation of the longer phrase "of the clock," which indicates this phrase originally identified a source of the time worth distinguishing from other sources, hence that more than one type or source was used or possible (Barnett 1998, p. 77). But even though punctuality is emphasized more in American culture than in Brazilian culture, there is no doubt that the least punctual American or Brazilian from either sample would consistently outperform the best pedestrian selected from either first-century Rome or tenth-century London to perform the same task, to answer the simple question: What time is it to the nearest minute? Actually, the concept of a "minute" would likely have been a mystery to the average citizen of either city during the first or tenth centuries.

So punctuality varies by eras, and within eras, by culture. What also varies by culture is the definition of punctuality itself. This was revealed when Levine, West, and Reis (1980) gathered a sample of 107 students from California State University in Fresno and 91 students from the Universidade Federal Fluminense in Niteroi, Brazil, a sample to which they then administered a questionnaire

asking about several punctuality issues. Consistent with less concern about being on time, the Brazilian respondents reported using longer time intervals before defining someone as "early" or "late." For example, the American respondents considered someone *early* who arrived for a date about 19 minutes before the set time, whereas the Brazilian respondents defined being early for a date as arriving about 24 minutes before the set time, a difference of about five minutes. This contrasts with a much larger difference for the definition of arriving early for a lunch appointment with a friend: The American respondents defined early for this event as arriving about 24 minutes before the set time; the Brazilians, about 54 minutes early—a difference of half an hour. The American students were also stricter than their Brazilian counterparts in defining "late" for these events. For a date, arriving about 17V2 minutes after the set time was late for the Americans; for the Brazilians, arriving about 20 minutes after the set time was being late (a 2 Vi-minute difference). And for an appointment for lunch, arriving about 19 minutes after the set time was being late to the Americans, and about 34 minutes after the set time was late to the Brazilians, a difference of 15 minutes.¹⁰ So the definition of punctuality differs by culture, and it also differs by event within cultures. The tolerances vary by both culture and event.

The event-contingent nature of punctuality tolerances shows once again that all times are not the same because what is considered late or early for one type of event is not considered so for another. Such socially constructed definitions provide the templates by which behaviors are informed, such as the decision for when to leave one's office to meet a friend for lunch, or whether to end an interaction with someone because of an appointment with someone else. The extent to which such choices constitute a dilemma will depend upon many factors, both personal and cultural, but if the definitions for early and late have greater tolerances, the frequency and intensity of such conflicts should be reduced, as would be the concern about being early or late. And Levine, West, and Reis (1980) found such differential concern, with American respondents reporting greater fear when they were late than the Brazilians. Consistent with this concern, the Brazilians responded more favorably (i.e., more likable, more relaxed, more happy, and more successful) about a person described as "always late for appointments" than the Americans did, with the opposite judgments made for a person described as "never late for appointments" (Levine, West, and Reis 1980, p. 548). Finally, and also consistent with the other results, the Americans rated punctuality as a more important trait in both a

businessperson and a friend than the Brazilians did, again reflecting the greater emphasis on punctuality in American culture as well as its stricter definition of punctuality.

Perhaps a reason the Brazilians thought of the person described as "always late for appointments" as "more relaxed" than the Americans is the relationship between punctuality and the emphasis given to schedules and deadlines. Though *almost* a tautology, emphasizing being on time and giving priority to schedules over other considerations are conceptually close but empirically distinct. Jacquelyn Schriber and Barbara Gutek (1987) developed measures of both constructs, and the statistical analysis they conducted revealed two distinct dimensions rather than the single dimension that would be expected if the two constructs were the same thing.

Using Schriber and Gutek's scales, Bluedorn et al. (1999) reported a statistically significant positive correlation between the two variables for a sample of 199 departments in a large hospital system: The more punctuality was valued in a department, the more adhering to schedules and deadlines was valued too. At the individual level of analysis, Charles Benabou (1999) found a similar significant positive correlation in a sample of 301 graduating management students at the Université du Québec à Montréal. Also basing his work on Schriber and Gutek's scales, Benabou asked these students the extent to which they would "agree to work in an organization described by the following statements" (1999, p. 262), the statements being Schriber and Gutek's scales. Benabou's findings indicate that individuals who preferred an employer that emphasizes punctuality also preferred an employer that emphasizes schedules and deadlines.

And data from the national sample of American companies (discussed in Chapter 3 and earlier in this chapter) included Schriber and Gutek's punctuality and schedule-adherence scales, which permitted this relationship to be examined at the level of organizational culture. These data revealed a statistically significant positive correlation.¹¹ So punctuality and schedule-adherence values are positively correlated in organizational cultures, departmental cultures, and in the organizational attributes individuals prefer for jobs. But the correlations' magnitudes (see note 11), though consistently positive, argue that the two phenomena are not the same thing. Perhaps they are related reciprocally in the sense that creating schedules is a means for staying on time, and values of adhering to a schedule lead to valuing punctuality.

How these two values work together is illustrated in a story told by Richard

Gesteland (1999, pp. 58-59). A Malaysian businesswoman told him about an unpleasant experience she had in the United States. She had flown from Malaysia to Boston for a meeting with managers at an American company, arrived very late the night before, overslept the next morning, and then got lost driving her rental car around Boston trying to find the company, which made her four hours late for the meeting. Citing "full calendars," the Americans told her they could schedule another meeting with her—nine days later. Unfortunately, she had to be back in Malaysia before then.

The story includes both punctuality and schedule-adherence values. The Malaysian woman was late for her appointment by American standards. Thus she violated the norms of American punctuality. The story also illustrates the use of schedules. The reference to calendars is an explicit reference to a formal schedule, and once the schedule was set, the Americans were not going to change it. This is reminiscent of General Von Moltke's conversations with the Kaiser, and Von Moltke's attitude that "once settled, it [the plan] cannot be altered" (see Chapter 1). The Americans were certainly not going to alter their schedules either. Somehow this response to the Malaysian woman's unintentional lack of punctuality seems extreme, especially for anyone who has ever experienced the ordeal of a flight that long (well over twenty hours) and then tried to navigate a major metropolis in a foreign country by themselves. It would have been unreasonable to expect the Americans to drop what they were doing as soon as she arrived, but perhaps a reasonable accommodation would have been for them to meet with her during "off hours," just like the Banc One group agreed to do in Mexico.

A true deadline is really a very precise appointment, and when appointments become deadlines, those appointments have a strong structuring effect on human behavior. In fact, an explicit deadline serves as the fundamental boundary condition for the punctuated equilibrium model of group development. Before it was applied to groups or other social phenomena, the concept of punctuated equilibria was originally developed by Niles Eldredge and Stephen Gould (1972) to describe patterns in the evolutionary (fossil) record, patterns in which long periods of stability would be "punctuated" by brief (by the scale of geologic time; see Gould 1987, p. 3) events that produced large, discontinuous change: "stasis punctuated by episodic events" (Eldredge and Gould 1972, p. 98). Working from this theoretical base, Connie Gersick proposed the punctuated equilibrium model as a paradigm for describing the pattern of change in several do-

main, including group development and other social processes, and in doing so indicated that some incremental change may occur during the periods of stability (Gersick 1991, p. 16).

For example, Thomas Kuhn's (1970) famous analysis of scientific paradigms fits the punctuated equilibrium pattern (Gersick 1991). What Kuhn called "normal science" would be the relatively long periods of stability characterized by incremental knowledge accumulation and change, all occurring within the boundaries of the existing scientific paradigm. These periods of normal science would then occasionally be punctuated by scientific revolutions, when a new theory or interpretation would appear and redefine the paradigm dramatically, perhaps totally replacing it, leading to a new period of stability and incremental knowledge growth.

But perhaps the most successful application of the punctuated equilibrium paradigm for explaining and interpreting social phenomena is Connie Gersick's (1988, 1989) own model of group development, a model of development for groups, that is, with *deadlines* for completing a project. According to Gersick's model, groups with a specific project and an explicit deadline for its completion develop as follows: During an initial phase they experiment with different approaches to the project and develop a direction for dealing with their project; approximately halfway to the deadline the group will significantly reorient itself and develop a new approach for completing the project and follow that approach to complete the project on time (by the deadline). After a direction is selected in the first phase, it becomes a period of stability, which is then punctuated by a major reorientation that becomes another stable period lasting until the end of the project. Although alternative interpretations have been proposed for what happens in such groups (Lim and Murnighan 1994; Seers and Woodruff 1997), these interpretations and Gersick's model all have one thing in common: The motive force in each interpretation is located in the deadline, an appointment taken seriously and seen as having a low far-side tolerance. The deadline has little if any slack for accepting projects completed late. So a concern for punctuality leads to structures beyond just being on time, and by that reaffirms once again Elliott Jaques's cogent observation: "In the form of time is to be found the form of living" (1982, p. 129).

But despite the appointments and deadlines and the structures they engender, what if one is running late, however late might be defined? To still come in on time, many people, groups, and societies have adopted the strategy of in-

creasing the speed with which life, or at least part of life, is engaged. And this brings us to a consideration of speed itself.

THE QUEST FOR SPEED

Several terms apply to the referent of speed. Robert Levine and Ara Norenzayan (1999, p. 178) used *pace*, and Robert Lauer (1981, p. 31) called it *tempo*. Although the choice of term may be largely a matter of personal taste, to me the term *speed* seems most fundamental, so as did Stephen Kern (1983), I will use the term *speed* in this discussion, and it will be defined as the frequency (number) of activities in some unit of social time (Lauer 1981, p. 31). As such, speed refers to "the frequency of activities" in general and is not restricted to a specific domain of activities such as the speed of change, a restricted usage Lauer allowed (1981, p. 31) but which will be disqualified here. And although the speed of life may be accelerating in general (Gleick 1999), the speed of change, contrary to received wisdom, may not be accelerating (Allen 2000). Lauer (1981, p. 32) also included *perceptions of speed* in his concept of tempo, but that phenomenon will be treated separately, in Chapter 7.

But if James Gleick (1999) and others (e.g., Robinson and Godbey 1997) have assessed things correctly, why did the speed of life accelerate in the twentieth century—and perhaps continues to do so? Several factors may be involved, but a major underlying mechanism seems to be efficiency and the desire for it.

Efficiency and productivity are basically the same thing: the ratio of output to input in an organization (Price 1972, p. 101; Price and Mueller 1986, p. 205). Output is whatever the organization produces (e.g., cars, college graduates, cured patients), and input is all of the resources used to produce the output. Although Price discussed efficiency in an organizational context, the concept is actually more universally applicable, since it can be applied to systems of all sorts, as well as to individuals. And speed is directly related to efficiency, for the faster output can be produced with the same amount of input, the more efficient the system becomes.

But efficiency is sometimes confused with a similar-sounding concept: effectiveness, which James Price defined as "the degree to which a social system achieves its goals" (1972, p. 101), and which Peter Drucker argued, while acknowledging the importance of efficiency, should be given primacy over efficiency (1974, pp. 45-46). Further, because individuals obviously have goals too,

the effectiveness concept can be applied properly to individuals (as was done in Chapter 3), just as it can be applied to social systems. In general, speed is directly about efficiency and only indirectly about effectiveness. To illustrate this point, my experience with a high school speed-reading course is instructive. The course was a voluntary experience that lasted for a month or so. Despite being ultimately clocked at about two thousand words per minute (supposedly), I never enjoyed approaching written material that way, a point the speed-reading instructor highlighted one day. She explained that she used speed-reading frequently herself and had just speed-read a novel the night before. Even though she said that over thirty-five years ago, I can still remember my internal reaction as if it were yesterday: Why? What was the point of doing that? Isn't the point of reading a novel to *enjoy* the experience?

I could understand speed-reading materials such as bureaucratic rules and reports—to minimize the pain—but the idea of using speed-reading with material one is reading for pleasure seemed upside down. Yes, speed-reading would get one through a book faster. But if that comes at the cost of reduced gratification from the process, not to mention the loss of subtle and important insights, matters that often require pause for reflection, speed becomes a distortion, the ultimate end, and efficiency will trump effectiveness when it should be exactly the other way around. Efficiency is usually good, but effectiveness is always better. One is a means, the other an end, and to focus on efficiency entirely is in the truest sense to miss the point. Efficiency is about how; effectiveness is about why. Efficiency is to effectiveness what intelligence is to wisdom.

As mentioned earlier, until recently the matter of speed mainly concerned efficiency. But the emergence of speed-based competitive strategies (Blackburn 1991; Fine 1998; McKenna 1997; Meyer 1993; Stalk and Hout 1990; Vinton 1992) has linked speed much more directly to effectiveness. The strategy concept has traditionally been oriented toward the attainment of basic organizational goals (e.g., Chandler 1962, p. 13), so a speed based strategy is much more directly linked to goal achievement (i.e., effectiveness) than is a strategy that focuses on increasing production speed simply to enhance internal efficiency, because the latter strategy routes the impact of speed on effectiveness *indirectly*, through efficiency. In some ways speed-based competition reverses the old scientific management sequence, which suggested that increased speed led to increased efficiency, which led to greater effectiveness. The whole point of time-and-motion studies was to identify and develop the proper procedures and worker move-

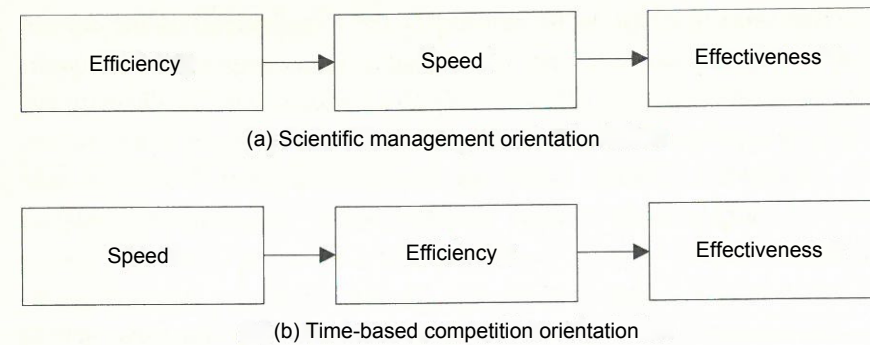


FIGURE 4.2. Different specifications for speed in two orientations to organizational effectiveness

ments to allow more work to be done, perhaps with less worker effort, during the same workday. The order is now increased efficiency leading to increased speed, which leads to increased effectiveness (see Figure 4.2).

The efficacy of speed for effectiveness has some empirical support too. As noted in Chapter 3, Kathleen Eisenhardt's research (Bourgeois and Eisenhardt 1988; Eisenhardt 1989) revealed that faster decision making by top executives was associated with higher organizational effectiveness. William Judge and Alex Miller (1991) then replicated these results but found that they seemed to apply only to high-velocity environments. And in a related piece of research, Marina Onken (1999) found a positive correlation between companies' speed values and both return on equity and return on sales. So both greater speed, at least the speed of executive decision making, and a greater emphasis on speed values have been related to higher levels of organizational performance, at least in some contexts—but not, perhaps, without cost.

THE COSTS OF SPEED

Some of the attempts to create greater efficiency actually lead to a sense of falling behind, of being late, that adds to the quest for speed. This can be seen in the movement to downsize organizations that was so prevalent in the United States during the 1990s. These efforts were seldom accompanied by plans to reduce the scale or scope of the organization's operations, so presumably the amount of work did not decline, only the number of people who had to do it.

Having more to do then meant an individual had to either work longer hours or work faster, or both, to complete the larger workloads. And the combination of more to do and doing each task faster produces the work pattern known as multitasking.

Multitasking shares some elements in common with polychronicity (see Chapter 3), because both involve the engagement of several tasks simultaneously. But a different orientation to speed distinguishes the two concepts. Polychronicity is purely about preferences for sequence: one thing at a time or moving back and forth among several tasks. It is not about getting more things done; it is not about doing things faster. Conversely, multitasking seems to be a combination of a relatively polychronic pattern with an overriding quest for speed, to get more things done. A familiar variety show act that Rhett Standifer and I described illustrates the difference (Standifer and Bluedorn 2000).

The act is the well-known performance of the plate spinner, the individual who attempts to keep a dozen or more plates spinning simultaneously, with each plate spinning atop a stick that is fixed to the top of a table. We used this example to illustrate polychronicity, but we should have been more careful, because the image the plate spinner's act engenders would actually be closer to the polychronicity-plus-do-things-faster pattern just described as multitasking. That Aram Khachaturian's *Sabre Dance* is often the musical accompaniment to this act reinforces this point, which is of an almost-perfect visual and audio representation of the frenzied multitasker. But to isolate the polychronic component from plate spinning, the plate-spinning act needs to be moved to the moon. On the moon, with only one-sixth the gravity of the earth (Heiken, Vaniman, and French 1991, pp. 27-28), the performer can move more leisurely because the plates will fall less quickly should they stop spinning. Lunar plate spinning comes closer to capturing pure polychronicity than its terrestrial counterpart. On the earth, plate spinning is a multitasking activity.

So is some organizational work. For example, Deloitte Consulting listed "multi-tasking" as essential for success in its job description for systems analysts.¹² And as presented in Chapter 3, polychronicity and a speed emphasis were positively correlated as components of organizational culture in two different studies (Onken 1999; the national sample of publicly traded American companies). These positive correlations indicate that the greater the polychronicity, the greater the value placed on speed in organizational cultures, but because the correlations are no larger than they are (see the discussion of these

correlations in Chapter 3 and its notes), they also indicate that polychronicity and speed values are two different variables, albeit positively correlated ones in these American samples.

But is multitasking good or bad? Since many of the good and bad effects associated with polychronicity have already been discussed in Chapter 3, the focus here will be on the speed component. Some of the most intriguing research on the relationship between speed and human well-being has been conducted by Robert Levine and his colleagues, and the results are startling: Speed kills.

In two studies Levine's research teams have objectively measured the speed of life (he likes to call it the pace of life) and found it related to rates of death from coronary heart disease. In a study of thirty-six American cities, Levine et al. (1989) measured the speed of life in each city. They did so by measuring (1) the walking speed of pedestrians in downtown areas, (2) the speed of bank clerks in responding to a standard request for change, (3) the talking speed of postal clerks responding to a standard question, and (4) the proportion of pedestrians wearing watches in downtown areas. They combined these four measures to form a pace-of-life index, which revealed that the northeastern United States had the fastest pace of life, followed in turn by the north central, southern, and western regions (Levine et al. 1989, p. 515). Los Angeles had the slowest pace of life; Boston, the fastest (Levine 1989, p. 45). So perhaps the reference should be to a Boston rather than a New York minute (New York had the third-fastest pace of life).

But the finding that dilates the pupils is the relationship between pace of life and coronary heart disease death rates. The correlation was statistically significant and positive, and it was large regardless of whether pace of life was adjusted for the age of each city's population or not. The faster the pace of life, the greater the rate of death from coronary heart disease.¹³

Levine and Norenzayan (1999) conducted an even more ambitious test of this relationship in their study of thirty-one countries discussed earlier. Using a similar pace-of-life index, they found a statistically significant positive correlation between speed of life and coronary heart disease death rates, a relationship that statistical controls revealed could not be explained by economic factors (Levine and Norenzayan 1999, pp. 191-94).¹⁴ So the same relationship Levine et al. (1989) found in the study of American cities was replicated in the cross-cultural study of thirty-one countries: the faster the speed of life, the

higher the death rate from coronary heart disease. But the relationship is not strong enough to declare a speed imperative. A city with a very fast pace of life in the American city study, Salt Lake City, with the fourth-fastest pace of life, just behind New York, had a very low coronary heart disease death rate. Similarly, in the study of thirty-one countries, Japan had the fourth-highest pace score but one of the lowest coronary heart disease death rates. Such cases suggest that the impacts of speed on human health are contingent on other factors, such as smoking and diet (Levine et al. 1989; Levine and Bartlett 1984).

Another case of the apparently contingent nature of speed's impact occurs in its relationship with a general willingness to help others. And again, Levine's work provides the findings. Investigating the hypothesis that pace of life would be negatively correlated with a willingness to help others in need, Levine et al. (1994) conducted additional research in the same thirty-six cities used for the coronary heart disease research. In each city they tested, behaviorally, for people's willingness to do such things as help a blind person, mail a lost letter, and help someone with an injured leg. Their results were going as predicted until the returns arrived from California. Although the speed of life in the eleven California cities included in the study was generally low, so was the average willingness to help people in these cities (Levine 1997, p. 163). Perhaps as a result of this set of cities in the sample, the researchers found no significant relationships between pace of life and any of the seven measures of willingness to help another included in the study (Levine et al. 1994, p. 77).

An interesting conceptual distinction grew out of these findings, the difference between helping and civility. For Levine noted, "In New York City, helping often appeared with a particularly sharp edge" (Levine 1997, p. 165). Thus help can be delivered with a variety of styles.

As has been discussed, speed is related to mortality from at least one major category of disease (coronary heart disease), but it can also have positive effects on such human endeavors as organizational effectiveness and efficiency. And efficiency has been an underlying motivation for much of the desire to increase speed. But there is a paradox to efficiency, a paradox James Gleick described as the effect of a web growing tighter and becoming more vulnerable to small disturbances that can "cascade through the system for days" (1999, p. 223). The web Gleick referred to is the web of service offered by airlines to the cities they serve. In terms more commonly used in organization science, the tightening web would be a system whose parts are becoming more tightly

coupled (Weick 1979), which makes them more vulnerable to both small and large disruptions (see Weick 1995, p. 179, and Perrow 1984, pp. 62-100).

I believe this is a reason why speed and punctuality values are positively correlated. Being late or early is a disruption, especially in a tightly coupled system whose components are operating at close to maximum speeds. If schedules have been set to maximize efficiency, that is, with very small slack time tolerances allocated to deadlines such as takeoff and landing times, the efficiencies designed into the system will actually make the disruption a much bigger problem than if the system had not been designed to be quite so efficient in the first place (see the description of slack in Perrow 1984, pp. 89-90). In tightly coupled systems, the general association will be especially strong between valuing and practicing strict punctuality and doing things rapidly.

In a very real way this point returns us to the problem of longitude. The punctuality tolerances required for accurately determining the location of a ship at sea were extremely tight, allowing an error of less than one one-hundredth of 1 percent per day, the tolerance set by Parliament and enforced by the Board of Longitude. For errors greater than this, the threat of a disruption cascading through the system was horrific indeed, much to the sorrow of thousands of mariners. So despite problems they may cause, punctuality and speed play vital roles in promoting human well-being. The problem seems to be in striking the proper balance, in deciding how punctual? How fast? These are issues to which we will return in Chapters 7 and 9.

Eternal Horizons

Does eternity only stretch one way?

—Charlotte Perkins Gilman, *The Home*

Winston Churchill thought eternity stretched both ways, for he believed, “The longer you can look back, the farther you can look forward” (1974, p. 6897). Mary Austin reached the same conclusion even more strongly than did Churchill: “The arc of my mind has an equal swing in all directions. I should say the same of your mind if I thought you would believe it. But we are so saturated with the notion that Time is a dimension accessible from one direction only, that you will at first probably be shocked by my saying that I can see truly as far in front of me as I can see exactly behind me” (1970, p. 41).

These perspicacious observers of the human condition reached much the same conclusion about a connection between past and future. This chapter will examine this proposed connection between past and future, and even more important, examine why it exists and why it is important. But before examining these issues, we will begin with two simpler questions, questions whose answers will lead us to these weightier issues. One question asks, How far ahead do people look? (In Churchill’s terms, how far forward do they look?) The other asks, How far back do people look? (In Churchill’s phrase, how long back do people look?)

For example, how often do you think about things that might happen 250 years from now, that is, 250 years ahead? As we are about to learn, such be-