Organizational Members' Communication and Temporal Experience: Scale Development and Validation

Dawna I. Ballard and David R. Seibold
Communication Research 2004 31: 135
DOI: 10.1177/0093650203261504

DAWNA I. BALLARD
DAVID R. SEIBOLD

Organizational Members' Communication and Temporal Experience

Scale Development and Validation

This article reports the findings of scale development and validation efforts centered on 10 dimensions of organizational members' temporal experience identified in previous research. Consistent with a community-of-practice perspective, 395 members of five organizational units indicated their agreement with a series of statements regarding the day-to-day words and phrases they use to describe their activities, work-related events, and general timing needs. Results of a confirmatory factor analysis provided support for the hypothesized enactments of time and construals of time. Organizational members' enactments of time included dimensions relating to flexibility, linearity, pace, precision, scheduling, and separation, and their construals of time included dimensions concerning scarcity, urgency, present time perspective, and future time perspective. A new dimension, delay, was found. Implications for pluritemporalism in organizations and the study of time in communication are discussed.

Keywords: *chronemics; time; temporality; scale; organizations; groups*

The importance of time in the study of communication was addressed more than a quarter of a century ago (Bruneau, 1974, 1977). Termed *chronemics* (following Poyatos, 1976), scholars were encouraged to focus on "the meaning of human time experiencing as it influences and is influenced by human communication" (Bruneau, 1979, p. 429). Two important assumptions regarding the relationship between time and communication were underscored. First, time and communication are recursively constituted. Persons' experience of time affects their communication patterns, and, in turn, their communication

COMMUNICATION RESEARCH, Vol. 31 No. 2, April 2004 135-172
DOI: 10.1177/0093650203261504

patterns help shape their experience of time. Second, the focus on meaning implies that communication scholarship is informed by persons' intersubjective, or shared, experiences of time rather than solely objective measures of their temporal behavior or individual (subjective) orientations.

That work and research by others in communication (Schockley-Zalabak, 2002; Wolburg, 2001) has mirrored the surge of scholarly interest in time, especially in organizations (Adam, 1995; Barkema, Baum, & Mannix, 2002; Lee & Liebenau, 1999), across many disciplines (Adam, 1990; Bergmann, 1992; Bucciarelli, 1994; Hall, 1983). Bedrock in this "nascent paradigm" (Hassard, 1996) is the finding that time is not *monotemporal*—invariable, standardized, and context-free (Nandhakumar & Jones, 2001)—but *pluritemporal*. That is, different types of time exist in parallel and simultaneously (Nowotny, 1992), each socially constructed from varied human, cultural experiences (Giddens, 1984). Organizational pluritemporalism derives from the interactions of diverse occupational, functional, and cultural groups, each with its unique temporality (Dubinskas, 1988a). Current research on time in organizations has investigated how various monotemporal artifacts (timelines, charting, milestones, and the like) are used to render time visible, concrete, and objective and, thus, to facilitate organizational coordination and production while still allowing organizational subgroups to negotiate and manage time pluritemporally for their own means and ends (Yakura, 2002). Still, as Hassard (1996) observed, theoretical analyses of time in organizations are needed (see also Ancona, Okhuysen, & Perlow, 2001; Mitchell & James, 2001). Additionally, scholarship in this area needs better methods and measures for understanding "how time is actually organized in work practices" (Nandhakumar & Jones, 2001, p. 195). This study addresses both needs, first, by building on a meso-level model of organizational communication and temporality reported elsewhere (Ballard & Seibold, 2003) to confirm and elaborate the dimensions underlying pluritemporality in organizations and, second, by offering a scale for assessing organizational members' temporalities.

More specifically, our research has been consonant with the tenets and findings above, as well as calls for theory building and enhanced measurement, as we examined organizational members' temporality in general (Ballard & Seibold, 2001, 2003) and temporal variation across work groups in particular (Ballard & Seibold, 2000). We first identified three theoretical dimensions underlying work group members' experience of time—flexibility, separation, and concurrency—and provided empirical evidence for temporal variation based on group membership (Ballard & Seibold, 2000). We further

suggested that work group members differ in meaningful ways with regard to their intersubjective experiences of time and that their varied communication demands and patterns may contribute to these differences. Concerning differences in work group members' temporal experiences, we later refined and extended these observations (Ballard & Seibold, 2003) by offering a multilevel theoretical framework of organizational temporality that identifies contributing factors at several levels of analysis and focuses on three task-related communication structures (workplace technologies, feedback cycles, and coordination mechanisms) central to members' experience of time as well as the role of interaction in this process. This framework broadens the scope of related dimensions of organizational temporality to include scheduling, precision, pace, present time perspective, future time perspective, scarcity, and urgency in addition to the earlier supported dimensions of flexibility, separation, and linearity (formerly labeled concurrency) (Ballard & Seibold, 2003).

In this investigation, we report the findings of scale development and validation efforts centered on these 10 dimensions of organizational members' experience of time. The study enables empirical assessment and refinement of the Ballard and Seibold (2003) model of organizational temporality described below and, thus, needed theory building in the area (Goodman, Lawrence, Ancona, & Tushman, 2001; Hassard, 1996). It also contributes to research in communication by more fully exploiting Bruneau's (1974, 1979, 1996) conception of the relationship between time and communication and contributes to scholarship from many disciplines on a variety of issues relating to time in the workplace (Albert & Bell, 2002; Ancona & Chong, 1996; Barley, 1988; Bluedorn, 2002; Bluedorn & Denhardt, 1988; Butler, 1995; Das, 1993; George & Jones, 2000; Harrison, Price, Gavin, & Florey, 2002; Huy, 2001; Lim & Murnighan, 1994; Mosakowski & Earley, 2000; Parks & Cowlin, 1995; Perlow, 1997, 1999; Traweek, 1988).[1] To these ends, we begin below by identifying predominant perspectives regarding organizational members' temporal experience in general and position our work among these perspectives. This is followed by a more detailed explanation of each temporal dimension of interest in the present investigation as well as our hypotheses. We then describe the methods used in the study including improvements from our previous measures. Findings are discussed in terms of evidence for organizational pluritemporality and in terms of measurement and scale development, and implications for the study of time in communication and organizational research are addressed.

Theoretical Perspectives on Organizational Members' Temporal Experience

The modern industrial organization transformed time into capital and, in the process, fundamentally shifted the way its members relate to each other and to their work (Adam, 1990; Bruneau, 1996; Gurvitch, 1964; Hall, 1983; Hassard, 1996; Mumford, 1934; Nyland, 1990; E. Thompson, 1967). Even in an age of globalization, in which this received view of time is becoming shared or acknowledged in organizations around the world, organizational members and researchers are still struggling to understand exactly how this transformation affects us and, ultimately, what it means for our lives (Andrew, 1999; Barreau, 2000; Bennett, 2000; Cross, 1993; Gleick, 1999; Hareven, 1982; Hochschild, 1997; Neustadter, 1992; Perlow, 1997, 1999, 2001; Robinson & Godbey, 1997; J. Thompson & Bunderson, 2001). The prominent questions among these inquiries generally concern either the causes or the outcomes of this shift in the modern organization's (and its members') relationship with time.

The approaches taken to answer such questions can be grouped into three broad perspectives—each focused on a different variety of time. One approach considers the objective characteristics of time in the workplace and explores the social processes involved in the creation and management of formal time-related policies and standards. Much of this research deals with such variables as the length of the workday and workweek, the availability of family leave, vacation time and leisure time, work-family tensions, and telecommuting (Cross, 1989; Golden & Figart, 2000; Hylmö & Buzzanell, 2003; Kirby & Krone, 2002; Perlow, 2001). It also involves issues concerning the negotiation of deadlines and timing (Albert, 1995; Albert & Bell, 2002; Gersick, 1988, 1989; Okhuysen & Waller, 2002; Waller, Zellmer-Bruhn, & Giambatista, 2002; Yakura, 2002).

A second approach focuses on individuals' subjective constructions of time, on the psychological impact of various temporal norms, and on individual coping strategies including time management or lateness behavior (Blau, 1994, 1995; Gonzalez & Zimbardo, 1985; Gulick, 1987; Hellström & Hellström, 2002; Macan, 1994; McGrath & Kelly, 1992; Sabelis, 2001; Wilson, 1997; Ylijoki & Mäntylä, 2003). Some investigations in this area link members' subjective experiences to larger group and organizational outcomes—the focus of the third category (Waller, Conte, Gibson, & Carpenter, 2001; Waller, Giambatista, & Zellmer-Bruhn, 1999).

The final approach centers around the intersubjective, or shared, experience of time for organizational members including the ways in which this

intersubjective temporal experience shapes and is shaped by interaction at the group, organizational, and environmental levels (Barley, 1986, 1988; Bucciarelli, 1994; Clark, 1990; Dubinskas, 1988b; Hassard, 1996; Lawrence & Lorsch, 1967; Nowotny, 1992; Perlow, Okhuysen, & Repenning, 2002; Roy, 1960; Starkey, 1989; Zerubavel, 1979, 1981). This research extends to the exploration of national and culturally linked differences in time-related work practices and values (Hall & Hall, 1990; Hay & Usunier, 1993; Hofstede, 1985, 1999; Hofstede & Bond, 1988; Limaye & Victor, 1991). A good deal of work overlaps across two or more of these categories (Ancona et al., 2001; Bailyn, 1993; Bluedorn, 2002; Perlow, 1997); however, these three areas help identify related theoretical perspectives concerning the experience of time in industrial organizations.

The theoretical framework undergirding the present investigation addresses objective, subjective, and intersubjective constructions of time to offer an integrative perspective on the role of cultural-, environmental-, organizational-, group-, and individual-level influences in shaping organizational members' temporal experience (Ballard & Seibold, 2003). It identifies macro-organizational structures (which include dominant cultural patterns, environmental characteristics, industry norms, occupational norms, and organizational culture) and micro-organizational structures (including individual characteristics such as personal influences, work-home conflicts, personality, and social identity) that enable and constrain members' actions and interactions in the organizational context. It focuses, however, on members' intersubjective experience of time, partially mediated through group-level interaction surrounding meso-organizational structures such as coordination methods, feedback cycles, and workplace technologies "in use"—which shape and are shaped by members' day-to-day routines (Barley, 1988; Dubinskas, 1988a; Lawrence & Lorsch, 1967; Orlikowski, 2000; E. Thompson, 1967).

Wenger's (1998) communities of practice, an important theoretical perspective that informs our work, sheds additional light on the intersubjective character of work group temporality as we conceive it. A community of practice is defined by three things: mutual engagement, a joint enterprise, and a shared repertoire. Mutual engagement concerns the complementary and sometimes overlapping contribution of diverse work group members to a shared task or joint enterprise. Negotiation of this joint enterprise (via members' multiple interpretations and mutual accountability) is situated within and influenced by a larger system. Members process a shared repertoire of words, concepts, actions, routines, tools, and the like that emerge in the course of their involvement with each other. The first two requirements

define the central assertion of our theoretical framework, and the third suggests how to assess it empirically.

In earlier work, we assessed organizational members' experience of time by asking them to respond to a series of statements regarding their behaviors and views (Ballard & Seibold, 2000). Although important questions about particular behaviors and views can be answered using that format, our basic aims for the present project have led us to alter this approach. Instead, we asked members how they refer to time and temporal phenomena (actions, activities, and events) within their group. This is consistent with a community-of-practice theoretical perspective and our concern with exploring the communicative aspects of temporality in greater depth. It also yields several empirical advantages. Namely, we seek to develop an instrument that can apply equally to all members of a given organization and a variety of different kinds of organizations, regardless of the spatio-temporal boundaries of their working environment, yet still yield nuanced understanding of how time is actually organized in work practices (Nandhakumar & Jones, 2001) and how pluritemporality (Nowotny, 1992) can be measured across organizational subgroups. Additionally, the increased utility of the instrument will also facilitate continued efforts to develop reliable and valid measures of organizational members' temporal experience, as instruments measuring organizational members' temporality are both needed and scarce (Schriber & Gutek, 1987). Finally, this study contributes theoretically by expanding the number of dimensions previously investigated in our own work and those related to communication structures that enable and constrain members' interaction patterns (Ballard & Seibold, 2001, 2003). We next explicate the 10 dimensions of time that underlie our theoretical framework and that are the focus of this investigation.

Dimensions of Temporal Experience in Organizations

Research on time in organizations yields 10 temporal dimensions associated with members' engagement in the routine activities that enable and constrain their work environments (Ballard & Seibold, 2003). These dimensions can be grouped within two distinct conceptual categories: enactments of time (which include flexibility, linearity, pace, precision, scheduling, and separation) and construals of time (which include scarcity, urgency, and present and future time perspectives). Enactments refer to the way work group members perform time. Certain actions or ways of approaching the work process (strategic or habitual) have an explicitly temporal quality and shape group members' experience of time. How flexible a group is with regard to work plans and timing, the tendency of members to multitask or juggle several things at once, how fast or slow the group usually works, how punctual they are in

beginning or carrying out their work, how tightly scheduled their time is, and whether they separate themselves or screen out distractions to do their work are all different dimensions of the way time is enacted in work groups. Temporal construals refer to the way work group members interpret or orient to time. Whether group members see time as fleeting or limited and whether they are more concerned with long-term plans or immediate concerns are characteristic dimensions of their experience of time. Each of these dimensions and its role in organizational members' work lives is elaborated below, first by examining temporal enactments and then explicating construals of time.

Enactments of Time

Organizational units and their members create temporal norms for behavior through regularized patterns of interaction. These behaviors are reflected through their enactments of temporal *flexibility, linearity, pace, precision, scheduling*, and *separation*. Each of these is discussed in turn.

Flexibility pertains to the degree of rigidity in time structuring and task completion plans (Ballard & Seibold, 2000; Starkey, 1989). Temporal flexibility may be a function of the task or a consequence of organizational norms and practices. Task-related flexibility is associated with the temporal constraints inherent in a job and the nature of its deadlines. Academic work, for example, is considered high in flexibility, because it affords individuals autonomy over the process (Starkey, 1989). Flexibility also can be a function of group norms and practices and may be reflected in them (e.g., the tendency to reschedule meeting times without negative sanctions). An agreement between two colleagues to pencil in a meeting serves to communicate the need (of one or both parties) to be flexible with regard to timing plans. Blount and Janicik (2001) have discussed temporal responsiveness, or "the ability of organizational actors to adapt the timing of their activities to unanticipated events" (p. 566), which reflects classic characterizations of temporal flexibility.

Pace refers to tempo or rate of activity (Lauer, 1981; Levine, 1988; Moore, 1963). Organizational units and their members may adopt an accelerated work pace to cope with numerous demands in their task environment or the speed of inputs within a defined span of time. Groups are described as fast paced or slow paced depending on the rate of input of stable or new stimuli in their environment. Following on her earlier work (Gersick, 1988, 1989) that developmental and productivity transformations take place at the temporal midpoint of a group's life, Gersick (1994) found that groups use time and temporal milestones more generally to guide their work pace and to assess prog-

ress. Relatedly, Okhuysen and Waller (2002) conceptualized groups' time pacing as a semistructure that affords them flexibility for addressing ambiguous tasks. They found that other semistructures, such as familiarity among group members and formal instructions, promoted the occurrence of midpoint transitions and temporal pacing.

Separation indexes the degree to which extraneous factors are eliminated or engaged during task completion (Ballard & Seibold, 2000; Hall, 1983). It is manifested in the physical and psychological availability or protection of group members' time (and often space). Under high levels of separation, extraneous factors may be interpreted and semantically represented as unwelcome interruptions. Screening behaviors, including closing the door or not answering the phone, are common in these situations. Low levels of separation are evident in such structures and discursive representations as open-door policies used to communicate less restricted spatio-temporal norms. Alternatively, Perlow (1997) used quiet time as a tool to separate software engineers from interactions with others and to increase work productivity.

Whereas separation refers to the environment created to complete a task, temporal *linearity* is associated with actual task execution. Members may enact linearity or its opposite, cyclicity, via the number of activities or tasks they engage in simultaneously (a cyclic pattern) and the activities they try to fit into successive time frames, as in daily calendars demarcated by 15-minute intervals (a linear pattern). The task completion approach of doing one thing at a time is characteristically linear; doing many things at once is cyclical (Graham, 1981). A classic example of linearity is found in Taylor's (1911) theory of scientific management, designed to help organizational members accomplish more tasks per unit of time through analyzing the particular sequence of steps required for efficient task completion. Bluedorn (2002) contrasted linearity with polychronicity as a means of task execution and/or time management, and differences across organizational groups on this dimension have been supported in previous research (Ballard & Seibold, 2000).

The *scheduling* dimension of organizational time concerns the extent to which plans, activities, and events are formalized (Yakura, 2002). McGrath and Kelly (1986) asserted that "the essence of scheduling is to determine when some event will occur or some product will be available in relation to an external calendar or clock" (p. 109). It includes formalizing the sequencing and duration of an event (Lauer, 1981) and is communicated through written or oral means. Group members' time either can be tightly scheduled, as in a day full of specific appointments (each with a finite beginning and ending), or loosely scheduled, as in a day's activities based on a to-do list with no specific boundaries regarding either when something must occur or how much time is allocated to complete it. Zerubavel (1981) elaborated, "Unlike many non-

Western civilizations, where events and activities are temporally located in a relatively spontaneous manner, we tend to 'schedule' them, that is, routinely fix them at particular prearranged, and often standard, points in time" (p. 7). The scheduling dimension of time is an indication of how spontaneous or prearranged work life is for work groups. Scheduling is evident in group members' negotiations over whether they can fit in (their schedule) additional activities. A variety of organizational timelines (Gantt charts, program evaluation review technique [PERT] charts, project timelines, milestone charts) function as temporal boundary objects that make time concrete and visual thus enabling scheduling. Yet these (mono)temporal artifacts simultaneously leave time negotiable for various groups of participants who must coordinate their activities around such timelines thus rendering time interpretable within each group (e.g., on time, out of time, overtime, downtime) (Yakura, 2002).

Although scheduling refers to the degree of formalization of activity with regard to sequencing and duration, *precision* refers to the exacting nature of the timing. Timing demands can be quite precise, as in the case of a strict publication deadline; they may be imprecise, as when telephone repairpersons are given 8-hour blocks of time to service a specified number of homes. In addition to prescribed parameters, precision also characterizes constraints on work group members' actions. For example, punctuality is a measure of temporal precision. An event can be said to begin and end precisely on schedule, and persons who are punctual are said to be precisely on time. Group norms regarding when meetings begin often vary in terms of expectations about punctuality. In some groups, members informally expect that the meeting will begin about 10 minutes after the scheduled time; in other groups, meetings are expected to begin precisely on time. The difference between scheduling and precision is important. Two groups may be identical with regard to how scheduled their work lives are but have unique norms with regard to how precisely on schedule the activities are expected to be. Mainemelis (2001) described how organizational members can be on schedule but so engrossed in their work as to produce a state of timelessness that they are imprecisely on schedule. Schriber and Gutek (1987) found precision to be important in their treatment of differences in organizational culture regarding punctuality and deadlines.

Construals of Time

Above and beyond group members' enactments of the foregoing temporal dimensions, they construe time in particular ways. These construals are

reflected in their temporal perspective (*present* and *future*) and their experience of time as *scarce* and *urgent*.

Temporal perspective in organizations concerns whether members' thoughts are oriented toward the *present* or *future* (Lauer, 1981; Waller et al., 2001). Jones (1988) described the difference between a present and future orientation:

> We can distinguish between time as a structured, unitized measure of the sequence of unfolding events, compelled toward some distant outcome, and time as the backdrop for behaviors, thoughts, and feelings. The former is a conception of action that occurs within a time that flows linearly, inexorably, and necessarily forward. It is a perspective that is strongly guided by the future. The latter is a feeling of behavior that occurs in-time, where time consciousness is suspended and action occurs in the infinite present. (p. 26)

Present and future time perspectives are considered to be independent, though related, dimensions of time. They exist on separate scales and as continuous variables. Hay and Usunier (1993) discussed four levels of future-time perspective: distant future, future, intermediate future, and near future. The need to engage in long-term planning tends to engender a strong future orientation in work units (Jaques, 1982), whereas the need to develop strategies designed to address a range of emergent problems tends to bring about a more present-centered focus (Schein, 1992). Members may construe time within both high present and future time perspectives, as when an administrative team must plan for growth while addressing emergent problems on a daily basis.

Scarcity is the construal of time as a limited and exhaustible resource (Karau & Kelly, 1992). Temporal scarcity is emphasized in work situations characterized by either too many inputs within a given unit of time or not enough time to complete a given task as in role overload (McGrath & Kelly, 1986). Alternatively, groups may have more time than they need to complete a task and find themselves experiencing underload. Members may talk about the need to buy some time or save time when the perception of time as scarce increases and the need to use up some time or pass the time when this feeling dramatically decreases. Construals of time as scarce at work also may vary during busy or slow times of the day or year. In turn, these construals may be reflected communicatively in organizational members' information overload (Farace, Monge, & Russell, 1977), interpersonal conflict (Nicotera, 1994), and resistance (Mumby, 1996).

Construals of temporal *urgency* have been equated with a condition called *hurry sickness*, which describes persons' preoccupation with deadlines and task completion (Gastorf, 1980; Meuser, Yarnold, & Bryant, 1987; Waller et al., 2001). Although these studies have focused on individual traits related to temporal urgency, Perlow et al. (2002) documented how organizations can fall into a speed trap associated with their own past and present emphases on speed in decision making. Each level of analysis contributes to understanding the temporal dimension of urgency. Construals of time as urgent may be represented through discourse about running out of time to complete a given task. Groups characterized by constant stimulus-response interactions are likely to construe time as urgent, or urgency may reflect a temporary valuation of time based on an impending deadline (Gersick, 1988, 1989; Waller et al., 2002). Construals of time as urgent and scarce often coincide. However, urgency is focused on the task, whereas scarcity is focused on the (temporal) resources available to complete it. For example, a group may be in a situation of underload and have more than a sufficient amount of time to complete a task but still take its completion as urgent because of its perceived importance.

The foregoing rationale and explication are foundational to the two hypotheses to be tested in this study:

Hypothesis 1 (H1): Organizational members' enactments of time can be characterized along the following dimensions: flexibility, linearity, pace, precision, scheduling, and separation.

Hypothesis 2 (H2): Organizational members' construals of time can be characterized along the following dimensions: scarcity, urgency, present time perspective, and future time perspective.

Method

Organizational Site

The subcontracting organization that coordinates and oversees all housing and residential services for students and employees of a medium-sized West Coast university (WCU) served as the organizational site for this study. It consists of five departments—Business and Financial Services, Residential Operations, Campus Dining Services, Residential Life, and Apartment and Community Living. The departments range in size from moderate (n = 57) to large (n = 367). Business and Financial Services members handle all budget, finance, and human resources issues as well as information systems and

technology issues. The Residential Operations staff takes care of all landscaping and custodial services, maintenance, disaster management, and capital projects as well as campus conference services. Campus Dining Services employees operate concessions and vending, catering, special events, and three large dining commons. Residential Life team members look after the living situations of the undergraduate students living in university-owned housing. Finally, Apartment and Community Living workers manage single student and family student housing and provide off-campus housing listings for the university.

Sample

In addition to its functional diversity, the WCU organization studied is professionally and demographically diverse. It boasts—and our study included—roughly equivalent numbers of white-collar and blue-collar workers, part-time and full-time employees, women and men, and a wide range of ages and ethnic backgrounds—variables described in the research literature as potential influences on persons' time orientation (Aapola, 2002; Adam, 1995; Ballard & Seibold, 2000; Jaques, 1982; Hall, 1983). Additionally, individuals from all four levels of the organization participated. None of the members in these departments were involved in telework arrangements; all of our respondents were colocated.

Specifically, the ethnic profile of the participants included 42.6% Caucasians, 27.3% Latinos, 10.1% Asians, 8.3% multiracial individuals, 6.2% African Americans, 1.3% Native Americans, 1% Arabs, and 3.2% were of unspecified descent. The sample included roughly equal numbers of men (52.4%) and women (47.3%). In terms of their ages, about half were older than 30 (up to 70 years old), and the other half were in their 20s or younger. The education levels of the respondents were diverse including 10% who held a graduate degree, 62.4% with some college education, 24.3% who earned a high school diploma (but did not attend any college), and 3.3% who had not completed high school. The annual household income levels of the respondents varied from 53.8% earning below $20,000, 23.4% making between $20,000 and $34,999, 12.2% making between $35,000 and $49,999, 7.5% earning between $50,000 and $75,000, and 3.1% earning more than $75,000. Respondents had an average of 2 years employment with the organization, a median of 4.8 years tenure, and the longest term was more than 29 years. More than 56% of the participants were full-time employees at WCU, whereas slightly fewer than 44% were employed part-time. There were also about equal numbers of student (48%) and nonstudent (52%) employees.

Focus Group

A small focus group was conducted to better understand the task, social, and temporal environments of the respondents to aid in interpretation of the quantitative results. The group consisted of one member from each of the five WCU departments at various levels of the organization and with varying lengths of tenure. The meeting lasted approximately 1 hour. Respondents were asked to describe the nature of their work, the challenges and rewards of their jobs, and their experiences surrounding time, and they were given the opportunity to discuss other relevant aspects of their workplace they chose to discuss.

Questionnaire

Dimensions of time. All measures of time were assessed through a self-administered questionnaire given to individual organizational members. Group-level referents were used in the instrument because the proposed theoretical framework locates the emergence of members' experiences of time in their shared work environments (Ballard & Seibold, 2003). This is consistent with a community-of-practice theoretical perspective (Wenger, 1998) and with Klein and Kozlowski's (2000) recommendations for conducting meso-level organizational research. Likert-type scales were created to assess members' experience of 10 dimensions of time—flexibility, linearity, pace, present time perspective, future time perspective, precision, scarcity, scheduling, separation, and urgency. As described earlier, items explored the manner in which members refer to time with their immediate coworkers rather than how they feel about it or their specific acts. Given that members were required to estimate shared representations of time, asking about the kind of language used in their work unit enables respondents to recount their regular experiences (in contrast to asking individuals to accurately judge how others feel or even what others do). Also, by asking about conversations, respondents focused on their interaction with others.

Respondents were asked to rate a series of 57 words and phrases (representing 10 scales) in terms of how strongly they agreed or disagreed with the phrases as related to the way they referred to time. The specific instructions stated the following:

> Please think about the way you and your coworkers refer to time in the course of carrying out your daily tasks at work. Read the statements below and then rate each of the words or phrases that follow based upon how well they describe the way you and others in your immediate work

group or work unit generally talk about time. Please circle the number to the right of each word or phrase that best represents your answer.

The words and phrases were derived from descriptions of time, time views, and time use found in a variety of popular and scholarly literatures (Gerson, 2000; Gleick, 1999; Hall, 1983; Holder & McKinney, 1992; Meuser et al., 1987). Each dimension of time was measured by a scale that included between four and seven words or phrases. Individual items were reverse-coded where appropriate. Items were rated on a 6-point Likert-type scale, where 1 = *strongly disagree*, 2 = *somewhat disagree*, 3 = *slightly disagree*, 4 = *slightly agree*, 5 = *somewhat agree*, and 6 = *strongly agree*.[2]

Questionnaire administration. The instrument was pilot-tested at a meeting of 21 employees. Based on informal feedback, minor changes were made; however, the overall instrument remained similar enough to include those 21 respondents in the final data set. Approximately 70% of the data were collected during regularly scheduled employee meetings for a variety of groups. If a particular group did not hold regular employee meetings, then surveys were distributed through their immediate supervisors. By the end of the process, 395 members of the organization had returned completed surveys. These participants represent 75% of those to whom questionnaires were distributed in the WCU organization.

Results

Hypothesized Model

The 10-factor model of organizational members' temporal experience that includes six temporal enactments (Flexibility, Linearity, Pace, Precision, Scheduling, and Separation, and four temporal construals (Present Time Perspective, Future Time Perspective, Scarcity, and Urgency) was tested using confirmatory factor analytic and reliability statistical procedures through the AMOS and SPSS software programs, respectively. The hypothesized model is presented in Figure 1. As indicated, the factors were allowed to covary.

Assumptions

Frequencies and descriptive analyses were performed, and the data were screened for normality, linearity, and the existence of outliers. Normality was assessed through examination of normal probability and detrended normal

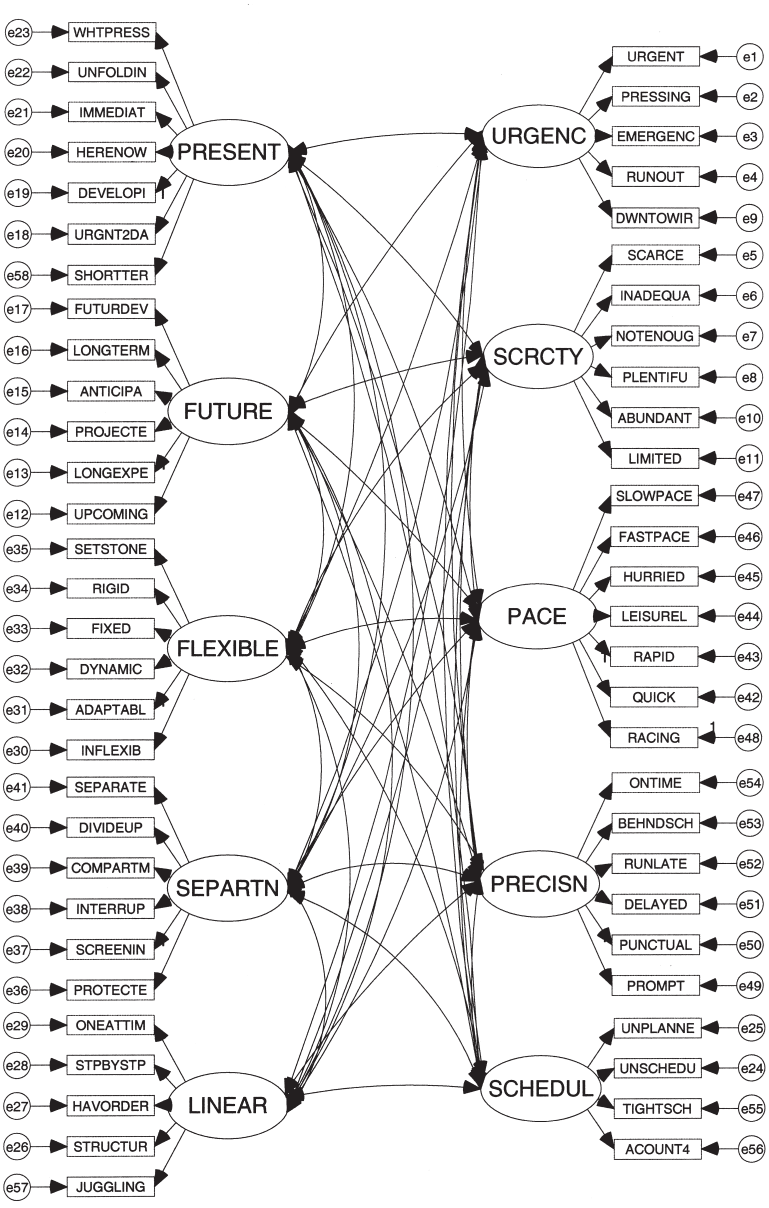

Figure 1. Hypothesized Model of Dimensions of Temporal Experience

probability plots. Linearity was evaluated through the inspection of scatterplots and linearity tests for several combinations of variables. The data appeared linear, although some combinations of variables were less so

than others. Linearity was also assessed during subsequent analysis of variance procedures. Univariate and multivariate outliers were sought in both grouped and ungrouped data. Univariate outliers were screened through exploring *z* scores, whereas multivariate outliers were screened by computing the Mahalanobis distance for extreme cases. Based on these analyses, transformations were not indicated. Finally, a dummy variable was constructed to test for differences between cases with missing and nonmissing values. Results across all variables revealed no significant differences. Structural equation modeling analysis was performed using data from all 395 respondents. Missing data were estimated using full maximum-likelihood analysis.

Model Estimation

Maximum-likelihood estimation was employed to estimate all models. The independence model that tests the hypothesis that all variables are uncorrelated was easily rejected, $\chi^2(1711, N = 395) = 59782.60, p < .01$. The hypothesized model was tested next and it was not supported, $\chi^2(1553, N = 395) = 6117.06, p < .01$, Tucker Lewis index (TLI) = .91, root mean square error of approximation (RMSEA) = .09, standardized root mean square residual (SRMR) = .29. However, a χ^2 difference test indicated a significant improvement in fit between the independence model and the hypothesized model.[3]

Post-hoc modifications were performed to develop a better fitting model. All items with nonsignificant loadings on their respective factor were dropped, and the unidimensionality of all factors was verified before proceeding. Two factors, Precision and Scheduling, were bidimensional. Using exploratory factory analytic procedures, the Precision Scale yielded two subfactors, which were labeled as Punctuality and Delay. Items on the Precision Scale indicating being "behind schedule," "running late," and "delayed" loaded distinctly from items that indicated being "on time," "punctual," and "prompt." (Reverse-coding procedures were verified to ensure that the scale for appropriate items was properly adjusted to indicate that they measured the *opposite* of the other items.) Additionally, items on the Scheduling Scale indicating events as being "unscheduled" and "unplanned" loaded distinctly from items that indicated time as "tightly scheduled" or "accounted for." The former subfactor was labeled *Dynamism*; the latter subfactor retained the original label of *Scheduling*.

Reliability coefficients for the subscales were computed next. On the basis of the reliability analyses, additional items were removed, and most factors achieved reliability coefficients in the .70 to .80 range—considered strong for early research in an area (Nunnally, 1978). Two factors (Separation and

Table 1
Factor Loadings of the Temporal Experience Scale Dimensions

Dimension	Items	Factor Loadings	Statistical Significance	Mean	Standard Deviation
Urgency[a] α = .85	Pressing	.88	.001	3.85	1.50
	An emergency	.81	.001	2.76	1.61
	Urgent	.89	.001	3.41	1.43
	Running out	.88	.001	3.42	1.52
	Down to the wire	.91	.001	3.32	1.55
Scarcity[a] α = .85	Inadequate	.85	.001	3.32	1.53
	Scarce	.90	.001	3.53	1.57
	Not enough	.87	.001	3.77	1.62
	Plentiful	.57	.001	3.00	1.48
	Abundant	.52	.001	2.94	1.40
	Limited	.81	.001	3.90	1.58
Flexibility[b] α = .70	Set in stone	.52	.001	2.98	1.37
	Rigid	.79	.001	2.84	1.35
	Fixed	.77	.001	3.27	1.34
	Dynamic	–.11	.06	4.02	1.50
	Adaptable	.05	.39	4.48	1.21
	Inflexible	.54	.001	2.59	1.30
Separation[b] α = .52	Interrupted	.51	.001	3.64	1.45
	Screening out distractions	.57	.001	3.11	1.32
	Separated from each other	.63	.001	3.09	1.36
	Divided up	.49	.001	3.97	1.23
	In compartments	.65	.001	3.15	1.28
	Protected from interruptions	.35[c]	.001	2.38	1.32
Pace[b] α = .85	*Slow-paced*	.39[c]	.001	2.65	1.45
	Fast-paced	.88	.001	4.03	1.41
	Hurried	.87	.001	3.62	1.35
	Leisurely	.41[c]	.001	2.97	1.46
	Rapid	.88	.001	3.84	1.42
	Quick	.78	.001	3.96	1.31
	Racing	.86	.001	3.14	1.43
Precision[b]	*On time*	.26	.001	4.14	1.29
	Behind schedule	.76	.001	3.09	1.38
Punctuality α = .68	Running late	.79	.001	3.14	1.29
	Delayed	.69	.001	3.07	1.32
Delay α = .75	*Punctual*	.18	.001	4.01	1.30
	Prompt	–.01	.91	3.85	1.28
Scheduling[b] α = .53	Tightly scheduled	.02	.77	3.81	1.46
	Accounted for	.12	.04	4.20	1.29
	Unscheduled	.74	.001	3.03	1.35
	Unplanned	.77	.001	2.85	1.41
Linearity[b] α = .65	Carried out one thing at a time	.52	.001	3.24	1.51

(continued)

Table 1 (continued)

Dimension	Items	Factor Loadings	Statistical Significance	Mean	Standard Deviation
	Structured	.85	.001	3.88	1.37
	Having a specific order	.85	.001	3.84	1.30
	Juggling several things	.20[c]	.001	4.44	1.49
	Carried out step by step	.79	.001	3.92	1.33
Present Time Perspective[d] α = .76	*Short-term expectations*	.60[c]	.001	3.75	1.27
	What is pressing	.97	.001	4.19	1.25
	Unfolding developments	.91	.001	4.16	1.15
	The immediate consequences	.92	.001	4.15	1.20
	The here-and-now	.88	.001	4.17	1.19
	Presently developing issues	.94	.001	4.35	1.16
	What is urgent today	.94	.001	4.52	1.16
Future Time Perspective[d] α = .87	Future developments	.94	.001	4.43	1.20
	Long-term plans	.96	.001	4.04	1.40
	Anticipated events	.95	.001	4.22	1.24
	Projected dates	.98	.001	4.35	1.26
	Long-term expectations	.98	.001	4.25	1.29
	Upcoming activities	.98	.001	4.59	1.17

a. These items were preceded by the following statement: "In my particular line of work, we usually talk about *time* as . . ."
b. These items were preceded by the following statement: "In my particular line of work, we usually talk about *our actions or activities* as . . ."
c. These items were dropped on the basis of reliability analyses. All items that were dropped are indicated in italics.
d. These items were preceded by the following statement: "In my particular line of work, we usually discuss *events that happen* at work in terms of . . ."

Scheduling) had coefficients just above .50—considered marginal but permissible when theoretically promising (Nunnally, 1978). We decided to retain them as we searched for best model fit. All factor loadings, including significance tests, and final reliabilities for each dimension are included in Table 1 as well as item means and standard deviations.

Modification indexes (MI) were then consulted to address issues of model fit. To avoid overfitting the model based solely on empirical, rather than theo-

retical considerations, modification decisions were made based on the relative size of the index values. One value (108.716) was significantly larger than others (most others were about 25 or much lower) and indicated that the error covariances for items referring to time as "plentiful" and "abundant" on the Scarcity Scale should be estimated to increase the fit of the model. We made this change, along with those previously described, and recomputed the MIs. At this point, one final value that correlates the error terms for an item on the Urgency Scale referring to time as "running out" and an item on the Scarcity Scale referencing "not enough" time remained at a high of 25.756 with most others lowered to 5 or less. Based on the persistence of this value (because it was previously the same), we estimated those residuals.

Finally, because Separation and Scheduling had marginal reliability levels, we estimated the model with and without each of these factors and found that the best model fit included Separation but not the new Scheduling dimension. Based on this evidence, we dropped the items loading on this factor, and the Dynamism factor retained the Scheduling name. Ultimately, an 11-factor model that includes Flexibility, Linearity, Pace, Present Time Perspective, Future Time Perspective, Punctuality, Precision, Scarcity, Scheduling, Separation, and Urgency was tested for fit. The revised model showed marked improvement. The independence model that tests the hypothesis that all variables are uncorrelated was easily rejectable, $\chi^2(1225, N = 395) = 50615.80, p < .01$. The hypothesized model was tested next and support was found for it, $\chi^2(1070, N = 395) = 2509.49, p < .01$, TLI = .97, RMSEA = .06, SRMR = .09. Whereas the χ^2 test was significant indicating a lack of model fit, it was just less than 2.5 times the model degrees of freedom. Additionally, the relative measures evidenced model fit. A χ^2 difference test indicated a significant improvement in fit between the independence model and the hypothesized model. Finally, because the 11 dimensions measure different categories of experience (enactments and construals), at this point we checked for empirical differences between these dimensions using a second-order factor analysis model, $\chi^2(1113, N = 395) = 2747.47, p < .01$. Although the TLI indicated an adequate fit (.95), both the RMSEA and SRMR values (.08 and .13, respectively) suggested that the first-order model was a better empirical representation of the data. A χ^2 difference test between the first order and second order confirmed that the first-order model was a better fit at $p < .001$. Therefore, we retained the 11-factor model depicted in Figure 2.

Enactments of Time

The first hypothesis predicted that organizational members' enactments of time can be characterized along the following six dimensions: flexibility,

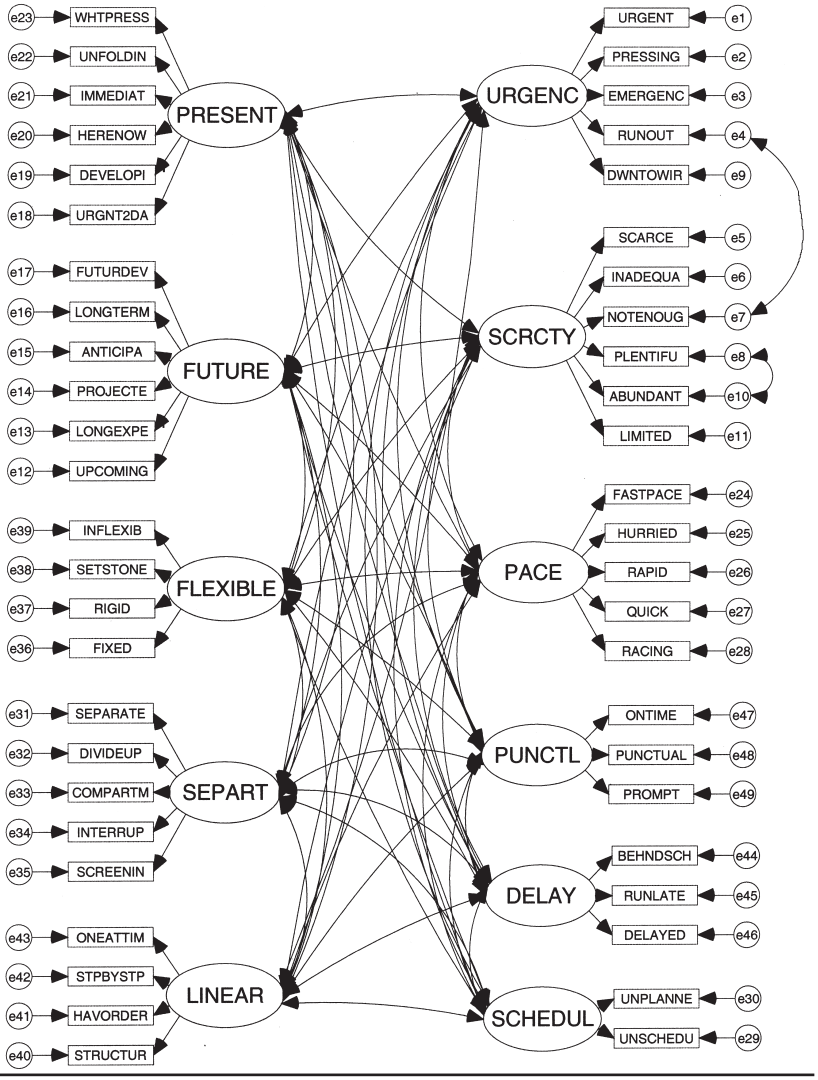

Figure 2. Revised Model of Dimensions of Temporal Experience

linearity, pace, precision, scheduling, and separation. As described earlier, precision was found to have two dimensions—punctuality and delay. H1 was not supported fully. Rather than six dimensions, results supported the existence of seven temporal dimensions enacted in organizational members' behaviors: flexibility, linearity, pace, punctuality, delay, scheduling, and separation.

Construals of Time

The second hypothesis proposed that organizational members' construals of time can be characterized along the following four dimensions: scarcity, urgency, present time perspective, and future time perspective. H2 was fully supported.

Validation Efforts

To establish construct validity, we drew on the structural equation modeling efforts described above. This method is suggested by Bryant (2000) and demonstrated in Judd, Jessor, and Donovan (1986) as the most accurate way to assess construct validity (as opposed to relying on bivariate correlations or even other multivariate techniques).

We first sought evidence of the convergent validity of our dimensions. Convergent validity is established through demonstrating high correlations between items that should measure the same construct. The test of convergent validity assesses whether the 49 items in our model result from 11 distinct factors (i.e., they converge distinctly around 11 separate dimensions) or if there is sufficient similarity across dimensions such that all 49 dimensions actually measure the same thing (i.e., they converge around one common dimension). We tested for convergent validity by constraining the correlations on all 11 factors to 1. The resulting fit, $\chi^2(1125, N = 395) = 4477.4, p < .01$, TLI = .89, RMSEA = .11, SRMR could not be successfully fitted, indicates a poor fit, and a χ^2 difference test ($p < .001$) confirms that the 49 items result from 11 unique dimensions.

Next, we addressed the issue of divergent validity. Divergent validity is established through differentiating between two theoretically distinct (though perhaps related) constructs. This is established, in part, through examining the internal consistency between two sets of items measuring different constructs. We choose to compare a scale that measures organizational members' satisfaction regarding the communication among departments (called, hereafter, Interdepartmental Communication Satisfaction, or ICS) with our 11 time subscales. ICS was chosen because of the focus in the literature on communication challenges among organizational members from departments with contrasting temporal experiences (Dubinskas, 1988b; Zerubavel, 1981). We expect this dimension to be related to, but distinct from, members' experience of time. First, we assessed a model that included ICS as a distinct factor related to each of our 11 time dimensions. Although the fit was poorer than the model depicted in Figure 2 ($p < .001$), it showed some level of consistency with the data, $\chi^2(1311, N = 395) = 2755.90, p < .01$, TLI = .96, RMSEA = .07,

SRMR could not be computed because of missing data, thus confirming the internal consistency of the measures (the reliability coefficient for the ISC scale was .88). Next, the factor correlations were constrained at 1, which resulted in $\chi^2(1377, N = 395) = 5750.4, p < .01$, TLI = .88, RMSEA = .11, SRMR could not be computed because of missing data. The difference χ^2 showed the superiority of the former model over the latter at $p < .001$ thus supporting the divergent validity of the model in Figure 2.

Judd et al. (1986) suggested establishing additional types of validity including predictive and differential predictive validity as well as through the use of longitudinal models. Although this is beyond the scope of the present investigation, future projects should establish additional forms of validity.

Discussion

Findings

The present study indicated that all 10 hypothesized dimensions of time, derived from theoretical or qualitative work, could be verified quantitatively. Specifically, flexibility, linearity, pace, present time perspective, future time perspective, precision, scarcity, scheduling, separation, and urgency characterized organizational members' temporal experience. Table 2 provides a summary of all of the dimensions found in the present investigation and demonstrates their links to previous research. Relevant studies are identified, their meaning is explicated, and an organizational example of each is provided.

There was partial support for the hypothesized enactments of time (H1) and full support for the hypothesized construals of time (H2). As predicted by H1, organizational members' enactments of time could be characterized along the following six dimensions: flexibility, linearity, pace, precision, scheduling, and separation. Consistent with H2, organizational members' construals of time could be characterized along these four dimensions: scarcity, urgency, present time perspective, and future time perspective.

Relevant to H1, an additional dimension of temporal enactments was identified—delay. Rather than being unidimensional, precision emerged as a multidimensional construct. Although the concept of temporal precision encompassed punctuality, tardiness, and delayed schedules, organizational members' responses indicated that these issues were separate. Precision reflected two related dimensions, labeled punctuality and delay. Two explanations may account for the bifurcation of precision. Although a specific project may be running behind schedule or delayed, organizational members can still maintain consistent patterns of punctuality to meetings or to work and

Table 2
Dimensions of Organizational Members' Temporal Experience: Relevant Literature, Definitions, Explication, and Examples

Enactments of Time	
Flexibility	
Literature:	Ballard and Seibold, 2000; Golden and Figart, 2000; Starkey, 1989
Definition:	The degree of rigidity in time structuring or task completion plans.
Explication:	Flexibility may be a function of the task, group norms, or organizational policies.
Examples:	Work that carries a great deal of autonomy often permits higher levels of flexibility. Organizational groups that frequently reschedule or cancel activities/meetings exhibit high levels of flexibility. Additionally, organizations may have policies that support flexible reporting times.
Pace	
Literature:	Lauer, 1981; Levine, 1988; Moore, 1963
Definition:	Tempo or rate of activity.
Explication:	Organizational groups are described as fast-paced or slow-paced depending on the rate of input of stimuli in their task environments.
Examples:	Members may adopt an accelerated pace to cope with demands on their time. Alternatively, work may be characterized by an absence of new inputs, which may lead to a slow pace of activity.
Separation	
Literature:	Ballard and Seibold, 2000; Hall, 1983
Definition:	The degree to which extraneous factors are eliminated (or allowed) in the completion of a work task.
Explication:	Separation is evidenced in members' physical and psychological protection (or availability) of their time (and often) space. It concerns the environment created to complete tasks.
Examples:	Separation is characterized by behaviors such as screening phone calls and closing the door to prevent unwanted interruptions.
Linearity	
Literature:	Bluedorn, 2002; Graham, 1981; Hassard, 1996
Definition:	The extent to which task completion involves discrete, segmented (versus intermeshed) activities.

(continued)

Table 2 (continued)

Enactments of Time	
Explication:	Linear task completion contrasts cyclical task completion. Time is treated both as a sequence and a boundary condition within a linear approach.
Examples:	Doing one thing at a time is a linear task approach. Multitasking reflects low levels of linearity.
Scheduling	
Literature:	Lauer, 1981; McGrath and Kelly, 1986; Zerubavel, 1981
Definition:	The extent to which plans are known and formalized.
Explication:	Scheduling is a measure of how accountable members are for their time.
Examples:	A day full of specific appointments reflects time that is tightly scheduled, whereas a day's activities with no specific timing boundaries is loosely scheduled.
Punctuality	
Literature:	Blau, 1994, 1995
Definition:	Timeliness regarding work-related tasks or responsibilities.
Explication:	Punctuality centers around measures of precise timing—at the macro level, getting the job done on time, or at the micro level, arriving at the appropriate place on time.
Examples:	The levels of concern, and even ability, regarding punctuality vary across different types of work. For example, fundamental research departments are generally characterized by a lack of concern with punctuality. They may operate according to flextime work arrangement, and are not provided strict deadlines. This is in contrast to the express mail industry where proper timing is a central aspect of their work at both micro and macro levels.
Delay	
Literature:	Blau, 1994, 1995; Perlow, 1997, 1999
Definition:	Tardiness regarding work-related tasks or responsibilities.
Explication:	Delay characterizes a late response to micro or macro timing issues, for example, running late to work or falling behind schedule on a project.
Examples:	When organizational members find that they are unable to make a deadline or meeting at a designated time, this reflects delayed timing. Because delay refers to either micro- or macro-related timing issues, it may be independent of members' punctuality.

Present time perspective	
Literature:	Jacques, 1982; Jones, 1988; Lauer, 1981; Schein, 1992; Waller, Conte, Gibson, and Carpenter, 2001
Definition:	A focus on the here-and-now.
Explication:	A present time perspective is reflected in members' focus on emergent, short-range issues.
Examples:	A concern with emergencies and crisis situations, or even narrowly defined work cycles, may lead organizational members in-particular roles to develop strategies characterized by a present time perspective.
Future time perspective	
Literature:	Hay and Usunier, 1993; Jacques, 1982; Jones, 1988; Lauer, 1981; Waller et al., 2001
Definition:	A focus on distant outcomes.
Explication:	A future time perspective is reflected in members' concern with long-term planning.
Examples:	Members in executive management positions are often expected to hold a future time perspective. Consistent with the notion of establishing a vision for the group, a future time perspective focuses on long-term achievement.
Scarcity	
Literature:	Hall, 1983; McGrath and Kelly, 1986
Definition:	The view of time as a limited and exhaustible resource.
Explication:	The metaphors used to describe time may provide an indication of a persons' view of time as scarce. The desire to save time reflects a sense of scarcity. The need to pass the time reflects a decreased sense of scarcity.
Examples:	Scarcity is often experienced in work situations characterized by either too many inputs within a given unit of time or not enough time to complete a given task.
Urgency	
Literature:	Gastorf, 1980; Meuser, Yarnold, and Bryant, 1987; Waller et al., 2001
Definition:	A preoccupation with deadlines and task completion.
Explication:	Members' views of urgency are focused on the task, whereas scarcity is focused on the (temporal) resources available to complete it.
Examples:	Members may have more than a sufficient amount of time to complete a task (an issue of scarcity) but still feel a sense of urgency in completing it because of the importance of the task.

they may still respond to specific work requests quite promptly. Therefore, they are enacting both punctuality and delay. Alternatively, there may be lateness norms surrounding arrival to regular meetings or to work—perhaps members usually arrive closer to 9:10 a.m. for a 9:00 a.m. meeting or shift (Blau, 1995). In this instance, it would be inaccurate to characterize this behavior as prompt; however, given the shared norms, it would be equally inappropriate to consider this as running late. These two concepts connote different things; members may be neither punctual nor delayed nor both. Results of the focus group revealed that many organizational work groups at WCU operated according to flextime work schedules, both in administrative roles and more broadly in the Department of Residential Life (Golden & Figart, 2000). In these contexts, being prompt to meetings has little meaning relative to not getting behind schedule on important projects.

Implications

Our overarching goal in this project was to provide a richer, more complex template with which to consider the theoretical and practical relationships between time and communication in organizations and to offer a theoretically grounded measure of organizational temporality. We approached this project from the standpoint of members' interaction and, consistent with a community-of-practice perspective (Wenger, 1998), asked organizational respondents to characterize the ways they referred to time with members of their immediate work group. We identified 11 distinct dimensions of time as experienced by these organizational members: flexibility, linearity, pace, perspective (present and future), precision, scarcity, scheduling, separation, urgency, and delay. Assuming that these dimensions are robust, (a) they encourage further theoretical development of their interrelationships and (b) they invite investigation of their relationship with other relevant communication constructs. We address each of these issues in the remainder of this article.

Relationships Among Temporal Dimensions

Evidence reported here for the existence of these 11 dimensions of organizational temporality, and for the distinction between work group members' temporal construals and their temporal enactments, can be a basis for exploring their interrelationships (and for testing the same in future research). At a meso level, pluritemporality (Nowotny, 1992) may be interpretable as, and fundamentally grounded in, variations surrounding the dual nature of organizational temporality: construals versus enactments of time. Furthermore,

Table 3
Interfactor Correlations

	1	2	3	4	5	6	7	8	9	10
1 = Urgency										
2 = Scarcity	.70									
3 = Pace	.64	.46								
4 = Punctuality	.16	.16	.29							
5 = Delay	.55	.45	.42	–.16						
6 = Scheduling	.18	.22	.13	–.08[a]	.42					
7 = Linearity	.07[a]	.07[a]	.14	.52	–.11	–.18				
8 = Present Time Perspective	.33	.26	.30	.36	.15	–.03[a]	.28			
9 = Future Time Perspective	.32	.22	.25	.43	.08[a]	–.03[a]	.29	.66		
10 = Flexibility	–.25	–.23	–.29	–.25	–.27	–.17	–.39	–.07[a]	–.06[a]	
11 = Separation	.33	.38	.43	.27	.39	.32	.23	.27	.20	–.41

a. Indicates nonsignificant correlations.

variations across temporal enactment dimensions—especially flexibility, scheduling, separation—may be those along which organizational pluritemporality is most evident and the threads with which groups most often weave their own meanings of time. Other temporal dimensions—linearity, present perspective, and urgency—may underlie threads of organizational monotemporality (Nandhakumar & Jones, 2001) necessary for effective trans-organizational coordination and productivity. Contrasts along all these dimensions should offer added insights into how organizations manage and simultaneously sustain manifestly objective yet variably subjective senses of organizational time (Mosakowski & Earley, 2000).

But at a more fundamental level, in what ways are these temporal dimensions interrelated? Our data are not sufficient to test for the causality implicit in the following discussion, but the factor correlations from this study, combined with others researchers' findings, are suggestive of interrelationships among dimensions of organizational temporality that can be specified and modeled here and tested in future longitudinal research. Let us first consider the relationships among temporal enactment dimensions and then potential relationships of temporal construals with temporal enactment dimensions.

As indicated in Table 3, the following pairs of temporal enactment dimensions in this study were correlated beyond chance expectation: Linearity × Punctuality (.52), Linearity × Flexibility (–.39), and Separation × Scheduling (.32). These findings are consistent with results of other investigations. For example, Hall's (1983) classic research describes monochronism as char-

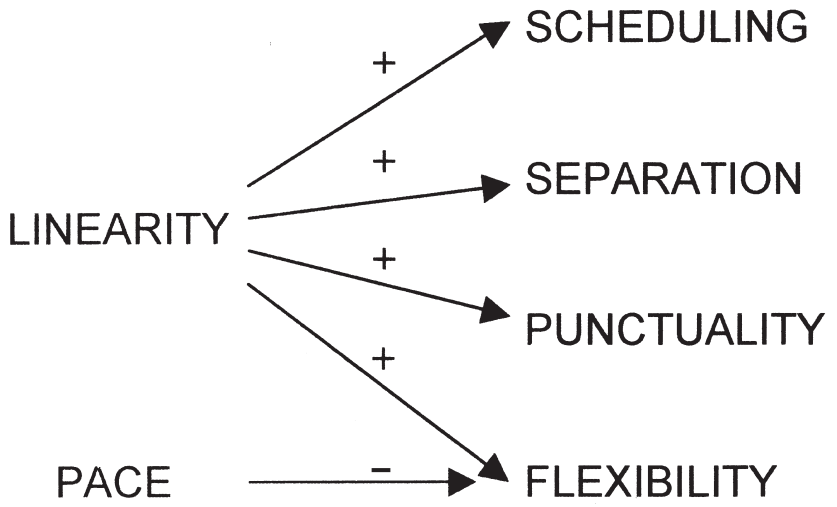

Figure 3. Relationships Among Temporal Enactments Dimensions

acterized by both doing one thing at time (linearity) and an obsessive concern with punctuality. Consistent with the negative correlation we report, linearity is linked to a *lack* of flexibility in Hall's view. The significant relationship between separation and scheduling coincides with Payne's (1993) work on calendar use where scheduling contributed to the compartmentalization of activities. Relatedly, Yakura's (2002) study of the use of timeline devices in information-technology consulting firms reveals the way such temporal structures inhere in scheduling, which, in turn, give rise to construals of separation in budgeting, project management, and other organizational practices. Okhuysen and Waller's (2002) analysis of work groups' use of time pacing as a semistructure reveals that pace can affect their construals of temporal flexibility surrounding other tasks and ambiguities in their environment. These relationships among temporal enactment dimensions are formally specified in Figure 3.

As for potential relationships between temporal construals and temporal enactments, it is first instructive to examine nonchance correlations in our data among the temporal construal dimensions. With regard to the significant relationship between Delay × Scarcity (.45) reported in Table 3, we would expect individuals who are delayed in their work to experience a feeling of time's scarcity. Perlow (1997) found that individuals who were running behind on their work constantly interrupted others because of the temporal

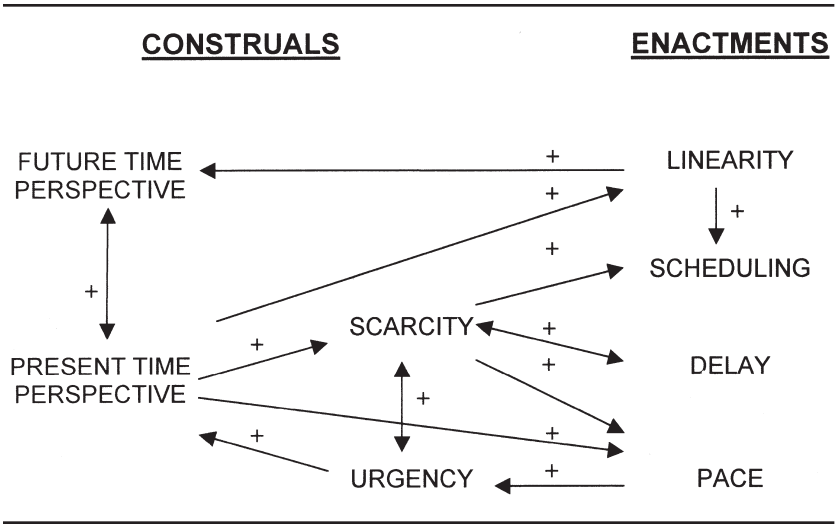

Figure 4. Temporal Construals and Temporal Enactments Interrelationships

scarcity they experienced. In her study, members' focus on pressing deadlines in the here and now (or a present time perspective) also led to a sense of urgency about the need to receive assistance from their coworkers in completing their work, consistent with the significant relationship between Present Time Perspective × Urgency (.33) that we observed.

And what of the potential for construals to predict temporal enactments? Early research by Friedman and Rosenman (1974) aligns with the relationship we report in Table 3 between a sense of time urgency and an increased pace (Urgency × Pace = .64). A more recent 19-month study of an Internet start-up firm by Perlow et al. (2002) suggests construals of urgency surrounding initial and important decision making creates a pace that fosters continual feelings of urgency surrounding subsequent decision making (i.e., a recursive speed trap). Consistent with the significant relationship between Future Time Perspective × Linearity (.29) that we observed, Hall's (1983) work suggests that a strong future time perspective is an important byproduct of a linear, monochronic orientation. Other studies enable further specification of potential relationships between the temporal construal dimensions and the temporal enactment dimensions identified in this investigation. For example, Waller et al. (2002) observed a steady progression in groups' attention to time as deadlines near and a related increase in temporal pacing (suggesting a positive relationship between present time perspective and pace). Furthermore, Barkema et al. (2002) identified a spate of macro-level chal-

lenges to organizations (globalization, digitization, and the like) that present a variety of time-related management challenges in the new millennium. Among these is the problematic positive relationship between temporal scarcity and the correlative pace of organizational operations. Taken together, these relationships among temporal construals and their predicted relationships to temporal enactment dimensions leads to specification of the following model (see Figure 4).

Temporal Dimensions and Organizational Communication Structures

A full theoretical account of organizational temporality would require analysis of the connections among the realms of time, history, culture, and system (organization/work groups), but that is beyond the purview and practicalities of this article. However, it is possible to discuss here the relationship between these dimensions of organizational temporality and other communication structures in organizations. For example, given evidence from previous research (Barley, 1988; Dubinskas, 1988a; Lawrence & Lorsch, 1967) linking coordination methods, feedback cycles, and workplace communication technologies to organizational temporality, it may be theoretically important and pragmatically useful to pursue additional questions about the relationship between these organizational communication structures and organizational temporality. Related to McPhee and Zaug's (2000) theoretical framework of the communicative construction of organizations, how do different types of interdependence/coordination (pooled, sequential, reciprocal; E. Thompson, 1967) affect organizational members' construals and enactments of time? Following from Barley's (1988) research on workplace technologies, what is the relationship between the constraints on interaction and task-completion intervals that characterize workplace technologies in use and organizational members' construals and enactments of time? In view of Dubinskas's (1988b) findings relating feedback cycles to scientists' conceptions of time, how do task completion interval and task variability facets of feedback cycles influence organizational members' construals and enactments of time? For example, members of organizational groups whose feedback cycles are characterized by an extended task completion interval and high task variability may have a stronger future time perspective than those in groups whose feedback cycles are characterized by brief intervals and low task variability. Equally important, how do temporal construals and enactments recursively affect each of these organizational communication structures?

Time and Communication Theory

Finally, in the area of communication studies in general, these 11 dimensions of organizational temporality invite attention to how (and why) communication theory has been *time-less* and what is lost by not attending theoretically to time. Which theories grapple well with which aspects of time; in particular, which aspects of temporality can be theorized independently of history and which cannot? What are the implications of theorizing time for the study of communication at the levels and in the contexts that communication scholars have pursued? What new arenas might be opened by increased attention to the relationship between time and communication?

Notes

1. In 2001, both the *Academy of Management Review* and *Work and Occupations*, a sociological journal, published special issues devoted exclusively to the study of time and work in organizations. In 2002, the *Academy of Management Journal* also published a special issue on time and organizations. Taken together, these three issues contributed more than two dozen new studies of organizational temporality.
2. The questionnaire used may be obtained from the first author.
3. The correlation matrices may be obtained from the first author.

References

Aapola, S. A. (2002). Exploring dimensions of age in young people's lives: A discourse analytical approach. *Time & Society*, *11*, 294-314.

Adam, B. (1990). *Time and social theory*. Philadelphia: Temple University Press.

Adam, B. (1995). *Timewatch: The social analysis of time*. New York: Polity Press.

Albert, S. (1995). Towards a theory of timing: An archival study of timing decisions in the Persian Gulf War. *Research in Organizational Behavior*, *17*, 1-70.

Albert, S., & Bell, G. G. (2002). Timing and music. *Academy of Management Review*, *27*, 574-593.

Ancona, D., & Chong, C. (1996). Entrainment: Pace, cycle and rhythm in organizational behavior. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior, Vol. 1* (pp. 251-281). Greenwich, CT: JAI Press.

Ancona, D. G., Okhuysen, G. A., & Perlow, L. A. (2001). Taking time to integrate temporal research. *Academy of Management Review*, *26*, 512-529.

Andrew, E. (1999). *Closing the iron cage: The scientific management of work and leisure*. Montréal, Canada: Black Rose Books.

Bailyn, L. (1993). *Breaking the mold: Women, men, and time in the new corporate world*. New York: Free Press.
Ballard, D. I., & Seibold, D. R. (2000). Time orientation and temporal variation across work groups: Implications for group and organizational communication. *Western Journal of Communication*, *64*, 218-242.
Ballard, D. I., & Seibold, D. R. (2001, November). *The experience of time at work: The role of organizational communication structures*. Paper presented at the annual meeting of the National Communication Association, Atlanta, GA.
Ballard, D. I., & Seibold, D. R. (2003). Communicating and organizing in time: A meso-level model of organizational temporality. *Management Communication Quarterly*, *16*, 380-415.
Barkema, H. G., Baum, J. A. C., & Mannix, E. A. (2002). Management challenges in a new time. *Academy of Management Journal*, *45*, 916-930.
Barley, S. R. (1986). Technology as an occasion for structuring: Evidence from observations of CT scanners and the social order of radiology departments. *Administrative Science Quarterly*, *31*, 78-108.
Barley, S. R. (1988). On technology, time, and social order: Technically induced change in the temporal organization of radiological work. In F. Dubinskas (Ed.), *Making time: Ethnographies of high-technology organizations* (pp. 123-169). Philadelphia: Temple University Press.
Barreau, H. (2000). The natural and cultural invariants of the representation of time in face of globalization. *Time & Society*, *9*, 303-317.
Bennett, J. B. (2000). *Time and intimacy: A new science of personal relationships*. Mahwah, NJ: Lawrence Erlbaum Associates.
Bergmann, W. (1992). The problem of time in sociology. *Time & Society*, *1*, 81-135.
Blau, G. (1994). Developing and testing a taxonomy of lateness behavior. *Journal of Applied Psychology*, *79*, 959-970.
Blau, G. (1995). Influence of group lateness on individual lateness: A cross-level examination. *Academy of Management Journal*, *38*, 1483-1496.
Blount, S., & Janicik, G. A. (2001). When plans change: Examining how people evaluate timing changes in work organizations. *Academy of Management Review*, *26*, 566-585.
Bluedorn, A. C. (2002). *The human organization of time: Temporal realities and experience*. Stanford, CA: Stanford Business Books.
Bluedorn, A. C., & Denhardt, R. B. (1988). Time and organizations. *Journal of Management*, *14*, 299-320.
Bruneau, T. (1974). Time and nonverbal communication. *Journal of Popular Culture*, *8*, 658-666.
Bruneau, T. (1977). Chronemics: The study of time in human interaction (with a glossary of chronemic terminology). *Communication, Journal of the Communication Association of the Pacific*, *6*, 1-30.
Bruneau, T. (1979). The time dimension in intercultural communication. In D. Nimmo (Ed.), *Communication yearbook 3* (pp. 423-433). New Brunswick, NJ: Transaction Books.

Bruneau, T. (1996). Subjective time, social interaction, and personal identity. In H. B. Mokros (Ed.), *Interaction & identity: Information and behavior, Vol. 5* (pp. 97-115). New Brunswick, NJ: Transaction Publishers.

Bryant, F. B. (2000). Assessing the validity of measurement. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and understanding more multivariate statistics* (pp. 99-146). Washington, DC: American Psychological Association.

Bucciarelli, L. L. (1994). *Designing engineers*. Cambridge, MA: MIT Press.

Butler, R. (1995). Time in organizations: Its experience, explanations, and effects. *Organization Studies*, *16*, 925-950.

Clark, P. (1990). Chronological codes and organizational analysis. In J. Hassard & D. Pym (Eds.), *The theory and philosophy of organizations; Critical issues and new perspectives* (pp. 137-163). New York: Routledge.

Cross, G. (1989). *A quest for time: The reduction of work in Britain and France, 1840-1940*. Berkeley: University of California Press.

Cross, G. (1993). *Time and money: The making of consumer culture*. London: Routledge.

Das, T. K. (1993). Time in management and organization studies. *Time and Society*, *2*, 267-274.

Dubinskas, F. (1988a). Cultural construction: The many faces of time. In F. Dubinskas (Ed.), *Making time: Ethnographies of high-technology organizations* (pp. 3-38). Philadelphia: Temple University Press.

Dubinskas, F. (Ed.). (1988b). Janus organizations: Scientists and managers in genetic engineering firms. In *Making time: Ethnographies of high-technology organizations* (pp. 170-232). Philadelphia: Temple University Press.

Farace, R. V., Monge, P. R., & Russell, H. M. (1977). *Communicating and organizing*. Reading, MA: Addison-Wesley Publishing.

Friedman, M., & Rosenman, R. H. (1974). *Type A behavior and your heart*. New York: Knopf.

Gastorf, J. W. (1980). Time urgency of the Type-A behavior pattern. *Journal of Consulting and Clinical Psychology*, *48*, 299.

George, J. M., & Jones, G. R. (2000). The role of time in theory and theory building. *Journal of Management*, *26*, 657-684.

Gersick, C. J. G. (1988). Time and transition in work teams: Toward a new model of group development. *Academy of Management Journal*, *31*, 9-41.

Gersick, C. J. G. (1989). Marking time: Predictable transitions in task groups. *Academy of Management Journal*, *32*, 274-309.

Gersick, C. J. G. (1994). Pacing strategic change: The case of a new venture. *Academy of Management Journal*, *37*, 9-45.

Gerson, M. (2000, August 8). Who has the time to be bored? Sadly, not enough of us. *USA Today*, p. 15A.

Giddens, A. (1984). *The constitution of society*. Berkeley: University of California Press.

Gleick, J. (1999). *Faster: The acceleration of just about everything*. New York: Pantheon Books.

Golden, L., & Figart, D. M. (2000). *Working time: International trends, theory, and policy perspectives*. New York: Routledge.

Gonzalez, A., & Zimbardo, P. G. (1985, March). Time in perspective: The time sense we learn early affects how we do our jobs and enjoy our pleasures. *Psychology Today*, pp. 20-26.
Goodman, P. S., Lawrence, B. S., Ancona, D. G., & Tushman, M. L. (2001). Introduction. *Academy of Management Review*, *26*, 507-511.
Graham, R. J. (1981). The role of perception of time in consumer research. *Journal of Consumer Research*, *7*, 335-342.
Gulick, L. (1987). Time and public administration. *Public Administration Review*, *47*, 115-119.
Gurvitch, G. (1964). *The spectrum of social time*. Dordrecht, The Netherlands: D. Reidel.
Hall, E. T. (1983). *The dance of life*. New York: Doubleday.
Hall, E. T., & Hall, M. R. (1990). *Understanding cultural differences*. Yarmouth, ME: Intercultural Press.
Hareven, T. K. (1982). *Family time and industrial time*. Cambridge, UK: Cambridge University Press.
Harrison, D. A., Price, K. H., Gavin, J. H., & Florey, A. T. (2002). Time, teams, and task performance: Changing effects of surface- and deep-level diversity on group functioning. *Academy of Management Journal*, *45*, 1029-1045.
Hassard, J. (1996). Images of time in work and organization. In S. R. Clegg, C. Hardy, & W. R. Nord (Eds.), *Handbook of organization studies* (pp. 581-598). Thousand Oaks, CA: Sage.
Hay, M., & Usunier, J. C. (1993). Time and strategic action: A cross-cultural view. *Time & Society*, *2*, 313-333.
Hellström, T., & Hellström, C. (2002). Time and innovation in independent technological ventures. *Human Relations*, *55*, 407-426.
Hochschild, A. R. (1997). *The time bind: When work becomes home and home becomes work*. New York: Henry Holt & Company.
Hofstede, G. (1985). The interaction between national and organizational value systems. *Journal of Management Studies*, *22*, 347-357.
Hofstede, G. (1999). Problems remain, but theories will change: The universal and the specific in 21st-century global management. *Organizational Dynamics*, *28*, 34-44.
Hofstede, G., & Bond, M. H. (1988). The Confucius connection: From cultural roots to economic growth. *Organizational Dynamics*, *16*(4), 4-21.
Holder, R. T., & McKinney, R. N. (1992). Time in the new workplace. *Journal for Quality & Participation*, *15*, 30-38.
Huy, Q. N. (2001). Time, temporal capability, and planned change. *Academy of Management Review*, *26*, 601-623.
Hylmö, A., & Buzzanell, P. M. (2003). The phenomenon of telecommuting and changing organizations: An organizational culture examination. *Communication Monographs*, *70*, 329-356.
Jaques, E. (1982). *The form of time*. London: Heinemann.
Jones, J. M. (1988). Cultural difference in temporal perspectives: Instrumental and expressive behaviors in time. In J. E. McGrath (Ed.), *The social psychology of time: New perspectives* (pp. 21-38). Newbury Park, CA: Sage.

Judd, C. M., Jessor, R., & Donovan, J. E. (1986). Structural equation models and personality research. *Journal of Personality*, *54*, 149-198.
Karau, S. J., & Kelly, J. R. (1992). The effects of time scarcity and time abundance on group performance quality and interaction processes. *Journal of Experimental Social Psychology*, *28*, 542-571.
Kirby, E. L., & Krone, K. J. (2002). "The policy exists but you can't really use it": Communication and the structuration of work-family policies. *Journal of Applied Communication Research*, *30*, 50-77.
Klein, K. J., & Kozlowski, S. W. (2000). From micro to meso: Critical steps in conceptualizing and conducting multilevel research. *Organizational Research Methods*, *3*, 211-236.
Lauer, R. H. (1981). *Temporal man: The meaning and uses of social time*. New York: Praeger Publishers.
Lawrence, P. R., & Lorsch, J. W. (1967). *Organization and environment: Managing differentiation and integration*. Boston: Harvard University Press.
Lee, H., & Liebenau, J. (1999). Time in organizational studies: Toward a new research direction. *Organization Studies*, *20*, 1035-1058.
Levine, R. V. (1988). The pace of life across cultures. In J. E. McGrath (Ed.), *The social psychology of time: New perspectives* (pp. 39-60). Newbury Park, CA: Sage.
Lim, S. G. S., & Murnighan, J. K. (1994). Phases, deadlines, and the bargaining process. *Organizational Behavior and Human Decision Processes*, *58*, 153-171.
Limaye, M. R., & Victor, D. A. (1991). Cross-cultural business communication research: State of the art and hypotheses for the 1990s. *Journal of Business Communication*, *28*, 277-299.
Macan, T. H. (1994). Time management: Test of a process model. *Journal of Applied Psychology*, *79*, 381-391.
Mainemelis, C. (2001). When the muse takes it all: A model for the experience of timelessness in organizations. *Academy of Management Review*, *26*, 548-565.
McGrath, J. E., & Kelly, J. R. (1986). *Time and human interaction: Toward a social psychology of time*. New York: Guilford Press.
McGrath, J. E., & Kelly, J. R. (1992). Temporal context and temporal patterning: Toward a time-centered perspective for social psychology. *Time & Society*, *1*, 399-420.
McPhee, R. D., & Zaug, P. (2000, February). *The communicative construction of organizations: A framework for explanation*. Paper presented at the annual meeting of the Western States Communication Association, Sacramento, CA.
Meuser, K. T., Yarnold, P. R., & Bryant, F. B. (1987). Type A behaviour and time urgency: Perception of time adjectives. *British Journal of Medical Psychology*, *60*, 267-269.
Mitchell, T. R., & James, L. R. (2001). Building better theory: Time and the specification of when things happen. *Academy of Management Review*, *26*, 530-547.
Moore, W. E. (1963). *Man, time and society*. New York: Wiley.

Mosakowski, E., & Earley, P. C. (2000). A selective review of time assumptions in strategy research. *Academy of Management Review*, *25*, 796-812.
Mumby, D. (1996). Feminism, postmodernism, and organizational communication: A critical reading. *Management Communication Quarterly*, *9*, 259-295.
Mumford, L. (1934). *Technics and civilization*. New York: Harcourt, Brace & Company.
Nandhakumar, J., & Jones, M. (2001). Accounting for time: Managing time in project-based team-working. *Accounting, Organizations and Society*, *26*, 193-214.
Neustadter, R. (1992). Beat the clock: The mid-20th century protest against the reification of time. *Time & Society*, *1*, 379-398.
Nicotera, A. M. (1994). The use of multiple approaches to conflict: A study of sequences. *Human Communication Research*, *20*, 592-621.
Nowotny, H. (1992). Time and social theory. *Time & Society*, *1*, 421-454.
Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.
Nyland, C. (1990). Capitalism and the history of work-time thought. In J. Hassard (Ed.), *The sociology of time* (pp. 130-154). New York: St. Martin's Press.
Okhuysen, G. A., & Waller, M. J. (2002). Focusing on midpoint transitions: An analysis of boundary conditions. *Academy of Management Journal*, *45*, 1056-1065.
Orlikowski, W. J. (2000). Using technology and constituting structures: A practice lens for studying technology in organizations. *Organizational Science*, *11*, 404-428.
Parks, C. D., & Cowlin, R. (1995). Group discussion as affected by number of alternatives and by a time limit. *Organizational Behavior and Human Decision Processes*, *62*, 267-275.
Payne, S. J. (1993). Understanding calendar use. *Human-Computer Interaction*, *8*, 83-100.
Perlow, L. A. (1997). *Finding time: How corporations, individuals, and families can benefit from new work practices*. Ithaca, NY: Cornell University Press.
Perlow, L. A. (1999). The time famine: Toward a sociology of work time. *Administrative Science Quarterly*, *44*, 57-81.
Perlow, L. A. (2001). Time to coordinate: Toward an understanding of work-time standards and norms in a multicounty study of software engineers. *Work and Occupations*, *28*, 91-111.
Perlow, L. A., Okhuysen, G. A., & Repenning, N. P. (2002). The speed trap: Exploring the relationship between decision making and temporal context. *Academy of Management Journal*, *45*, 931-955.
Poyatos, F. (1976). *Man beyond words: Theory and methodology of nonverbal communication*. Oswego: New York State English Council.
Robinson, J. P., & Godbey, G. (1997). *Time for life: The surprising ways Americans use their time*. University Park: Pennsylvania State University Press.
Roy, D. F. (1960). Banana time: Job satisfaction and informal interaction. *Human Organization*, *18*, 156-168.

Sabelis, I. (2001). Time management: Paradoxes and patterns. *Time & Society*, *10*, 387-400.
Schein, E. H. (1992). *Organizational culture and leadership*. San Francisco: Jossey-Bass.
Schriber, J. B., & Gutek, B. A. (1987). Some time dimensions of work: The measurement of an underlying dimension of organizational culture. *Journal of Applied Psychology*, *72*, 642-650.
Shockley-Zalabak, P. (2002). Protean places: Teams across time and space. *Journal of Applied Communication Research*, *30*, 231-250.
Starkey, K. (1989). Time and work: A psychological perspective. In P. Blyton, J. Hassard, S. Hill, & K. Starkey (Eds.), *Time, work, and organization* (pp. 57-78). New York: Routledge.
Taylor, F. W. (1911). *Scientific management*. New York: Harper & Row.
Thompson, E. P. (1967). Time, work-discipline and industrial capitalism. *Past and Present*, *38*, 56-97.
Thompson, J. A., & Bunderson, J. S. (2001). Work-nonwork conflict and the phenomenology of time: Beyond the balance metaphor. *Work and Occupations*, *28*, 17-39.
Traweek, S. (1988). Discovering machines. In F. Dubinskas (Ed.), *Making time: Ethnographies of high-technology organizations* (pp. 39-91). Philadelphia: Temple University Press.
Waller, M. J., Conte, J. M, Gibson, C. B., & Carpenter, M. A. (2001). The effect of individual perceptions of deadlines on team performance. *Academy of Management Review*, *26*, 586-600.
Waller, M. J., Giambatista, R. C., & Zellmer-Bruhn, M. E. (1999). The effects of individual time urgency on group polychronicity. *Journal of Managerial Psychology*, *14*, 244-256.
Waller, M. J., Zellmer-Bruhn, M. E., & Giambatista, R. C. (2002). Watching the clock: Group pacing behavior under dynamic deadlines. *Academy of Management Journal*, *45*, 1046-1055.
Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. New York: Cambridge University Press.
Wilson, P. (1997). *Calm at work: Breeze through your day feeling calm, relaxed and in control*. New York: Plume.
Wolburg, J. M. (2001). Preserving the moment, commodifying time, and improving the past: Insights into the depiction of time in American advertising. *Journal of Communication*, *51*, 696-719.
Yakura, E. K. (2002). Charting time: Timelines as temporal boundary objects. *Academy of Management Journal*, *45*, 956-970.
Ylijoki, O., & Mäntylä, H. (2003). Conflicting time perspectives in academic work. *Time & Society*, *12*, 55-78.
Zerubavel, E. (1979). *Patterns of time in hospital life*. Chicago: University of Chicago Press.
Zerubavel, E. (1981). *Hidden rhythms: Schedules and calendars in social life*. Chicago: University of Chicago Press.

Dawna I. Ballard *(Ph.D., University of California—Santa Barbara) is an assistant professor in the Department of Communication Studies at the University of Texas at Austin where she teaches courses in organizational communication, workplace temporality, and communication in work teams. Her research examines the mutual influence between time and communication in the workplace.*

David R. Seibold *(Ph.D., Michigan State University) is a professor and chair in the Department of Communication and director of the Interdisciplinary Graduate Program in Management Practice at the University of California—Santa Barbara. His research focuses on communication and organizational change, group processes and decision making, and interpersonal influence. Past editor of the* Journal of Applied Communication Research*, he has served as chair of the Organizational Communication Division of the International Communication Association. He has also consulted widely with business, government, and health organizations.*