

• 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 Eisenhardt, *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 unites 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

STANFORD BUSINESS BOOKS
An Imprint of Stanford University Press

Stanford University Press
Stanford, California

© 2002 by the Board of Trustees of the
Leland Stanford Junior University

Printed in the United States of America
on acid-free, archival-quality paper

Library of Congress Cataloging-in-Publication Data

Bluedorn, Allen C.
The human organization of time : temporal realities and experience /

Allen C. Bluedorn.
p. cm. — (Stanford business books)

Includes bibliographical references and index.

ISBN 0-8047-4107-7 (alk. paper)

I. Time—Social aspects. 2. Time—Sociological aspects. I. Title.

II. Series.

HM656 .B58 2002

304. r3—dc2i

2002001375

Original Printing 2002

Last figure below indicates year of this printing:

и 10 09 08 07 06 05 04 03 02

Designed by James P. Brommer

Typeset in 10.5/14.5 Caslon

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.

Polychronicity

Nobody can do two things at once, you know.

—Lewis Carroll, *Through the Looking-Glass*

... beings implement a fundamental strategy for engaging life. Not all employ the same strategy—far from it—but everyone develops a strategy for engaging the mixture of life's activities, transcendent and mundane, even if just by default. Elsewhere I have written of things fundamental and asked, "What is as fundamental as time?" (Bluedorn 2000e, p. 117); and within the domain of temporal matters, it is also reasonable to ask, What is a more fundamental process strategy than the choice of the pattern for one's activities, a pattern that becomes habitual? A process strategy is not about ends; it is about means. It is not about what; it is about how.

Strategy was defined by Henry Mintzberg as "a *pattern in a stream of decisions*" (Mintzberg's emphasis; 1978, p. 935). And although an infinite number of patterns are possible, all strategies for engaging life's activities fall along a continuum known as polychronicity, a continuum describing the extent to which people engage themselves in two or more activities simultaneously. That this choice is fundamental is revealed by the fact that most people most of the time are unaware that they are even making it. This is because the choice of strategy results from a combination of culture and personality, both of which store these choices and preferences at deep levels, very deep levels. Nevertheless, a choice or a decision made unconsciously is still a choice or a decision.

If something is fundamental, it should have important consequences, which means that if the polychronicity strategies of cultures and individuals are fundamental, they should have important consequences. And they do. But before exploring these consequences, it is necessary to understand the polychronicity concept more completely. So before considering polychronicity's relationships with other behaviors, and before evaluating the effectiveness of specific polychronicity strategies, the polychronicity concept itself will be described in greater depth.

THE CONCEPT OF POLYCHRONICITY

Polychronicity is about how many activities and events people engage at once (a more formal definition will be provided shortly). And though not using the polychronicity concept, research on managerial behavior reveals that managerial work seems to require more polychronic behavior than much nonmanagerial work (see the descriptions of managerial work in Guest 1956; Mintzberg 1973; and Stewart 1967). Indeed, Carol Kaufman-Scarborough and Jay Lindquist concluded that the average manager works polychronically (1999, p. 293). This point is illustrated in the behavior exhibited by one of the general managers John Kotter studied (1982).

In a detailed description of one general manager's day (Kotter 1982, pp. 81-85), the polychronic nature of managerial work becomes evident. The manager attended a regular morning meeting, and Kotter noted that during the meeting "Richardson [the general manager] reads during the meeting" (p. 82). Reading and involvement in the meeting at some level indicate Richardson's simultaneous engagement in at least two activities.

Further, Kotter's description reveals that Richardson's entire day was characterized by short episodic activities—the meeting where Richardson read lasted only fourteen minutes—many of which were interruptions of other activities, activities with which Richardson returned to active engagement after dealing with the interrupting activity. For example, at 10:50 A.M. on this same day Kotter described Richardson thus: "He gets a brief phone call, then goes back to the papers on his desk" (p. 83). The "going back" is indicative of the back-and-forth pattern of polychronic behavior, because it is another way of engaging several activities during the same time. Many of the day's interruptions result from people—subordinates, peers, bosses—simply walking into

-HrAO generates Δ
 & relatedness

Richardson's office to discuss something. Although Richardson's office was not attached to the large, plazalike reception area Edward Hall described as characteristic of office designs in polychronic cultures (1983, p. 47), having ones door open and promoting a work climate in which people feel free to enter and interrupt could be considered an American approximation of such space-time architectures.

But what if Richardson had behaved less polychronically? What if he had taken a more monochronic (i.e., one thing at a time) approach to his day? How would he have behaved differently? At the meeting he would not have read; instead, he would have focused his attention on the meeting and nothing else. The material he read during the meeting would have been deferred to later when he would have read it and done nothing else. Similarly, he would not have taken phone calls while he worked on other tasks, perhaps having his secretary screen the calls for him so he could return them at a time when he did nothing but make phone calls. And the open-door policy would have been changed to one where he would see people only during certain times of the day, and then only if they had appointments. So a monochronic Richardson would be very different from a more polychronic Richardson.

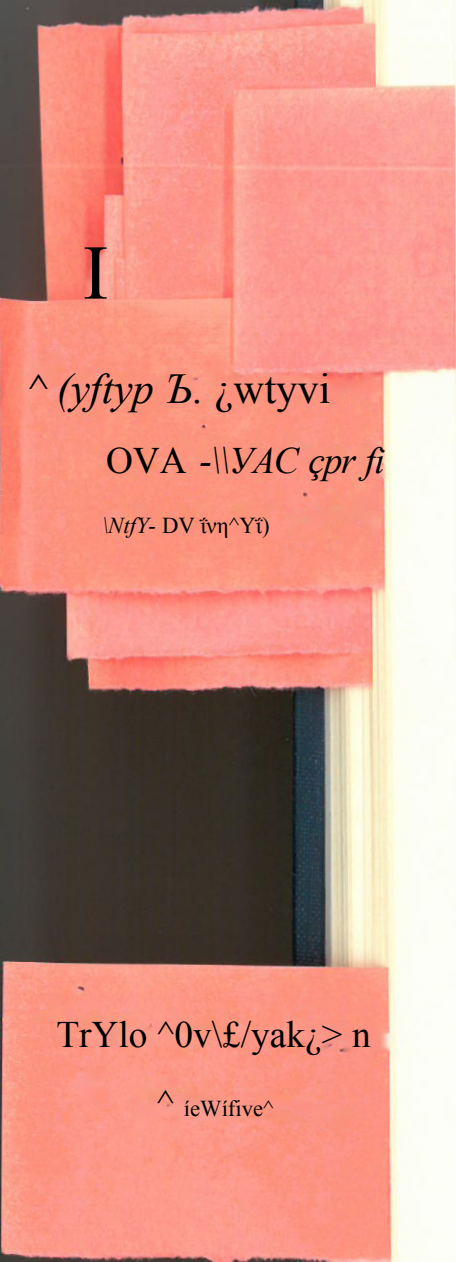
Henry Mintzberg has characterized much work as involving "specialization and concentration," but he concluded there is at least one major exception: managerial work, which allows "no such concentration of efforts (1973? P- 3!)- Mintzberg's description of managerial work as highly varied and fragmented echoes the findings of other research on managers (e.g., Guest 1956; Stewart 1967). For example, Robert Guest described the foreman's job as consisting of constant "interruption, variety, discontinuity" (1956, p. 481), with the hourly employee's work being just the opposite. Even more telling is his finding that foremen had to "retain many problems in their minds simultaneously, and to juggle priorities for action" (p. 480). The retention of "many problems in their minds simultaneously" speaks direcdy to the definition of polychronicity, mental activity being a component of polychronicity as well as overt behavior (Persing 1999).

The point is that managerial work is polychronic work, at least compared with most nonmanagerial work. So to become a manager means to face a work context replete with polychronic demands. And consistent with Guest s (1956) study of foremen, nonmanagerial employees appear to cross the polychronicity Rubicon when they are promoted to supervisory positions; nevertheless, it

may take time, in Mintzberg's words, for a manager to become "conditioned by his [her] workload," for the work to lead the manager "to develop a particular personality" (1973, p. 35). The supervisory level may be the socialization and selection ground for identifying individuals who are sufficiently polychronic for the demands of managerial work and for possibly developing polychronic behaviors within managerial candidates too. But polychronicity is about engaging life in general, not just work, so the concept should be examined in the widest possible context, which takes us to its origins.

Edward Hall (1981b) introduced the concept of polychronicity to describe fundamental differences in human behavior, and he continued to study and develop the concept thereafter (Hall 1981a, 1982,1983; Hall and Hall 1987,1990). Hall described cultural variance along the polychronicity continuum in the following wayjOn the strictest sense, a polychronic culture is a culture in which people value, and hence practice, engaging in several activities and events at the same time. Monochronic cultures are more linear in that people prefer to be engaged in one thing at a time'j)(Bluedorn 1998, p. no). But as polychronicity scholars have noted (Bluedorn et al. 1999; Palmer and Schoorman 1999), Hall implied in some of his work that polychronicity refers to a much larger set of phenomena (e.g., Hall 1981a, p. 17; 1983, p. 53; Hall and Hall 1990, pp. 13-15). Nevertheless, most polychronicity scholars employ the more focused version of the concept, which is how the concept will be defined here. Following Bluedorn et al. (1999, p. 207) and Hall (Bluedorn 1998, p. no), polychronicity is the extent to which people (1) prefer to be engaged in two or more tasks or events simultaneously and are actually so engaged (the preference strongly implying the behavior and vice versa), and (2) believe their preference is the best way to do things.

This definition is preferable on two grounds. First, it is consistent with many of Hall's own definitions (e.g., Bluedorn 1998, p. no; Hall 1983, p. 230). Second, it allows for the testing of empirical relationships between polychronicity and other variables rather than assuming they are all simply dimensions of a single phenomena, polychronicity. This assumption creates ambiguity for interpreting results when such an omnibus variable is related to other variables (Carver 1989). Indeed, David Palmer and David Schoorman (1999) analyzed a large complex of variables that might have constituted a broader definition of polychronicity. Their results showed that compared to models in which the preference-for-engaging-two-or-more-events-simultaneously dimension was



combined on the same dimension with other variables, the model in which this was specified as a separate dimension revealed a much better fit to the data. Moreover, the correlations between the preference-for-engaging-two-or-more-events-simultaneously dimension and the other dimensions in the best-fitting model were very low, so Palmer and Schoorman concluded, "The three dimensions of time use preference [preference-for-engaging-two-or-more-events-simultaneously], time tangibility, and context do not represent highly correlated measures and should be considered separately" (1999, p. 336). Thus polychronicity is defined here in the narrowly focused preference-for-engaging-two-or-more-events-simultaneously sense, and research about its relationships with variables suggested by Hall and others will be presented later in this chapter.

Polychronicity is a continuum, and preferences exist for degrees of engagement. At one extreme is the pattern of focusing on one task at a time, interpreting other potential tasks and events as interruptions and attempting to shield one's chosen task from such interference. The other extreme is actually open-ended, and it involves engagement in several tasks simultaneously, sometimes literally simultaneously and sometimes in a frequent back-and-forth engagement pattern. And Kotters' description of how Richardson worked illustrates both ways in which multiple tasks can be engaged simultaneously (e.g., reading *while* participating in a meeting, and switching back-and-forth between phone calls and his other work).

The previous discussions of Richardson's actual behavior and its opposites lead one to think in terms of two types of behavior: the engagement-in-many-tasks extreme being the high polychronicity pole (though higher levels of polychronicity may be possible), and the engagement-with-a-single-task extreme being the low polychronicity pole, sometimes referred to as a monochronic orientation. Although it is easier to see this distinction in terms of a dichotomy—polychronic or monochronic—polychronicity is a *variable* that reflects an underlying *continuum* of engagement preferences and practices, and a potentially infinite set of gradations distinguish one individual's preferences from another's, as well as one culture's from another's.

Linear Versus Circular

Life strategies become more and more linear toward the low-polychronicity (monochronic) end of the continuum where one task follows neatly upon the

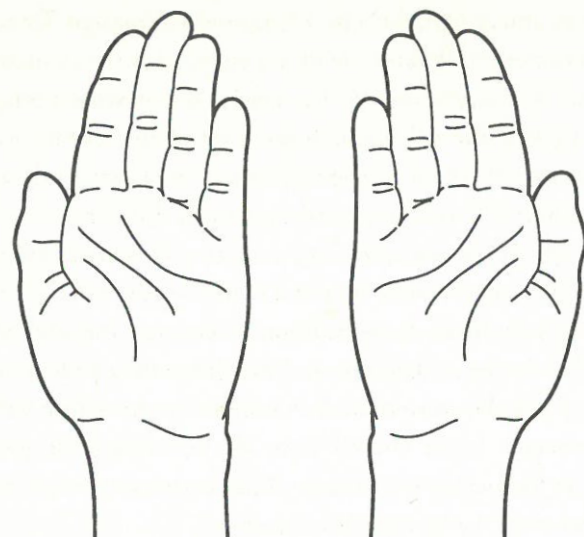
completion of its antecedent, forming a temporal archipelago. Toward the other end of the continuum, tasks and events are engaged at the same time, or what would seem to be more common, by revisiting the same projects multiple times during a given interval. Though not a set of eternal returns (see Eliade 1954 about the eternal return concept), projects, activities, and events may be revisited many times. Two examples illustrate this difference.

Although naps are known in the United States, they are usually reserved for an individual's private time and are not a behavior approved of on the job. In Spain, however, a centuries-long tradition is observed for work to cease for a two-hour period during midafternoon. This allows for a siesta or other activities, after which people *return* to work. Contrast the American with the Spanish process strategies. In the United States the activities of sleep and work are kept separate; in Spain they intermingle. The American process strategy is less polychronic, whereas the Spanish is more so.

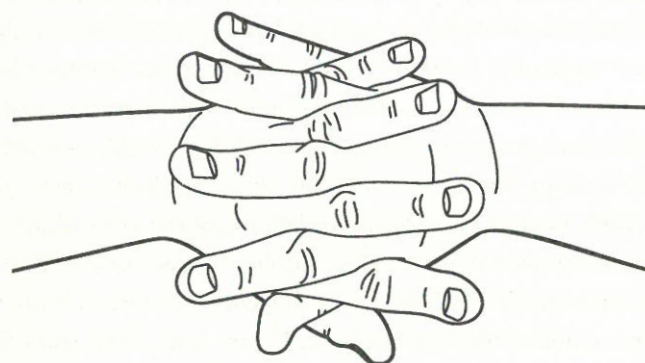
Another way to see this difference is with a demonstration involving your hands. Straighten the fingers of each hand, gather the fingers together so that adjacent fingers touch, keep each hand flat, and then place both hands in front of your face, palms toward you, so that each hand is viewed comfortably. In this position your two hands illustrate a monochronic process strategy (see Figure 3.1a). The left hand represents one task; the right hand, a different task. As each hand is distinct, so too are the tasks. They neither overlap nor intermingle. This process strategy illustrates a very low level of polychronicity, perhaps as low as is possible because there is no overlapping of the tasks whatsoever.

But your two hands, representing two different tasks, can also illustrate more polychronic strategies. To shift to a more polychronic strategy, begin with your hands in the monochronic position (as in Figure 3.1a). Then splay the fingers and interlace them as illustrated in Figure 3.1b. Because the two hands represent two different tasks, interlacing the fingers illustrates a pattern of moving back-and-forth between the two tasks, and if the fingers are completely interlaced, a process of revisiting each task several times.

Thus the monochronic pattern is linear, because one task (the right hand) is distinct from the other (the left hand) and follows after it. Polychronic strategies are cyclical, because they involve multiple visits—revisits—to the same tasks and events. Noting this distinction, Mary Waller, Robert Giambatista, and Mary Zellmer-Bruhn developed a measure of group polychronicity that included observations of how often groups "switched back to a previous phase"



(a) Monochronic process strategy



(b) Polychronic process strategy

FIGURE 3.1. Monochronic and polychronic process strategies

of the problem-solving process (1999, p. 251). The two patterns—monochronic and polychronic—form a continuum, because polychronicity is the extent to which people prefer to engage in two or more tasks simultaneously, and the complete absence of any simultaneous involvements, engaging tasks one at a time, is the least polychronic position on the continuum.

Culture and Personality

From the beginning (Hall 1981b), polychronicity has been analyzed at both the group and individual levels. As such, it has been seen as both a cultural and an individual phenomenon. And values about the same phenomenon can and do occur in both cultures and personalities, but this does not mean that relationships involving them are the same across levels of analysis (e.g., Dansereau, Alutto, and Yammarino 1984; Robinson 1950). Relationships found at one level of analysis, individual or group, are suggestive of those relationships at another and are reasonable justifications for hypothesizing their existence as a prelude to their empirical investigation, such investigation clearly being necessary to establish the existence of relationships across multiple levels of analysis.

At the group level—*group* referring to all potential culture-carrying aggregations larger than a single individual (e.g., departments, organizations, societies, etc.)—polychronicity is a value and belief complex that manifests itself in overt process strategies. Although the strength with which it is held may vary, as a *fundamental* process strategy—it is fair to say *the* fundamental process strategy—whichever position along the polychronicity continuum is normative in a culture is apt to be held strongly. This is because such process strategies are mainly learned unintentionally, usually unconsciously. Such learned knowledge is retained at the level of culture Edgar Schein (1992) labeled basic underlying assumptions. This deepest of cultural levels normally contains beliefs and values prescribing behaviors that are so taken for granted and institutionalized that they seldom rise to the conscious level for extensive examination and discussion (Schein 1992, p. 22). Consequently, they are difficult to change, and in this sense they are strongly held.

When values and beliefs from this level do surface, a typical reaction is, “I never thought of that before.” And while true of differences among cultures, this reaction is just as typical, perhaps more so, when people reflect on their own individual behaviors—which was the case for me when I learned about polychronicity for the first time while reading about it in Hall’s *The Dance of Life* (1983)—I hope the “Aha” did not disturb many people on the plane. Although the strength with which elements of culture are held may vary, individuals, even within the same culture, also vary in their choices of fundamental process strategies. This is not surprising, because few would argue that cultures produce clonelike members who possess absolutely identical values and beliefs. If they did, a culture could be studied confidently by simply inter-

viewing a single member and observing that member's behavior for a reasonable time. Though related, culture and personality do differ, making it necessary to study each in its own right.

At the level of individual beliefs and behavior, the nature of polychronicity as either a trait or a state becomes an important issue. If it is a trait, individuals will be much more consistent, even habitual, in the polychronicity process strategies they follow, more consistent than if polychronicity preferences are a state. But if polychronicity is a state, it will be affected much more by the contextual factors in an individual's environment, leading to much greater variability in patterns of polychronicity behavior. So the degree of stability or its converse, the amount of variability, would provide important clues about polychronicity's statelike or traitlike identity.

Such evidence has been provided in multiple forms. First, individuals have been asked about their preferences for being engaged in two or more activities simultaneously and have been able to complete psychometric instruments—questionnaires—designed to measure individual polychronicity (e.g., Kaufman, Lane, and Lindquist 1991a).¹ That people complete these instruments as readily as they complete other questionnaires indicates they are not baffled by them, which is at least modest evidence that people can recognize their own levels of polychronicity behaviors and values, which the questionnaires ask them to report.

A second and stronger piece of evidence comes from a study I conducted in which people in a large sample took the same polychronicity questionnaire nine days apart. The time interval allowed me to compare the similarity of their responses on the two questionnaires. Responses to the identical polychronicity scales on both questionnaires produced a substantial positive correlation: the higher an individual's score on the first questionnaire, the higher it tended to be on the second questionnaire.² So the people in this sample displayed a high level of stability in their perceptions of their own polychronicity.

Perhaps the strongest evidence comes from research that involved external observers. To study individual polychronicity, Jeffrey Conte, Tracey Rizzuto, and Dirk Steiner (1999) recruited one hundred pairs of friends from the student body at a large public university in the southern United States. The friends had known each other for at least one year, and part of the study required the pairs of friends (1) to complete a polychronicity questionnaire scale about themselves, and (2) to complete the same scale about each other. Conte, Rizzuto,

and Steiner found a statistically significant positive correlation between the observers' ratings and the participants' self-ratings: The higher people rated themselves on the polychronicity scale, the higher their friends rated them on it too. It is noteworthy that the ratings concerned behaviors that the researchers had not briefed the subjects about beforehand, and that the subjects had likely not thought much about, if at all, before they took part in the research. Hence the results of this study indicate (1) that people are aware of such behavior patterns even if they do not usually attend to them consciously, and (2) that such patterns display sufficient stability for observers to detect them, albeit unknowingly. The apparent existence of stable patterns of polychronicity process strategies revealed by these several studies favors the interpretation of individual polychronicity as a traitlike property, as assumed in Slocombe and Bluedorn (1999» P. 95).

These studies provide important evidence that individuals' patterns of polychronicity display at least modest degrees of stability, meaning that individual polychronicity is unlikely to be purely a statelike individual characteristic. However, by itself this evidence does not indicate how traitlike polychronicity is, meaning this matter (cliché ahead) requires further research. This issue will be revisited toward the end of this chapter, but now the discussion will shift to a presentation of research about polychronicity's relationships with other variables.

THE CORRELATES OF POLYCHRONICITY

The fundamentally different strategies described by points along the polychronicity continuum have some importance as descriptions of the way human beings act (e.g., Richardson's behavior). However, polychronicity can achieve genuine importance as a variable in the social sciences only if it is systematically related to other variables. Such relationships will be discussed in this section at the group and individual levels, polychronicity being both a cultural and an individual variable. Further, as discussed earlier, polychronicity can be considered a description of basic life strategies, so the assessment of the strategic options along the polychronicity continuum—that is, their effectiveness—will be addressed in the section following this one (“The Effectiveness of Polychronicity Strategies”). But in this section, polychronicity's relationships will be considered with other variables that are not normally used as effectiveness criteria.

Group-Level Relationships

Consistent with the usage employed earlier in this chapter, *group* refers to all culture-carrying aggregations larger than a single individual. In this section polychronicity's association with other variables will be examined in two types of groups: organizations and nations.

Nations. Much of Hall's work on polychronicity involved cultural differences among nations. Based on his own observations, Hall concluded that cultures in the Mediterranean world—southern Europe, the Near East, and northern Africa—were more polychronic than the cultures of northwestern Europe—Germany and England (Hall 1983). In the New World, Latin America was more polychronic than the United States (Hall 1983). Similarly, Usunier's (1991) results indicated that Brazil was more polychronic than France or Germany. Writing later and focusing on business culture, Richard Gesteland used a three-category system and classified Nordic and Germanic Europe, North America, and Japan as monochromé; the Arab world, most of Africa, Latin America, and south and Southeast Asia as polychronic; with Russia, much of eastern and central Europe, and southern Europe, China, Singapore, Hong Kong, and South Korea as in between (Gesteland 1999, p. 55). These sets of conclusions converge well. Thus at a very macro level, a fairly complete polychronicity map of the world's general and business cultures has been created. One should note, though, Catherine Tinsley's (1998) findings that American managers were significantly more polychronic than their counterparts in Germany and Japan. This does not contradict Gesteland's classifications, but it does provide details about variation among the countries he classified as monochronic.

At least one association has been noted for polychronicity at the level of national culture, and that is with proxemics, people's use of space as prescribed by their culture (Hall 1982, p. 1). In a conversation I had with Edward Hall (Bluedorn 1998), I raised the question about whether personal space was related to polychronicity. Hall agreed that it was, and he indicated that the two were negatively correlated, that the more polychronic the culture, the smaller the personal space distances it prescribed. For example, in a more polychronic culture, people would stand closer to each other while talking. So time and space are related in the social as well as the physical world.

Organizations. After nations, the next largest groups in which polychronicity has been studied are organizations. Unlike the research on national cultures

in which judgments about polychronicity were made based on observations and interviews, research on polychronicity as a component of organizational culture has mainly used psychometric scales, questionnaires, to measure polychronicity.³ This approach often involves asking a sample of group members to each complete a polychronicity scale about the group as each respondent sees it and then averaging their scores. This average is the group's level of polychronicity. From a methodological perspective, using this approach requires the researcher to demonstrate sufficient within-group agreement to justify aggregating the individual perceptions as just described (Klein et al. 2000, pp. 513-14). Marina Onken (1999) has demonstrated such agreement in her sample of companies, and I have been able to do the same in a study of dental practices that Gregg Martin and I conducted.⁴ These results demonstrate that such perceptions of polychronicity are a justifiable way of measuring polychronicity as a shared element of an organization's culture. Thus the following discussion of the relationship between organizational size and polychronicity is based on research that makes use of perceptions of the level of polychronicity in different organizations, albeit mainly by just one high-ranking corporate manager in each organization.

For about a two-decade-long period from the mid-1950s through the mid-1970s, organizational size stimulated a large amount of research in the organization sciences, even excitement (see Donaldson 2001; Scott 1975; and Slater 1985 for reviews). At a diminished level this interest persisted into the 1990s (Bluedorn 1993). But increasingly organizational size has come to be studied not as a variable in its own right but in the secondary role of a control variable. The following analysis of data from a project with which I have been involved goes against this trend.

In this project Stephen Ferris and I sent questionnaires to top executives (i.e., presidents/CEOs and COOs/executive vice presidents) of a large set of randomly selected, publicly traded companies in the United States. A representative sample of almost two hundred companies returned usable questionnaires, companies ranging in size from less than ten to over one hundred thousand employees (Bluedorn and Ferris 2000).

Although some results from this study have been reported elsewhere (Bluedorn and Ferris 2000), the results that follow are from original analyses performed for this chapter. The correlation between organizational size (number of employees) and polychronicity (the perception of the company's overall

polychronicity by either its CEO or a senior vice president) was not statistically significant. However, the logarithm (base 10) of organizational size was significantly correlated with company polychronicity, and it was a positive correlation: Larger firms were more polychronic.³

This result is surprising because the one theoretical discussion of a possible size-polychronicity relationship indicated that monochronic cultures would be more appropriate (i.e., more effective) in large systems whereas polychronic cultures would be more appropriate in small ones (Schein 1992, p. 108). Although it does not predict it explicitly, Schein's analysis anticipates a negative correlation between size and polychronicity; indeed his analysis was the reason for examining the size-polychronicity relationship, although other findings (Lee 1999) did contradict part of the basis for Schein's original conclusion.

It is hard to explain this relationship as an idiosyncrasy of a small or unique sample because the sample is so representative of publicly traded companies in the United States (Bluedorn and Ferris 2000). So the question becomes, why are greater degrees of polychronicity associated with increasingly larger organizations?

Perhaps at least part of the reason can be found in the results of the size research conducted over the last half century. It is known that as organizational size increases, so does the division of labor as manifested in the differentiation of both work units and individual positions (Donaldson 2001). Perhaps the scope of organizational tasks and functions increases as organizations become larger, but the increasingly differentiated structures organizations develop to deal with their growing scope of activities may not be proportionate to the new activities they add. The scope of work may increase faster than the division of labor. Thus departments and even individual positions may not be able to focus on a constant set of activities as the organization grows. New activities may be added that must be accomplished in the same amount of time as well as additional work if integration is to be maintained through a variety of integrating mechanisms (see Lawrence and Lorsch 1967 about integration and integrating mechanisms).

If this explanation of the polychronicity-size relationship is plausible, then polychronicity should be positively correlated with an emphasis on speed as organizational units and their members attempt to accomplish more within the same time period. To accomplish more in the same time frame, work will have to be performed faster, which may engender an increased emphasis on speed.

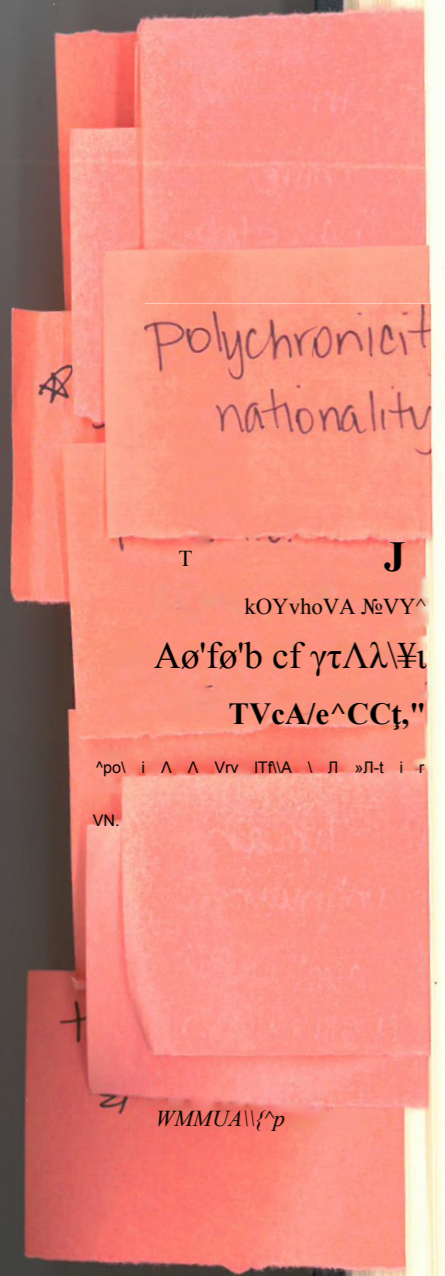
At the level of organizational culture, two tests have been conducted on the speed-polychronicity relationship. Onken (1999) studied organizational polychronicity in a sample of twenty firms from the telecommunications and publishing industries. Using the mean of completed polychronicity scales from each firm to measure organizational polychronicity, she found a statistically significant positive correlation: The more polychronic the company, the more it valued doing things fast. Similarly, I found a significant positive correlation between polychronicity and speed values in the sample of publicly traded companies described earlier in this section (see the organizational size-polychronicity discussion).⁶ Both studies reveal a positive correlation between polychronicity and speed values: The more polychronic the organization, the more doing things rapidly is valued in its culture. Although these consistent findings about the speed-polychronicity relationship support the explanation of the size-polychronicity relationship developed in this discussion, they are not a direct test of this explanation, which is, admittedly, speculative. More direct tests must await studies deliberately designed to investigate this explanation.

A small amount of research has been conducted on polychronicity at the department and small-group levels. But those studies involve polychronicity's relationships with variables whose story is the focus of Chapter 4, so those studies will be discussed in that chapter.

Individual Polychronicity

Individuals display polychronicity differences, even within national or organizational cultures. Just as cultures vary from one another in their polychronicity, so do individuals vary within each culture, albeit potentially around different averages. As such, polychronicity is no different from any other group value or belief. Few would argue that cultures can transmit their values to their members so unfailingly that, except for measurement error, within-group variance would become zero. Such a view is contrary to everyday experience and to empirical research. Indeed, Usunier (1991) found significant differences within nations for several temporal aspects of culture, including polychronicity. So this discussion will now examine such differences and variables with which they are associated. The discussion will be divided into two types of variables associated with polychronicity: demographic and psychological variables.

Demographic Characteristics. Three demographic variables have been investigated as correlates of polychronicity: gender, age, and educational level. Of



these three, education (Slocombe 1999) and gender (Hall 1983; Manrai and Manrai 1995, p. 119) have received at least a small amount of theoretical attention, with Hall (1983, p. 52) having concluded that more monochronic time was male time and more polychronic time was female time. Thus it would seem to follow—if Hall was correct—that on average women would be more polychronic than men, a conclusion that will now be examined.

Hall may be correct, but the results from thirteen studies provide mixed findings about the relationship between gender and polychronicity. All of the studies used questionnaire scales to measure polychronicity, and in five of them women were more polychronic than men (Bluedorn 2000c; original analysis of a large student sample for this chapter). However, two studies found men to be more polychronic (Conte, Rizzuto, and Steiner 1999; original analysis of a sample of food service managers for this chapter), and six studies found no statistically significant differences between men and women in their respective samples (Conte 2000; Conte, Rizzuto, and Steiner 1999; Kaufman, Lane, and Lindquist 1991a; Palmer and Schoorman 1999; and original analyses of data sets reported here for the first time: the dental practice personnel described earlier and a sample of college students).⁷

Although the bulk of the statistically significant relationships indicate that women are more polychronic than men, the overall results are very mixed, with the modal finding being no significant association between polychronicity and gender. If such predispositions were as fundamental as Hall believed they were—he labeled them “preconscious” (1983, p. 52)—one would anticipate a series of consistent correlations across a variety of populations. Instead, nearly half the correlations were not statistically different from zero (i.e., no relationship), and the significant correlations were not all in the same direction (i.e., in some samples women were more polychronic, whereas in others men were more polychronic). At a minimum these results indicate that gender is not consistently related to polychronicity; they even question whether there is a gender-based *predisposition* to polychronicity at all. And a similar albeit stronger conclusion can be reached about a possible relationship between polychronicity and age.

To the best of my knowledge, no one has suggested a relationship between individual age and polychronicity. It may be that no one has suggested such a relationship because it may not exist. Three studies have examined age over a large enough range of ages to reasonably test for an age-polychronicity relationship, and all three studies failed to produce statistically significant rela-

tionships (Kaufman, Lane, and Lindquist 1991a; the sample of dental practice personal mentioned earlier in this chapter; and the sample of food service managers also mentioned before). Admittedly, all three of these samples involve people over a wide range of the *adult years*, people in their twenties and much older, so if there is a relationship between age and polychronicity, it would have to involve changes that occur between youth and adulthood, a possibility that none of the three samples allows to be tested because all three were limited to adults. (None contained anyone over sixty-five either.) However, for the pre-retirement adult years, there appears to be no relationship between age and polychronicity.⁸

To this point things do not look promising for relationships between demographic variables and polychronicity. Nothing consistent seems to be happening between gender and polychronicity, and between polychronicity and age nothing seems to be happening at all—at least for the adult years. Both gender and age are, of course, demographic variables based on biological differences, so things may be more promising when demographic variables based on social rather than biological factors are examined. Biology is not destiny, at least as far as polychronicity is concerned. But sociology may be.

In their sample of 310 randomly selected adult residents of a residential neighborhood adjacent to Philadelphia, Carol Kaufman, Paul Lane, and Jay Lindquist (1991a) found that polychronicity was positively correlated with respondents' levels of formal education: the more formal education, the more polychronic the respondent. Kaufman, Lane, and Lindquist noted that respondents who reported having college or professional degrees scored highest on the Polychronic Attitude Index, the study's measure of polychronicity (1991a, p. 397). Because of the broad-based nature of the sample, and the well-designed method of ensuring its representativeness, reasonable confidence can be placed in the generalizability of these results—at least for the United States—despite their being based on a single sample.

But why are higher levels of education apparently associated with higher levels of polychronicity? If polychronicity is indeed a traitlike personality variable, does this imply that people who are more polychronic are apt to seek out more formal education? Or if personality continues to develop into early adulthood, might not the higher levels of formal education develop an individual's preference for engaging more tasks at the same time as well as the individual's ability to do so? Or perhaps, as Thomas Slocombe proposed (1999, pp. 318-19),

people who acquire greater amounts of formal education may tend to have jobs that are more likely to require them to behave polychronically, which leads them to develop more polychronic patterns of behavior. Or might *all* of these processes be operating? And does this relationship hold in other countries, especially in countries that differ significantly from the United States in the polychronicity of their cultures? For example, in countries such as Brazil or Mexico, whose cultures are more polychronic than that of the United States, would greater individual polychronicity still be associated with higher levels of educational attainment? At present these questions remain unanswered.

Psychological Variables. The preceding discussion indicates that polychronicity is related systematically to amount of formal education. In this section similar relationships will be explored with psychological characteristics, including personality attributes, observable behaviors, and perceptions of organizational attractiveness.

An important contemporary trend in personality theory has been the development of a multidimensional model of human personality, the "Big-Five" model (Digman 1990). And if polychronicity is a traitlike variable, an important question to examine is how polychronicity is related to the big five dimensions—if it is related to any of them at all. Jeffrey Conte (2000) addressed this issue directly in his study of 181 train operators who worked for a large metropolitan transit authority. Conte found that polychronicity was not significantly related to emotional stability, agreeableness, or intellectance (openness to experience), but it was negatively correlated with conscientiousness and positively correlated with extraversion (1*extroversion* in everyday language) (Haase, Lee, and Banks [1979, p. 273] report a positive correlation with extraversion too), both correlations being statistically significant. Thus the more polychronic the individual, the less conscientious and more extraverted the person is.

Conte also found that individual polychronicity was significantly related to two very important organizational behaviors: lateness and absenteeism. And these relationships persisted after controlling for respondents' gender, work experience, cognitive ability, extraversion, and conscientiousness. So the greater the individual's polychronicity, the more frequently the person was late and absent.

Another approach to personality is the well-known Type A-Type B distinction (Friedman and Rosenman 1974). Jeffrey Conte has also investigated polychronicity's relationship with this aspect of personality, this time with col-

leagues Tracey Rizzuto and Dirk Steiner (1999). Focusing their work on two health-related dimensions of the Type A-Type B distinction, these researchers found that polychronicity was positively correlated with both dimensions: The more polychronic the individual, the greater the striving for achievement and the greater the individual's general impatience and irritability, both correlations being statistically significant.

The Type A personality construct has received a great deal of attention because of its apparent relationship with health-related factors such as stress and heart disease (Friedman and Rosenman 1974). Nevertheless, despite polychronicity's positive relationships with two key Type A dimensions, Conte, Rizzuto, and Steiner (1999) found no significant correlation with stress. As they noted, the absence of a correlation with stress is consistent with Kaufman, Lane, and Lindquist's finding (1991a) of a negative correlation between polychronicity and role overload—the greater the polychronicity, the less the individual feels overloaded by work tasks—and Kaufman, Lane, and Lindquist's interpretation of this relationship that polychronicity may be an adaptive response to busy schedules. It should be noted that this interpretation is consistent with Mintzberg's idea cited earlier that the realities of work lead managers "to develop a particular personality" (1973, p. 35).

To further examine the possibility that higher levels of polychronicity may be a way of coping with busy schedules, I conducted new analyses for this chapter using data from the dental practice study discussed earlier. In this study dental practice employees, including the dentists, completed a questionnaire scale about their individual polychronicity as well as a measure of stress. As in Conte, Rizzuto, and Steiner's study (1999), the correlation between individual polychronicity and stress in these data was not statistically significant. However, the picture changed when I divided the sample into the two categories of (1) dentists and (2) all other practice employees. The correlation within the all-other-practice-employees category remained nonsignificant, but in the subsample of dentists, a very interesting and statistically significant positive correlation emerged. There was no relationship between polychronicity and stress among nondentists in the practices, but among dentists, the more polychronic the individual dentist, the less the dentist experienced stress (see Figure 3.2). And after controlling for age, gender, and number of years worked in the current dental practice, this difference between the two categories not only persisted but became more extreme.⁹

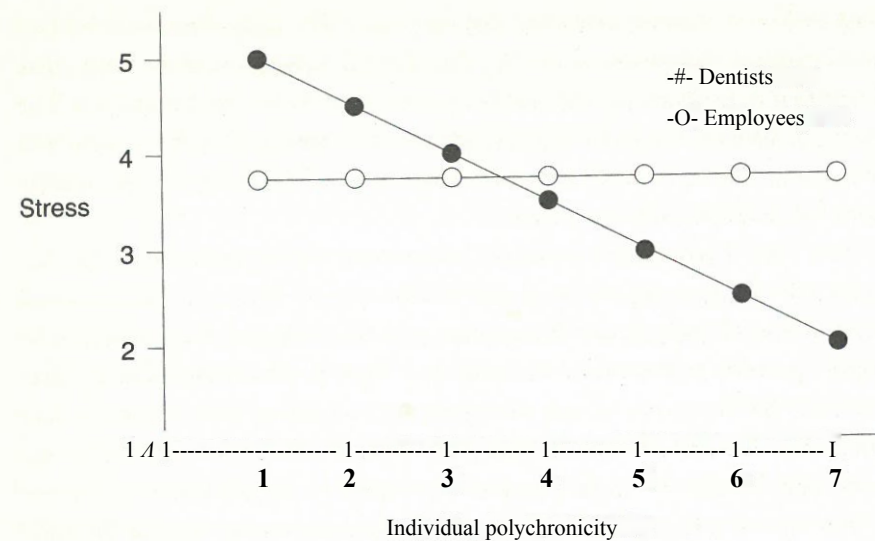


FIGURE 3.2. Relationship between polychronicity and stress for dentists and employees in a sample of dental practices (regression lines)

Why is polychronicity unrelated to stress for everyone in these practices except the dentists themselves? Perhaps the jobs performed in the two categories differ in fundamental ways. Nondentists' jobs may not require constant shifting to and fro among a variety of tasks in the same way that the dentists must move back and forth among several patients undergoing a variety of procedures. In other words, the way the workflow is structured in most American dental practices may require the dentist to work much more polychronically than the other practice employees. If so, by analogy with the positive outcomes associated with congruence between individual and work-unit polychronicity (Slocombe and Bluedorn 1999), it follows that if a job must be performed in a very polychronic manner, the more polychronic the role holder is, the more readily and comfortably, and the less stressfully, it can be performed.

The issue of congruence between individuals and groups will be dealt with in depth in Chapter 6, so it will not be explored further here, but Edgar Schein's example of polychronic time patterns in the relatively monochronic United States is suggestive of the explanation just presented for polychronicity's negative correlation with stress among dentists. Schein noted, "A doctor or dentist, for example, may simultaneously see several patients in adjacent offices"

(1992, p. 108), an indication that the dentist's job, at least as typically practiced, is quite polychronic relative to much work in the United States.

This interpretation of the relationship between polychronicity and stress among dentists is also consistent with Benjamin Schneider's (1987) Attraction-Selection-Attrition (ASA) theory. According to this theory, people and organizations with similar values will seek each other out and then be more likely to remain associated than people and organizations who are less similar. The dental findings suggest that polychronicity might be a value-based behavior pattern that leads individuals to seek out certain occupations and avoid others. But is polychronicity a complex of values, beliefs, and behaviors that makes some organizations more attractive than others? After all, similarity of values or beliefs that hold little importance to the individual or organization seems unlikely to result in significant mutual attraction.

To address this question I collected data to investigate the possible attraction between individual and organizational polychronicity, data that also revealed relationships between polychronicity and several other personality variables (Bluedorn 2000c). Using scenarios presented in Bluedorn et al. (1999) to represent high- and low-polychronicity organizations, respectively, respondents in two samples were asked to rate each organization according to how attractive it was to them as a potential employer. Respondents also completed a polychronicity questionnaire about themselves.

As anticipated, if polychronicity were to matter enough to generate an attracting force, respondents' individual polychronicity scores were positively correlated with the attractiveness of the high-polychronicity scenario—the more polychronic the respondent, the more attractive the high-polychronicity organization appeared—and negatively correlated with the low-polychronicity scenario—the more polychronic the respondent, the less attractive the low-polychronicity scenario appeared. And these relationships persisted in both studies (one sample comprised over two hundred college students, the other over three hundred) after controlling for the effects of age, gender, grade point average, orientation to change, propensity to creativity, locus of control, and tolerance for ambiguity (Bluedorn 2000c). Thus the polychronicity of a potential employer, if perceivable, appears to be a significant attribute to potential employees.

While investigating polychronicity as a potential attractor, I also examined the relationships between individual polychronicity and several of the control

variables (Bluedorn 2000c). The results produced important findings because two of the personality variables revealed consistent relationships across multiple samples, relationships that persisted after the effects of several other variables were statistically controlled.

First, I found that after controlling for age, gender, grade point average, locus of control, propensity to creativity, and tolerance for ambiguity, a positive relationship persisted between polychronicity and orientation to change. The more polychronic the respondent, the more favorable the respondent was toward change in general.

The second important finding concerned polychronicity and tolerance for ambiguity, which is "a range, from rejection to attraction, of reaction to stimuli perceived as unfamiliar, complex, dynamically uncertain, or subject to multiple conflicting interpretations" (McLain 1993, p. 184). Tolerance for ambiguity was positively correlated with polychronicity, and these positive relationships persisted after controlling for the other variables (Bluedorn 2000c). These results replicate an earlier finding reported by Haase, Lee, and Banks (1979, p. 272) and indicate that the more polychronic people are, the more tolerant they are of ambiguity.

So individual polychronicity is related to several individual variables. Relative to less polychronic people, more polychronic people appear to have more of the following:

- Extraversión (extroversion)
- Favorable inclination toward change
- Tolerance of ambiguity
- Formal education
- Striving for achievement
- Impatience and irritability
- Frequency of lateness and absenteeism

Those same people appear to have less of the following:

- Conscientiousness
- Stress (only in some jobs)

But, as will be revealed in the following section, these are not the only individual variables to which individual polychronicity is related.

THE EFFECTIVENESS OF POLYCHRONICITY STRATEGIES

Polychronicity was described earlier as a continuum of life process strategies, which raises a number of important questions. For example, is a single strategy from the polychronicity continuum optimal for individuals and groups? This seems unlikely, as nearly a half century of research in the organization sciences indicates that a strategy's success is highly contingent on a variety of factors (Bluedorn and Lundgren 1993; Chandler 1962; Donaldson 2001, pp. 11-16 and 221-25). So the question should be restated: Which polychronicity strategies work best for individuals in which situations? And which polychronicity strategies are associated with the highest levels of group effectiveness?

Effectiveness has traditionally been defined as "the degree to which a social system achieves its goals" (Price 1972, p. 101). Yet there is no reason to limit the effectiveness concept to social systems such as organizations and work groups, because individuals have goals, and the extent to which they achieve them can be assessed as well. Thus this discussion will first consider polychronicity strategies and individual effectiveness, then group-level polychronicity and effectiveness.

Individual Effectiveness

As I have noted elsewhere (Bluedorn 1980), a problem with conceptualizing effectiveness, individual or group, in terms of goals is that almost anything can be a goal. Nevertheless, many individual outcomes are frequently considered desirable, such as having good health and succeeding in and enjoying one's work; hence such outcomes are likely to become individual goals, and polychronicity's relationship with several of these outcomes will be considered in this discussion.

Early in the twentieth century, Frank Gilbreth, the motion study pioneer, made an important discovery about polychronicity and health. In his constant quest to do things efficiently, Gilbreth attempted to shave with two razors simultaneously, two *straight* razors. But he abandoned the attempt because he lost more time applying bandages to the cuts this technique produced than he saved by shaving with the two razors (Gilbreth and Carey 1948, pp. 3-5). So, as far as shaving is concerned, even a moderately polychronic strategy is ineffective as judged by the criteria of total time taken and physical safety. But the self-inflicted damage Gilbreth incurred was minor by most standards, and es-

pecially so compared with the results of a form of polychronic behavior that developed nearly a century after Gilbreth concluded his ill-fated experiment with personal hygiene.

The results are traffic accidents, which are a major cause of human injury and death, so behaviors that appear to be related to accident frequency have major public policy implications. And one such behavior is a new form of polychronicity: using a cellular phone while driving. Several countries have made this behavior illegal, and as an important public health study shows, with very good reason.

Donald Redelmeier and Robert Tibshirani (1997) studied 699 drivers who owned cellular telephones and who had motor vehicle accidents that resulted in substantial property damage (but no personal injury). They found that using a cellular telephone while driving a motor vehicle was associated with a quadrupling of the risk of a collision during the period of the call with no statistically significant difference between drivers who used handheld or hands-free cellular phones. As Redelmeier and Tibshirani noted, "This relative risk is similar to the hazard associated with driving with a blood alcohol level at the legal limit" (1997, p. 456). Even the modest degree of polychronicity involved in performing these two tasks simultaneously has important negative consequences, so driving, like shaving, is a task best performed monochronically.

The preceding two examples could easily lead to the erroneous conclusion that even modest polychronic life strategies generally lead to negative health outcomes. But a series of studies linking the density of social networks to a large set of health outcomes would lead to exactly the opposite conclusion—density of social networks basically being the number of different types of social relationships (e.g., relationships with spouses, children, fellow employees, friends, etc.) in which a person is actively engaged. Starting with fewer instances of the common cold (Cohen et al. 1997), a greater diversity of social networks has been associated with lower levels of depression (Cohen and Wills 1985), heart disease and cancer (Vogt et al. 1992), and mortality (Berkman and Syme 1979). And if the difference in density of these social networks is great enough, the mortality risk becomes comparable to the differential between smokers and nonsmokers (House, Landis, and Umberson 1988). Because active engagement in multiple forms of social relationships indicates varying degrees of polychronicity—the more forms actively engaged, the greater the polychronicity owing to a greater amount of moving back and forth among them over

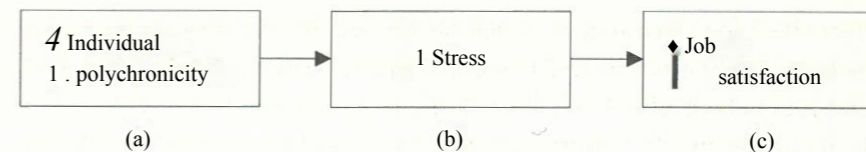


FIGURE 3.3. Model of the relationships among polychronicity, stress, and job satisfaction for dentists in a sample of dental practices

time—these findings reveal a salutary effect on health of polychronic life strategies regarding social relationships.

Overall, these health-related findings reveal a mixed set of results. Sometimes monochronic behavior patterns are best, sometimes polychronic. This mix of findings implies that no one level of polychronicity will produce the best results for all outcome variables. Consequently, each potential relationship must be investigated individually, so polychronicity's relationships with several other individual outcome variables will be examined.

Earlier in this chapter the relationship between polychronicity and stress was described for a sample of dentists. Revisiting that relationship is worthwhile here because it is part of a simple three-variable chain relevant to this discussion of polychronicity and individual effectiveness. Since adult Americans spend more waking time at work than involved in any other activity (Robinson and Godbey 1997, pp. 321-23), how much a person enjoys or receives gratification from that time (i.e., job satisfaction) is an important individual effectiveness criterion. And in the subsample of dentists, although polychronicity was positively correlated with job satisfaction, the correlation was not statistically significant. But this relationship is not the main point of interest. As presented earlier, the correlation between the dentists' polychronicity and stress was positive and statistically significant: The more polychronic the dentist, the lower the dentist's stress. Polychronicity, stress, and job satisfaction are three variables, but only two of the relationships have been reported. The third is the correlation between stress and job satisfaction, which is negative and statistically significant: the lower the stress, the higher the job satisfaction. And the diagram in Figure 3.3 presents a very reasonable albeit simple model of the relationships among these three variables.

Noting that this process is limited to just the dentists among dental practice employees, according to the diagram in Figure 3.3, polychronicity has a direct effect on stress, and stress has a direct effect on job satisfaction, but there is no

direct effect of polychronicity on job satisfaction. So as a process, increasing amounts of polychronicity lead to reduced levels of stress, and reduced levels of stress lead to higher levels of job satisfaction—among the dentists in the sample. By having an effect on stress, polychronicity still has an impact on the individual effectiveness criterion of job satisfaction, albeit indirectly.¹⁰

Another index of individual effectiveness is job performance, which is important from both the individuals' and the organizations' perspective. Researchers have examined polychronicity's relationship with job performance for two occupational categories: college students and college professors. For a college student, the typical index of performance is the grade point average (GPA), and polychronicity's relationship with GPA has been examined in student populations at two universities. In a sample of 161 undergraduates at a large public university in the southern United States, Conte, Rizzuto, and Steiner (1999) reported a nonsignificant correlation. And I reported the results of five tests of this relationship on large samples of undergraduate students at the University of Missouri-Columbia (Bluedorn 2000c). One of these five tests produced a statistically significant positive correlation; the other four tests revealed nonsignificant correlations. I also tested this relationship in two samples that were not reported in Bluedorn (2000c), but neither correlation was statistically significant.¹¹ Overall, out of eight tests of the possible relationship, only one produced a significant correlation, a very modest one; the other seven correlations were all nonsignificant. These results indicate there is no consistent relationship between polychronicity and undergraduate college student GPA, perhaps no relationship at all, so everyone can breathe a sigh of relief!

As for the college professors, fewer tests have been conducted, but both that have been show the same significant relationship. In the first test, which was not conceptualized in terms of polychronicity, Taylor et al. found a significant positive correlation between the extent to which college faculty "engaged in multiple, concurrent, research and writing projects" (1984, p. 408) and their productivity (an index composed of number of research books, chapters for edited books, and articles in professional journals). Being "engaged in multiple, concurrent" projects is a way to describe someone behaving polychronically. Similarly Richard Frei, Bernadette Racicot, and Angela Travagline (1999) reported an even larger positive correlation between the same two variables, albeit their productivity index included a broader range of research activities and outlets.¹² In both studies the two concepts and their measures were fortunately

very similar, which allows their results to be compared directly. Thus behavioral polychronicity—number of concurrent research and writing projects—is positively related to college faculty research productivity: the more behaviorally polychronic the faculty member, the higher the research productivity.

Group Effectiveness

Several studies have examined the relationship between group polychronicity and performance, most of them at the organizational level. And although several scholars have conceptualized their research explicitly as polychronicity research, others have not. For example, James McCollum and J. Daniel Sherman (1991) studied sixty-four companies with matrix structures and found that the highest levels of effectiveness occurred in companies where the highest percentage of research and development personnel were assigned to two projects rather than either to one project or to three or more projects, which suggests that a moderate level of polychronicity may be better than either high or low levels in companies with matrix structures.

Another example is provided by Kathleen Eisenhardt's intensive case studies of eight microcomputer firms, studies that led her to conclude, "The greater the speed of the strategic decision process, the greater the performance [of organizations] in high-velocity environments" (1989, p. 567). This is relevant to polychronicity's impact on organizational performance because Eisenhardt's data also led her to conclude, "The greater the number of alternatives considered *simultaneously*, the greater the speed of the strategic decision process" (emphasis added; 1989, p. 556). Thus dealing with decision alternatives polychronically leads to a faster pace in the process of strategic decision making—which given the relationship Eisenhardt found between speed of decision making and organizational performance should at least indirectly lead to better organizational performance.

This relationship is supported by experimental research on small-group decision making (Weingart, Bennett, and Brett 1993), which found a relationship between outcome quality and considering issues simultaneously (polychronically) rather than sequentially (monochronically). Moreover, William Judge and Alex Miller replicated Eisenhardt's work and found "strong support for the proposition that the number of alternatives simultaneously considered is a critical determinant of decision speed regardless of environmental context" (1991, p. 457). They also replicated the relationship between speed of decision

making and organizational performance, but they discovered it was limited to organizations in high-velocity environments. These two studies suggest an indirect relationship between polychronicity and performance through polychronicity's impact on speed of decision making, although this relationship would be limited to high-velocity environments. (See Chapter 4 for more on the polychronicity-speed relationship).

Marina Onken (1999) conducted the first research to investigate the relationship between organizational performance and polychronicity with polychronicity explicitly conceptualized as such. She found statistically significant positive correlations between a company's polychronicity and both return on assets and return on sales: the more polychronic the company's culture, the better its performance as measured by these two performance indicators. But she did not find a statistically significant relationship between return on equity and polychronicity, although the correlation was in the predicted (positive) direction. Nevertheless, because her sample was so small (twenty companies), these results might change in larger, more broadly drawn samples.

And they did. Working with a much larger, more representative sample of American companies (the national sample of organizations I used to investigate the size-polychronicity relationship discussed earlier in this chapter), I found that a firm's polychronicity was not significantly related to either its return on assets or its return on sales. But a company's return on equity was positively correlated with its polychronicity, meaning the more polychronic the firm, the better its return on equity. Thus, as interpreted with customary levels of statistical significance, the results from the national sample data contradicted all three of Onken's findings: She found significant positive correlations between polychronicity and returns on assets and sales, whereas I did not in the national sample data, and although I found a statistically significant correlation between polychronicity and return on equity, Onken did not.¹³

Taken together, Onken's (1999) findings and mine from the national sample of organizations do not reveal a consistent pattern of relationships between polychronicity and organizational financial performance. However, they do suggest that such relationships may exist and deserve additional investigation.

Distinctive Competencies

Across the group and individual levels, various polychronicity strategies have been associated with desirable outcomes. Sometimes a high level of polychro-

nicity was associated with the best outcomes, but in other circumstances a low level of polychronicity seemed to be most effective. Some evidence even indicated that a moderate level of polychronicity was best for producing some outcomes. Overall, these findings suggest that high and low levels of polychronicity each have their virtues, their own distinctive competencies.

The potential benefits of the monochronic strategy seem clearer, but that may be because I and many readers grew up in the monochronic United States. Nevertheless, a monochronic strategy confers the advantages of *offocus*, including efficiency. As such, a monochronic strategy should generate a greater depth of involvement with a decision or activity, hence a more thorough knowledge of it, at least in the short term. So when substantial focus is required, such as in the task of driving a car, or when many details are involved, a monochronic strategy may be best.

But a major disadvantage of this strategy is that the events or tasks engaged monochronically are less likely to be well integrated with other tasks and activities. Moving back and forth among several tasks and activities might result in some cross-fertilization as well as greater integration among them, but at a minimum the more polychronic strategy should keep people more aware of the status and implications of all activities engaged. And this appears to be a key effectiveness factor for the managers of the successful project portfolios studied by Shona Brown and Kathleen Eisenhardt (1997).

Brown and Eisenhardt studied change and project management in computer firms and found that firms with less successful project portfolios demonstrated very low amounts of communication across projects. This was part of the context in which projects were planned, divided into small tasks, and then executed in a "structured sequence of steps" (1997, p. 14). A structured sequence is, of course, a monochronic strategy, and the low amount of communication is consistent with the proposition that monochronic strategies generate less awareness of other activities and tasks. One of the managers in their study remarked, "Most people only look at their part" (p. 14); another, "The work of everyone else doesn't really affect my work" (p. 14). These responses contrasted with the pattern of work in the companies that managed their portfolios of projects more successfully, which Brown and Eisenhardt characterized as "iterative" (p. 14). Iterative (repetitive) patterns are suggestive of the back and forth flow of polychronic strategies.

Another disadvantage of a monochronic pattern is its failure to provide either

the timely feedback or the flexibility so that a flawed or problematic part of a project or activity can be corrected before the entire project is completed. Eisenhardt (1989, p. 558) interpreted Barry Staw's (1981) work on escalation of commitment to mean that, at least in decision making, considering multiple alternatives simultaneously reduces the escalation of commitment to any single alternative, whereas considering options sequentially does the opposite. Escalating commitment, of course, reduces the motivation to even look for trouble, and it also reduces flexibility about options, an interpretation consistent with descriptions of monochronic strategies. For the monochronic approach has been described as being associated with "strict planning" (Kaufman-Scarborough and Lindquist 1999, p. 289) and with a tendency to "adhere religiously to plans" (Hafl and Hall 1990, p. 15). And in the case of the computer companies Brown and Eisenhardt studied, the sequential structure of project work added to the psychological mechanisms that produce escalating commitment.

Thus Brown and Eisenhardt noted that at the less successful companies it was difficult to adjust projects in changing conditions because "once started, the process took over. It was hard to backtrack or reshape product specifications as circumstances changed" (1997, p. 14). (The similarity of this statement to Von Moltke's rebuff of the Kaiser is almost eerie: "once settled, it [the plan] cannot be altered"; see Chapter 1). Conversely a more polychronic strategy, which by definition allows for the ebb and flow of an iterative pattern, increases the chances that people will more readily become aware of a problem and thus would not have as far back to go in order to correct it. But with a monochronic strategy, the distance back may be too great to undertake any modifications. Indeed, a monochronic strategy may lead to a greater degree of satisficing—picking a decision that simply meets a satisfactory level on one or more criteria (March and Simon 1958, p. 169)—than would a polychronic approach to decision making. Simultaneous consideration of alternatives not only reduces the escalation of commitment to a single option but also increases the speed of decision making (Eisenhardt 1989). As such there is less time pressure to make a decision, hence less reason to satisfice at lower and lower levels. Thus a polychronic decision-making strategy seems likely to produce more optimal decisions—or at least to seek them.

If the preceding analyses seem to overwhelmingly favor polychronic strategies, it is well to note that polychronic strategies have their downside too. For example, an unlimited flexibility could well lead to "unproductive dithering,"

a potential problem of polychronic strategies (Bluedorn, Kaufman, and Lane 1992, p. 23). The point is that both strategies have their distinctive strengths and weaknesses and that it is best not to let one's personal and cultural biases lead to the conclusion that one strategy or the other is *always* best. Both have their virtues and vices, and the best strategy is to recognize them.

SUGGESTIONS FOR THE THIRD GENERATION

Empirical studies of polychronicity are poised to enter their third generation. Edward Hall's work (e.g., Hall 1981b, 1983; Hall and Hall 1990) constitutes the first generation, and most of the other research cited in this chapter constitutes the second. Identifying a third generation implies a qualitative difference from what has gone before, and several possibilities suggest themselves for differentiating future polychronicity research from that conducted by the first two generations.

The core of polychronicity's formal definition is the extent to which people prefer to be engaged in two or more tasks or events simultaneously (Bluedorn et al. 1999). Although none of the conceptual work on polychronicity addresses the types of tasks engaged simultaneously, the work-design distinction between job enlargement and job enrichment (George and Jones 1999, p. 221) suggests that the types of tasks involved in a job matter in many ways (enlargement mainly involving similar tasks; enrichment, dissimilar tasks). So when considering behaviors along the polychronicity continuum, does it matter whether the tasks are similar, or whether they vary along one or more dimensions? Put another way, is a person who engages simultaneously in several different tasks more polychronic than someone who engages simultaneously in the same number of similar tasks? Or are both people equally polychronic? These questions suggest the model presented in Figure 3.4.

The typology presented in Figure 3.4 results from dichotomizing two continua—number of tasks engaged simultaneously and degree of difference among the tasks engaged—and cross-classifying them. The result is four types of behavior patterns: quantitative polychronicity and monochronicity, and qualitative polychronicity and monochronicity. A quantitatively polychronic pattern involves engaging several *similar* tasks simultaneously, whereas a quantitatively monochronic pattern involves engaging a task and completing it and then moving on to another *similar* task. Conversely, the qualitative polychronicity pat-

| | | Differences among tasks | |
|--|------|-----------------------------|----------------------------|
| | | Low | High |
| Number of tasks engaged simultaneously | High | Quantitative polychronicity | Qualitative polychronicity |
| | Low | Quantitative monochronicity | Qualitative monochronicity |

FIGURE 3.4. Forms of polychronic and monochronic patterns of behavior

tern involves engaging multiple *dissimilar* tasks simultaneously; the qualitative monochronic pattern, engaging a single task and completing it before engaging another but *dissimilar* task. And the question is, does the addition of the quantitative-qualitative task distinction add any explanatory power to theoretical statements about polychronicity's relationships with other variables?

Evidence that this distinction does make such a difference is provided in at least one set of studies already discussed in this chapter. In fact, it was these studies that led me to propose this typology of polychronicity patterns. The findings linking polychronicity in social relationships with several important health outcomes (i.e., colds, heart disease, cancer, mortality), all found differences related to the number of *types* of social relationships people engaged in *regularly*. The more types of social relationships engaged in regularly, the more favorable the health outcomes (i.e., less probability of contracting a disease or dying).

Of particular importance for the polychronicity typology just introduced is Cohen et al.'s (1997) remarkable—remarkable because participants allowed the researchers to deliberately expose them to a cold virus via nasal drops—experimental investigation of both the absolute number of social relationships and the number of *types* of social relationships and their relationship to colds. The key finding in support of the quantitative-qualitative distinction made in the typology deserves to be presented in the authors' own words: "In contrast to the diversity of the network, the total number of network members was not associated with colds. . . . Moreover, entering the number of network mem-

bers into the first step of the regression equation along with standard controls did not reduce the association between diversity and colds" (Cohen et al. 1997, pp. 1942-43). Diversity of the network is a reference to the number of types of relationships engaged in regularly and repetitively (at least once every two weeks). Thus these results suggest that qualitative polychronicity was negatively related to the probability of contracting a cold: the more different *types* of social relationships people were engaged in, the lower their chances of contracting a cold. But simply the more social relationships people engaged in had no impact on the probability of contracting a cold. Qualitative polychronicity mattered, quantitative polychronicity did not.

Examining qualitative and quantitative forms of polychronicity requires a way to determine how similar tasks and events are, otherwise one would be unable to say whether multiple tasks differ from each other qualitatively. Unfortunately, no general method for classifying tasks and events has been developed that seems adequate for examining these questions about polychronicity, although some concepts and models might provide elements for such a classification scheme.

For example, the well-known job characteristics model (Hackman and Oldham 1976) offers several dimensions that might be useful for describing a task or event. Among the possible characteristics suggested by this model, skill variety seems the most promising because it seems most directly related to polychronicity. Skill variety is the degree to which a job requires a variety of different activities in performing work, and the activities themselves involve the use of a number of the individual's different skills and talents (Hackman and Oldham 1976, p. 257). The reference to "variety of different activities" suggests qualitative differences in work or tasks, as does the phrase "different skills." So skill variety, if it can be extended to cover life's tasks and events in general, might be a way to classify types of tasks and events as qualitatively similar or different.

Perhaps such a modified skill-variety approach could be augmented by or combined with part of Carol Kaufman and Paul Lane's (1996, pp. 139-41) approach to describing consumer product use. They described product use according to whether the use was monochronic or polychronic, and whether the use involved a single sense (e.g., vision) or multiple senses (e.g., vision and hearing). Thus how many senses are involved in a task or event might be combined with elements of the skill-variety dimension (e.g., number of different skills

4

Polychronicity

Polych

Per PterlbfvcV

Satisficing in making

used and the variety of specific activities) as an additional attribute to determine how similar or different tasks and events are. But until a general method is developed for evaluating the degree of differences among life's tasks and events, results such as Cohen et al.'s (1997), though suggestive, will remain limited to each study's unique domain and methods.

But regardless of whether polychronicity's relationships with other variables is contingent on one or more task and event dimensions, other important questions remain about its fundamental nature, especially its psychological foundations. And three of these questions seem especially salient.

The first of these questions involves an assumption made implicitly almost from the beginning of polychronicity research: Polychronicity is more likely to be a trait, or at least traitlike, than it is to be statelike (e.g., Slocombe and Blue-dorn 1999, p. 76). But how traitlike is it? How much flexibility can people display before experiencing stress from a too uncomfortable polychronicity pattern? As mentioned in the discussion of the polychronicity-education findings, do more polychronic people seek out more education, or does exposure to more education somehow lead to more polychronic preferences and behaviors, perhaps by leading people to jobs requiring more polychronic behavior as proposed by Slocombe (1999)? Of course, a third possibility is that both processes could be operating for each relationship.

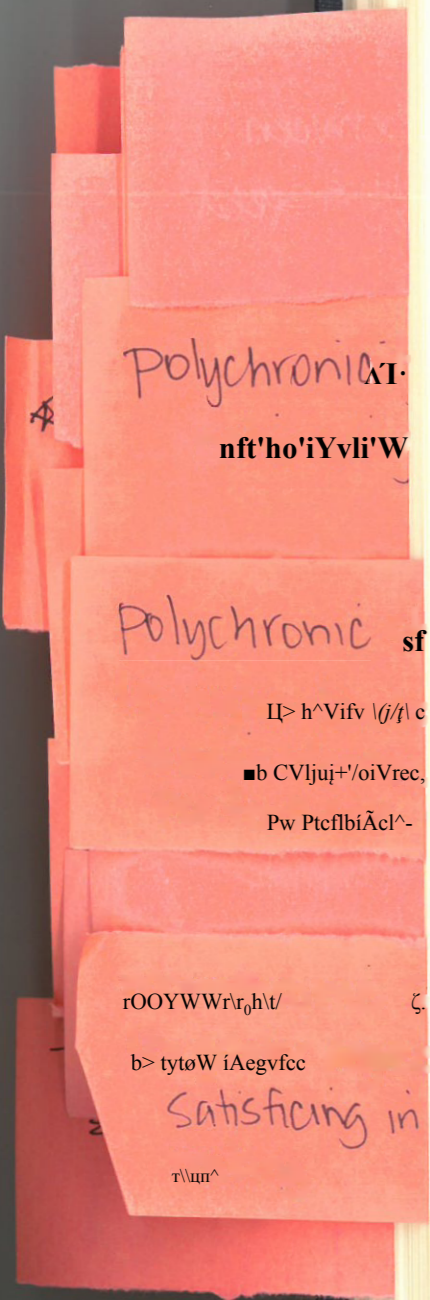
But even if something is a trait, this does not imply that an individual's behavior patterns will never vary from the mean, that the standard deviation is zero. Instead, variability will be observed, perhaps even variability in the preference components as well as in overt behavior, and such variability deserves to be studied. For example, can some people vary along the polychronicity continuum more than others? June Cotte and S. Ratneshwar (1999) have certainly documented the ability of some people to vary their behavior radically along the polychronicity continuum as they moved between work and leisure activities. Hall suggested the facility to make such shifts may be related to what he called a "high adaptive factor" (Bluedorn 1998, p. 114), such people being more flexible along the polychronicity continuum than others. In a life context of varying polychronicity demands, perhaps an individual whose own polychronicity lies near the average of the varying environmental demands might be able to cope most readily with them because the largest adjustment required would be smaller, hence less potentially uncomfortable or stressing than from any other position on the polychronicity continuum. (See Chapter 6 for more

about the issue of congruence between individual and group polychronicity.) But again, this suggestion supposes a traitlike nature of polychronicity.

A second, related question asks, is polychronicity temporally scalable? The issue here is whether an individual's polychronicity maintains itself across differing amounts of time. For example, if a person behaves very monochronically within a period of two or three hours, will the same pattern reveal itself at higher orders of magnitude such as weeks, months, or years? That is, however the tasks or events are defined, and they may need to be defined in terms of larger magnitudes as time frames increase, would the same one-thing-at-a-time pattern be invariant and change little across time frames? This question has not really been investigated, for regardless of whether it is based on observation, phenomenological interviews, or questionnaires containing psychometric scales, the existing research seems likely to have dealt with time frames of a single day or less, likely frames of just a few hours. So does polychronicity scale? Or is it a nested phenomenon whereby someone might be monochronic within hour-long intervals but polychronic when the frame enlarges to a month? And if so, what might be the consequences of different nesting combinations?

Such questions not only point the direction for expanding our knowledge of polychronicity but also suggest the likelihood of various social and psychological determinants of it. One such determinant seems especially intriguing, and it is the individual's breadth of attention. Breadth of attention is "the number and range of stimuli attended to at any one time" (Kasof 1997, p. 303). This concept is used to describe screeners, people who focus on a small range of stimuli and filter or "screen out" other stimuli. Conversely, nonscreeners attend to a large range of stimuli and are aware of a much larger range of potentially unrelated stimuli (Kasof 1997). Breadth of attention is basically a phenomenon that describes differences in how individuals perceive the world from moment to moment, and its definition makes it seem likely to be related to polychronicity. Hence Joseph Kasof communicated the following thoughts to me about this potential relationship:

Polychronicity must be low among people who have dispositionally narrow breadth of attention, because if one's attention capacity to simultaneously maintain multiple streams of thought is very low, it would be practically impossible to simultaneously engage in multiple activities at the same moment. Over time, difficulties in doing multiple tasks simultaneously would cause individuals who are dispositionally low in breadth of attention to hold less



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 these three—how traitlike, scalability, and relationship with breadth of attention—will have to be answered before any claims can be made that we truly understand this so fundamental of behavior patterns. And certainly other questions come readily to mind. For example, until now the term *multitasking* has not been used in this chapter—and for good reason. That reason is the multitasking concept combines both speed and activity-pattern dimensions rather than simply focusing on activity patterns (i.e., polychronicity). As such it is only partially synonymous 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

Handwritten notes on red sticky tabs on the left margin of page 82. The notes include: "4", "J J", "tcnhmuv-^ -Г К", "Otturi Lov-o", "яАйр h'c, -fLtov", "ptiWVlfn'oNi' ci", "rooYwtv\ro\ln\l, s", "iftfof chñOfte", "ζ,PAί.δ'OTN^ lz", and "making".