11 Organizational temporality over time

Activity cycles as sources of entrainment

Dawna I. Ballard

Current research on organizational temporality is still, largely, timeless. That is, despite the growing corpus of scholarship in this area, much of the research ignores fundamental changes in member and team temporality across time. Additionally, researchers often fail to consider the cyclical processes that shape and are shaped by members' experience of time, as well as the overlapping activity cycles within which members engage at any single time. The resultant theories can offer a misleading portrayal of workplace temporality. One notable exception, the entrainment perspective, recognizes that cycles are definitional to time and the temporal processes experienced by living systems. The perspective was introduced into organizational research by McGrath and Rotchford (1983) and, although it has been elaborated by Ancona and Chong (1996) and Bluedorn (2002), it remains under-utilized in theoretical discussions and under-studied in empirical investigations of organizational temporality (see Ancona, Okhuysen & Perlow 2001; Blount 2004; Waller, Zellmer-Bruhn & Giambatista 2002; and Zaheer, Albert & Zaheer 1999 for notable exceptions). The value of entrainment in highlighting the communicative bases of organizational temporality is illustrated in the present chapter through the introduction of a typology of *activity cycles*. These activity cycles, the temporal 'containers' of work processes, enable and constrain members' behavior through the symbolic functions they serve, and the frame (Monge & Kalman 1996) that they create acts as a *Zeitgeber* for members' activities and interaction patterns.[1]

Hernadi (1992: 151) notes that 'social role-players, natural organisms and personal selves … always exist at the intersections of those *intersubjective*, *objective*, and *subjective* life times through which each of us participates in a variety of world times' [italics added]. While time is never solely objective, subjective or intersubjective – as each is shaped one by the other – this tripartite distinction is critical for investigations of organizational temporality. Examining one facet of time without the others presents a distorted picture of a heterochronous world (Hernadi 1992). A more nuanced approach toward temporality is critical for organizational research because it helps both scholars and practitioners alike to avoid reifying time and the temporal constructions which pattern members' work processes. In light of the explosive growth of work-time studies since the turn of the century, research which incorporates this fuller, more

complex understanding of time and organizations is critical to developing a more rigorous, theoretically-driven body of scholarship that reflects the full range of temporal experiences with which organizational members contend on a day-to-day basis.

The most neglected aspect of this tripartite relationship in extant research concerns how objective times shape and are shaped by subjective and intersubjective senses of time (see Ancona *et al.* 2001; Blount 2004; Waller, Zellmer-Bruhn & Giambatista 2002; and Zaheer *et al*. 1999 for notable exceptions). One way in which this oversight can be resolved is through taking seriously the notion of entrainment in everyday organizational activity and considering the multiple and overlapping activity cycles within which members find themselves engaged, as well as how this relates to their shared experience of time and even their personal temporal orientations and preferences. Using a meso-level theoretical framework introduced elsewhere (Ballard & Seibold 2003), this chapter offers a broad perspective on these relationships and introduces a typology of activity cycles – described variously as *concentration*, *cultivation*, *creation* and *commotion* cycles – that encapsulates the key features of these relationships and informs group and organizational research on workplace temporality. The typology considers objective, subjective and intersubjective aspects of time in the workplace, framing time as both an independent and a dependent variable within an entrainment perspective.

Consistent with Orlikowski and Yates's (2002) work on temporal structuring, the typology introduced here illustrates how both clock (objective) time as well as event (subjective and intersubjective) time constitute and are also constituted by members' temporal experience. It depicts how the (objective) activity cycles that enable and constrain team members' work processes capture the phase and tempo of organizational members' activities and their corresponding (subjective and intersubjective) experience of time, as well as how these activity cycles are a result of ongoing individual and social practices. Below, the theoretical framework within which this investigation is anchored is described and situated vis-à-vis broader discussions concerning organizational temporality. Following this is a brief examination of the utility of a meso-level practice-based approach in efforts at linking objective, intersubjective and subjective times, and an explication of the typology and description of its theoretical and practical implications. The chapter concludes with a summary of the major contributions of the typology.

A meso-level model of organizational temporality

Ancona and colleagues (2001) offer an integrative framework designed to provide a common set of terms and points of reference for the developing area of work-time scholarship. They describe three interrelated categories of temporal constructs – *conceptions of time*, *mapping activities to time*, and *actors relating to time* – that allow researchers simultaneously to clarify the focus of a given analysis as well as to consider multiple aspects and interrelationships concerning

these constructs. They recommend that when researchers use a term, the category (from among these three) be specified in order to set the context of use. Additionally, because 'our understanding of a variable in one category affects and is affected by variables in the other two categories', investigations should be described in terms of each of the three categories, highlighting the interrelationships (Ancona *et al*. 2001: 521). The simultaneous clarity and insight this offers should enable more fruitful exchanges with greater synergistic potential. In keeping with this call, a general overview of the meso-level model of organizational temporality (Ballard & Seibold 2003) of which the present typology is an extension, is provided below.

Conceptions of time

Temporal conceptions concern the different types of time organizations and their members' experience which, in turn, influence and are influenced by the ways members map activities to time (e.g., their temporal enactments) as well as the ways in which actors relate to time (e.g., their temporal construals). Hernadi's objective–subjective–intersubjective distinction described earlier is a useful way to characterize the varied ways through which organizational members come to experience 'time'. The meso model, a multi-level framework depicted in Figure 11.1, includes all three conceptions.

Specifically, time as objective is experienced through external pacers, or *Zeitgebers*, in the *organizational environment*, such as market forces that dictate product lifecycles. Time as subjective inheres in individuals' unique temporal experience associated with individual characteristics, including *social identity, personality*, *work–home conflicts* and *demographic characteristics*. Finally, time is experienced as intersubjective through the practices and values shared by a group of people – including *industry norms*, *occupational norms*, *organizational culture* and *work-group norms*, all of which are partially mediated through group-level interaction surrounding meso organizational structures including *activity coordination methods*, *workplace technologies* 'in use', and *feedback cycles* – whose activity cycles shape and are shaped by members' day-to-day routines (Barley 1986; Dubinskas 1988; Lawrence & Lorsch 1967; Orlikowski 2000; Thompson 1967).

Further, this theoretical model assumes a mutually constitutive relationship between time and communication. Social constructions of time exist through persons' coordination and interaction with others and, via social entrainment processes, persons' interaction and coordinative efforts shape their experience of time. The process of entrainment reflects how well (or how poorly) multiple activity maps – objective, subjective and intersubjective – mesh, or interact, with each other. These activity maps are described in more detail below.

Mapping activities to time

Clarifying the *conceptions* of time under investigation helps to inform the ways in which members' *map activities to time*. As Ancona and colleagues (2001:
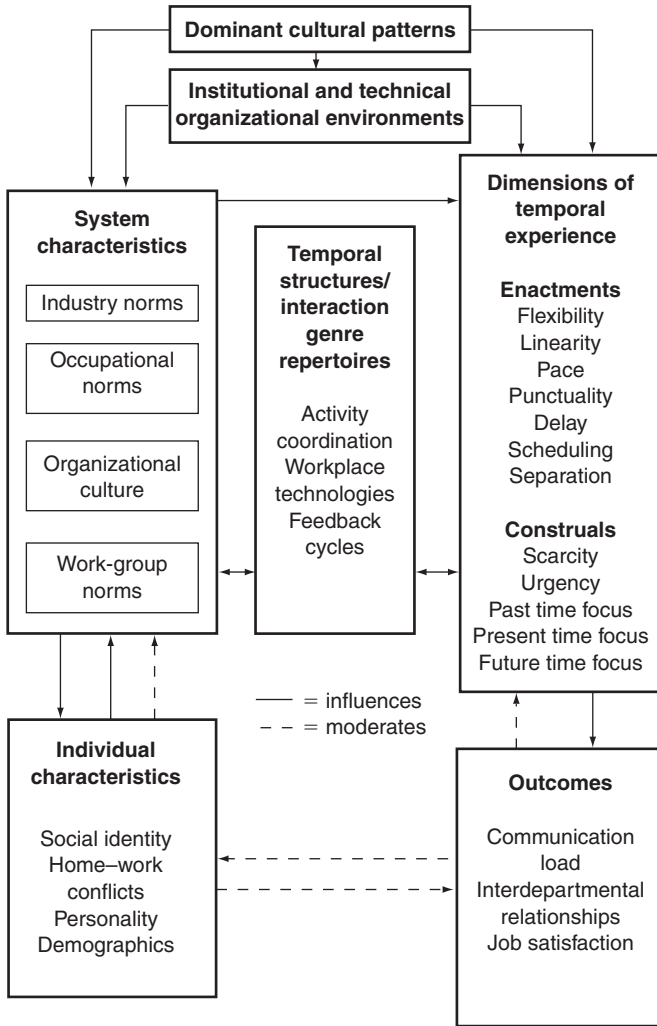
Figure 11.1 Meso-level model of organizational temporality.

515) describe, 'Many variables in this category involve an explicit and deliber-
ate creation of order – an engineering of the activities on the continuum'. As
described above, the larger framework is concerned primarily with shared-
intersubjective maps (common among a specific group or unit, created both as
an outcome of and guideline for interaction), but also accounts for personal-
subjective maps (constrained by individual factors, such as work–home con-
flicts, personality, etc.) and institutional-objective maps (that reflect product
lifecycles, market forces, and a variety of other environmental factors). The

entrainment of multiple activity maps can represent either a strategic advantage or a coordination problem. Sometimes they complement, and other times they conflict with, each other. In any case, a meso approach acknowledges the impact of multiple maps, at micro and macro levels, in organizational and team processes.

In the present framework, the ways in which organizational members' map activities to time is reflected among various temporal *enactments* (Ballard & Seibold 2003, 2004a, 2004b). Enactments refer to the way work group members 'perform' time. These include *flexibility*, the degree of rigidity in time structuring and task completion plans (Starkey 1989); *linearity*, the degree to which tasks are completed one at a time (Graham 1981); *pace*, tempo or rate of activity (Levine 1988); *punctuality*, the exacting nature of timing and deadlines (Schriber & Gutek 1987); *delay*, working behind schedule, which is orthogonal with punctuality; *scheduling*, the extent to which the sequencing and duration of plans, activities and events are formalized (Zerubavel 1981); and *separation*, the degree to which extraneous factors are eliminated or engaged in the completion of a work task (Perlow 1999).

The notion of enactment focuses our attention on more than behavior; enactments are both outcome and medium of interaction with the environment and, as such, highlight the ways in which temporality is communicatively constituted. As Weick (1979: 130) describes, 'the external environment literally bends around the enactments of people'. Enactments have an impact on the interaction of organizational members' with a variety of environmental factors, which in turn have an impact on these members, including their colleagues, clients and family members, as well as task timelines, project deadlines and the like. Additionally, Weick's perspective suggests that enactments not only shape but are also shaped by members' perceptions of the environment. It is, therefore, no surprise that variables in the category of activity mapping – in this case, enactments of time – influence how *actors relate to time*, the category of temporal variables described next.

Actors relating to time

Temporal *construals* represent the way organizational members 'interpret' or orient to time, and fit within Ancona and colleagues' category of *actors relating to time*. Consistent with their conceptualization of the relationship between actors relating to time and mapping activities to time, the ways in which members map activities to time (at personal-subjective, shared-intersubjective and institutional-objective levels) – vis-à-vis their temporal enactments – have an impact on organizational members' construals of time, or their relationship to time, as well as are shaped by these. These construals include *scarcity*, a focus on time as a limited and exhaustible resource (Hochschild 1997); *urgency*, a preoccupation with deadlines and task completion (Waller, Conte, Gibson & Carpenter 2001), and *present* and *future temporal foci* – orthogonal dimensions characterized by intentions oriented toward immediate action or long-term planning, respectively (Bluedorn 2002; Jones 1988).

To construe something means 'to interpret, give a meaning to, put a construction on (actions, things, or persons)' (Simpson *et al*. 2005). While perceptions are typically associated with personal, even neurological, processes, *construals* focus attention on the social process of deriving meaning and open up the possibility of shared interpretations as well. Within Ancona and colleagues' temporal framework, the ways in which actors relate to time shapes the first category, conceptions of time. Similarly, in this model, temporal construals inform and are informed by intersubjective, subjective and objective times. While each of these conceptions is important to the larger model, the structures that give rise to intersubjective temporal experiences within work groups, departments and related units are at the heart of the framework, reflecting its practice-centered approach, described briefly below prior to explicating the typology of activity cycles.

Linking objective, subjective and intersubjective times through activity cycles as sources of entrainment

Activities at the unit of analysis

Temporal construals and enactments are negotiated at various levels of analysis and through varied work structures (such as technologies 'in use', coordination methods and feedback cycles) that enable group members' day-to-day activities. As such, the study of workplace temporality is illuminated by a meso approach that integrates both micro and macro constructs. Meso research centers on the routines and activities that link various organizational units and, for that reason, facilitates multi-level analysis. As Rousseau and House (1994: 14) describe: 'For multi-unit activities involving complex organizational processes, it may be better to focus not on traditional organizational units but rather on the *activities* that link these units'.

The unit of study in the present project is the activity cycle that shapes and is shaped by the structures – i.e., technologies 'in use', coordination methods and feedback cycles – which pattern members' work. Each of these is fundamentally a *temporal structure*, 'created and used by people to give rhythm and form to their everyday work practices', Orlikowski & Yates 2002: 685). These temporal structures give rise to unique, multiple and interdependent *activity cycles* with which members' may become entrained. These activity cycles are a more meaningful unit of analysis than are the temporal structures themselves, because of the interpenetration of structures (Giddens 1984). When members are engaged with various technologies, coordination methods and feedback loops, the distinction among them (relating to the shaping of members' temporal experience) becomes an analytical rather than an empirical one (Ballard 2002).

The focus on activity cycles is also consistent with a practice perspective that proposes that in order to understand the nature of any cultural system, including time, we must understand its link to the practical demands of the institution in which it operates (Mohr 1998). In the present typology, activity cycles reflect the practical demands of members' work processes. Their position within the entrainment literature is described next.

Entrainment

The entrainment perspective rests on five assumptions (McGrath & Kelly 1986). First, much of human behavior is temporal – that is, regulated by cyclical, oscillatory and rhythmical processes. Second, these rhythms are endogenous, or intrinsic, to systems. Third, sets of internal rhythms become synchronized within each system (i.e., they adopt the same phase and periodicity of occurrence). Fourth, when persons interact, their internal rhythms can become entrained to one another. Fifth, the internal rhythms of individuals and social groups can become collectively entrained, or synchronized, to powerful external pacers (*Zeitgebers*), altering the phase, periodicity or magnitude of their endogenous rhythms. In organizations, this rhythm creates a dominant temporal ordering that exists as a compelling coordination mechanism (Ancona & Chong 1996). As the number of cycles captured by this rhythm increases, it becomes inertial.

Ancona and Chong (1996) further distinguish between *phase* and *tempo* entrainment, where phase entrainment concerns the synchronization of cycles and tempo entrainment concerns the change and alignment of speed. Tempo entrainment occurs when the pace of environmental change increases, and organizational units accelerate critical functions to match that pace. Phase entrainment entails a meshing of cycles to organize 'processes that would normally follow their own cycles into an interwoven pattern with a common aggregate rhythm' (Ancona & Chong 1996: 261). The fiscal year and school year stand as exemplars of the power of such *Zeitgebers*. The cues provided by these timelines (which are discussed later in the context of a *frame)*, rather than the timelines themselves, act as *Zeitgebers* for organizational members regarding the appropriate tempo and phase of activity.

An important note regarding the centrality of tempo, or *pace*, to organizational members' temporality is that, in previous research (Ballard & Seibold 2004b), among eleven dimensions of time empirically explored as part of this broader theoretical framework, it is the only dimension significantly correlated with every other dimension of time.[2] This suggests that tempo entrainment is centrally important in shaping members' larger temporal experience.

Bluedorn (2002) catalogs three possible phase entrainment relationships: lagging, synchronous and leading. A *lagging* entrainment relationship characterizes most research and development project cycles. While their activity and temporal experience becomes entrained to the deadline (the entraining rhythm), because of delay norms surrounding development tasks, the project (the entrained rhythm) is often completed at some distance from the actual deadline, reflecting a negative phase-angle difference. *Synchronous* entrainment, where the phases of both rhythms occur at the same time, is more common to other types of task deadline. Quarterly accounting cycles (the entraining rhythm) are more likely to occur in synchrony with accountants' work processes (the entrained rhythm), reflected in no phase-angle differences. Finally, *leading* entrainment occurs when the phases of entrained rhythm occur before the phases of the entraining rhythm. Undergraduate students meet with their advisor (the

entrained rhythm) to discuss their course schedule prior to the registration deadline (the entraining rhythm), reflected in a positive phase-angle relationship.

The central claim of this chapter is that activity cycles serve as *Zeitgebers* that entrain organizational members' activity patterns and concomitant experience of time. While the organization and its environment establishes activity cycles that are shared by all organizational members, each work group is also bound by a distinct set of activity cycles that guide their unique contribution to the organization as a whole and distinguish them from other groups. The typology described next is concerned with the overlapping and interdependent nature of these cycles.

Activity cycles as sources of entrainment

Activity cycles, the temporal 'containers' of work processes, both reflect and facilitate members' entrainment with various temporal structures. These structures enable and constrain members' behavior through the symbolic functions they serve as well as through the ways in which they direct members' interaction patterns. For example, recurrent task deadlines demarcate a range of possible activity cycles depending on how members interpret what the deadline means for their work and related activities. They may decide that it has no importance for their work (the consequences for missing it might be meaningless to them), that a lagging relationship to it will suffice (this may be a function of industry or organizational norms), or that their activity cycle must be precisely synchronized with it (because the consequences for missing it are unacceptable to them). Thus, members may apprehend the deadline in any number of ways that can have consequences for structuring their day-to-day interaction patterns (Ancona & Chong 1996; Bluedorn 2002). In doing so, they facilitate certain communication patterns – at times enabling group members to hold lengthy meetings contemplating the task, and at other times constraining members' exchanges to brief, task-focused sessions.

In either of the latter two instances, when interaction is organized around a recurrent deadline, it leads to entrainment processes where members adapt their activity cycles to match the phase and tempo that it introduces. There are two important things to note concerning phase entrainment. First, the phase of the cycles may or may not be precisely synchronized – there are often time-lags involved. Second, groups develop different norms regarding appropriate time-lags, or delay, and these norms shape their construction of time. For example, in research and development departments, a several-month lag time (after the deadline) is typical: this would not be characterized as delayed. In contrast, completion times in accounting departments are generally expected to coincide with deadlines much more precisely. In both cases, the deadline serves to shape and give meaning to members' temporality.

While clock time is drawn on through the process of assigning deadlines, vis-à-vis questions regarding whether members can 'afford' a long lunch or protracted meetings, event time is also invoked in the process of work groups

making decisions regarding what the deadline actually means. Evidence of these overlapping processes is seen through scale development efforts that tested the construct validity of *precision* as a relevant dimension of time. Rather than precision standing as one construct, factor analyses found two orthogonal dimensions representing *delay* and *punctuality* (Ballard & Seibold 2004b). Individuals reported that their work group could talk about their projects as delayed (representing clock time) *and* still consider them punctual (reflecting event time); thus, members' timing is shaped by both clock and event-based cues. Yakura's (2002) findings similarly support the idea that temporal structures are a nexus for interpretation and negotiation by different groups and serve to distinguish units from one another.

At least three aspects of activity cycles must be noted. First, activity cycles occur at multiple timescales, such as the workday, task timeline and fiscal year (Ancona & Chong 1996). Second, organizational members are engaged at various points within multiple activity cycles at a given point in time, an issue underscored by Marks, Mathieu and Zaccaro's (2001) temporally-based framework and taxonomy of team processes. These authors assert that teams perform in temporal cycles of goal-directed activity called 'episodes', and that members are simultaneously engaged in multiple episodes. Input–process–output relationships also unfold over a series of related cycles, where the outcomes from initial episodes can be inputs for the next cycle. Third, various activity cycles signal different interaction genres (Orlikowski & Yates 1994), drawing attention to the cyclic nature of communicative processes. Each of these issues is captured in the typology described next.

Developing the typology

Monge and Kalman (1996) offer a set of terms that constitute a vocabulary for building frameworks that depict communication processes. The current typology applies this vocabulary in considering various activity cycles. The metaphor of windows and panes is used to discuss cycles, process, and the related sequentiality, simultaneity and synchronicity that might characterize them. *Time windows* represent the temporal boundaries of, or the time required to contain, a given communication phenomenon or interaction genre. A time window may be brief (as in a five-minute bank teller transaction) or extended (as in a semester-long assignment or even a five-year research and development project), and reflects both micro- and macro-pacers, respectively. Time windows lie between *moments* that serve to define the boundaries of a window, and are typically instantaneous (e.g., in assembly line work) but may consist of longer periods of time (e.g., nursing shift schedules may include four days on and three days off) and may even vary in size (e.g., the winter semester break versus the summer semester break). Put differently, the time between moments, or recurrent activities, constitutes the time window.

Time windows also contain *panes*, which are smaller regions of time that constitute the window, like miniature time windows. They reflect the fact that

different-sized windows will offer a view on different aspects of the same phenomena (Zaheer *et al*. 1999). It is important to look through multiple windows in order to choose the best window for the phenomena of interest. For example, the proper time window(s) to understand managers' work processes are different than the proper window(s) for understanding the process of research and development (Dubinskas 1988). Particularly, choosing a window that is too small will obscure important features that relate to the next concept, cycles. *Cycles* are marked by at least two panes in a window, and illustrate a pattern (or redundancy) of events over time, underscoring the need to be sensitive to window size. The relative position of panes in Figure 11.2 helps to illustrate the potentially overlapping nature of varied activity cycles.

Finally, *frames* are bracketing events and activities that emerge in social interaction (rather than clock time). Varied temporal structures create different frames and are represented by unique activity cycles. These structures introduce an exogenous cycle. Examples of frames include workplace technologies 'in use' (Barley 1986), coordination activities (Thompson 1967), feedback loops (Lawrence & Lorsch 1967) and regular meetings (Ballard & Gomez 2006). Because frames are created by temporal structures, members will often have to contend with entrainment to multiple, often competing, activity cycles, either due to multiple group memberships (as might be the case with conflicting personal and professional demands; Hochschild 1997) or associated with one role (such as is typically the case for managers; Sabelis 2002). Frames are powerful symbolic tools that shape and guide human interaction due to their temporal structuring of members' day-to-day practices. It is important to note that a given activity is usually framed by multiple temporal structures. For instance, a software engineer interacts with particular technologies, guided by a specific deadline, and using appropriate coordinative methods in order to complete a task. Because these structures interpenetrate and make sense only in light of each other, multiple frames will direct an activity cycle. Therefore, in practice, it is the activity cycles associated with these frames that entrain members' behavior within particular windows – not the temporal structures.

The typology in Figure 11.2 draws upon this vocabulary and the entrainment perspective to discuss the ways in which activity cycles shape members' temporal experience. Previous research points to the time window and the task variability of an activity as central to shaping that experience (Barley 1986; Dubinskas 1988; Lawrence & Lorsch 1967; Thompson 1967). The time window depicted here refers to the length of time it takes organizational members to perform a complete task, or the 'timeline' of their activity, which may range from a few seconds to several years. Task variability refers to the level of uncertainty and unpredictability involved in task execution, which may range from a mundane, routinized task with fairly predictable results to a completely novel task with highly uncertain outcomes. Together, these two axes form four different types of activity cycles, characterized variously as *concentration*, *cultivation*, *commotion* and *creation cycles*. The multiple frames make up an activity cycle that constitutes the *Zeitgeber*. For instance, the beginning and end of a call to a
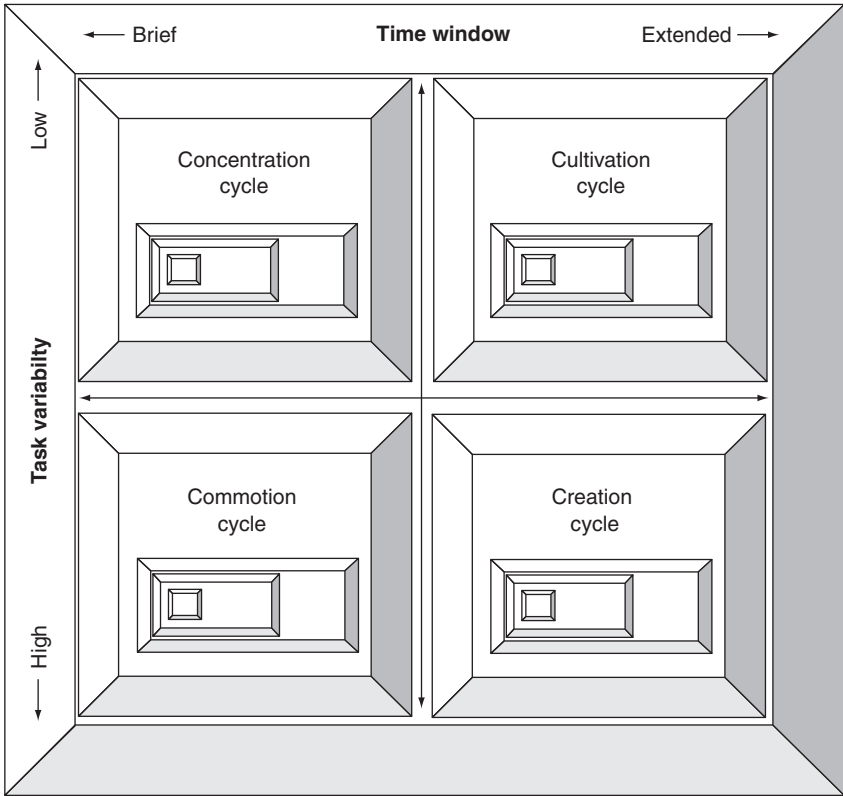
Figure 11.2 Typology of activity cycles.

911 operator would make up the frame that alerts the operator to the proper actions to take within that window. Hierarchically nested panes reflect various parts of a cycle – in this case, a beginning, middle and end – consistent with the punctuated equilibrium model and its related research (Gersick 1988; Okhuysen & Waller 2002). Below, examples from studies regarding the temporality of various occupational groups are used to illustrate the central differences across activity cycles:

*   *Concentration and cultivation cycles*. In a study of luxury fitness clubs, unique service dimensions of the front reception staff and personal trainers were explored via their temporal enactments (Ballard, Lammers & McCann 2004). First, the front reception staff members were charged with expeditiously greeting clients, processing their entry cards and handling any expressed pre-workout needs. These activities took place within a brief span of time (minutes) and were highly routinized – involving standardized greetings and a quick swipe of the card, followed by empty 'down-time'

between clients' arrival, a type of activity that represents a *concentration cycle*, owing to periods of concentrated activity being interspersed with inactivity and the absence of notable deviation. In contrast, the clubs' personal trainers were charged with establishing long-term relationships with clients for the purpose of improving and maintaining their fitness levels. The task of improving an individual's level of fitness, as well as the attendant relationship, unfolds over an extended period of time. While there is more variation in the challenges that trainers face compared to front reception staff, there are prescribed, known methods for building fitness and client relationships. As such, this is considered a *cultivation cycle* – it involves long-term processes outside of one's immediate control, but within established parameters of development.

- *Creation and commotion cycles*. The level of variability in cultivation cycles contrasts sharply with that found in the third type of activity cycle. Dubinskas' (1988) and Lawrence and Lorsch's (1967) investigations describe the activity cycles of research and development groups as highly extended and characterized by enormous task variability. The fundamental task of these groups is to create new things – so neither the timeline nor the outcome can ever really be known. Aptly, this is called a *creation cycle*. Finally, Weick's study of the mindfulness practices of firefighters (Weick & Sutcliffe 2001) identifies relevant characteristics of the last activity cycle type – wherein specific tasks are inordinately variable but must be executed over a defined and (generally) brief span of time. The variability stemming from these tasks is of a different nature than in creation cycles – the variability arising from each task does not inhere in a novel undertaking *per se*, but in the intrinsic capacity of the situation to dramatically change hinged on the slightest perturbation. As such, basic job duties occur within *commotion cycles*, characterized by moment-to-moment, rapidly unfolding and changing events that must be managed instantly.

These examples of prototypical work that is enabled and constrained through each of the various activity cycles is instructive in illustrating differences across the quadrants and, indeed, pluritemporality (Yakura 2002), or temporal variation across work groups. However, examination of work that inherently exists in more than one of these quadrants also highlights temporal variation *within* work groups. For example, managers often operate simultaneously in both commotion and cultivation cycles. That is, their job requires them to manage those day-to-day problems that arise as well as long term development projects for the future of the group (Sabelis 2002). At any given time they may be operating in one or the other or both depending on the emergent situation. Other groups, like event planners, are characterized by seasonal changes in their work (Clark 1985). Based on the nature of their tasks, they might predictably be engaged in either creation or commotion cycles at various times throughout the year.

The window framework developed by Monge and Kalman (1996) offers an effective way to deal with the complexities of multiple temporal structures and

overlapping activity cycles. For example, bringing the level of analysis down to an individual pane captures a specific moment – in the case of a college professor, a given pane might reveal the activity of grading papers. In contrast, broadening the view upward several levels to the time window might reveal a nine-month journal submission process, an annual internal evaluation cycle, a two-year data collection project, and preparations for a triennial hosted conference – all of which partially overlap with the others (including the grading pane), are repeated at regular intervals, and typically are separated by moments of irregular duration. At one moment, in a given pane, each of these frames will overlap. The overlapping frames associated with teaching, research and service activities are an inherent aspect of professorial work. Nonetheless, because undergraduate students do not see the larger time window and frames within which faculty work is situated, the grading pane seems to offer an accurate and complete view on professorial activities. The importance of timescale in understanding and studying entrainment within multiple activity cycles (Zaheer *et al*. 1999) is apparent from these examples.

Conclusion

The claim of this chapter is that workplace temporality can be portrayed better by applying an entrainment perspective to the study of temporal structuring. The nexus between *entrainment*, which rests on the assumption that cycles are definitional to time and the temporal processes experienced by living systems, and *temporal structuring* (including related genre repertoires), is centered on *communication*. Therefore, employing a framework designed to elucidate communication processes, a typology of *activity cycles* was introduced – characterized variously as *concentration*, *cultivation*, *commotion* and *creation* cycles.

The typology offered not only highlights the role of change across time, multiple timescales, and overlapping activity cycles in understanding members' temporality, it also provides a *unifying framework for assorted temporal structures*. That is, rather than focusing on the role of specific structures, such as different technologies and coordination methods in leading to unique temporal outcomes, focus is directed at the activity cycle associated with these multiple overlapping frames. The interpenetration of structures makes it unfeasible to explore the ways in which particular structures shape temporality over and above others.

In summary, each of these considerations represents major extensions to the theoretical framework under-girding the present typology (Ballard & Seibold 2003) and helps to facilitate the study of entrainment processes from a meso perspective. Horning, Ahrens and Gerhard (1999: 293) describe:

> Time is neither an abstract entity nor is it a neutral medium, but a result of human engagement with the world. We cannot understand time by looking at it alone but rather by analyzing the ways people are involved in everyday life.

The present typology provides this understanding of organizational temporality from the perspective of members' practices.

Notes

1 *Zeitgeber*, which originated as a German word literally meaning *time* (*Zeit*) *giver* (*Geber*), refers to a pacing agent or synchronizer (Bluedorn 2002).
2 It is correlated with: urgency$=0.64$; scarcity$=0.46$; punctuality$=0.29$; delay$=0.42$; scheduling$=0.13$; linearity$=0.14$; present time focus$=0.30$; future time focus$=0.25$; flexibility$=-0.29$; separation$=0.43$.

References

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.

Ballard, D. I. (2002) *The communicative construction of time: explication and partial test of a meso organizational model*, Dissertation completed at the University of California, Santa Barbara.

Ballard, D. I. & Gomez, F. (2006) 'Time to meet: meetings as sites of organizational memory', in J. Parker, M. Crawford & P. Harris (eds) *Study of time XII: Time and memory*, pp. 301–312, Boston, MA: Brill.

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.

Ballard, D. I. & Seibold, D. R. (2004a) 'Communication-related organizational structures and work group members' temporal experience: the effects of interdependence, type of technology, and feedback cycle on members' views and enactments of time', *Communication Monographs*, 71: 1–27.

Ballard, D. I. & Seibold, D. R. (2004b) 'Organizational members' communication and temporal experience: scale development and validation', *Communication Research*, 31: 135–172.

Ballard, D. I., Lammers, J. C. & McCann, R. (2004) 'The speed of service: Intra-organizational and cross-national comparisons', Paper presented at the annual meeting of the National Communication Association, Chicago, IL: November 2004.

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.

Bluedorn, A. C. (2002). *The human organization of time: Temporal realities and experience*. Stanford, CA: Stanford Business Books.

Blount, S. (ed.) (2004) 'Time in groups', in E. A. Mannix & M. A. Neale (Series eds) *Research on managing groups and teams*, Vol. 6, Boston, MA: Elsevier.

Clark, P. (1985) 'A review of the theories of time and structure for organizational sociology', in S. B. Bacharach & S. M. Mitchell (eds) *Research in the sociology of organizations*, pp. 35–79, Greenwich, CT: JAI Press.

Dubinskas, F. 1988. 'Janus organizations: scientists and managers in genetic engineering firms' in F. Dubinskas (ed.) *Making time: Ethnographies of high-technology organizations*, pp. 170–232, Philadelphia, PA: Temple University Press.

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.

Giddens, A. (1984) *The constitution of society: outline of the theory of structuration*, Berkeley, CA: University of California Press.

Graham, R. J. (1981). 'The role of perception of time in consumer research', *Journal of Consumer Research*, 7: 335–342.

Hernadi, P. (1992). 'Objective, subjective, intersubjective times: Guest editor's introduction', *Time & Society*, 1, 147–158.

Hochschild, A. R. (1997) *The time bind: When work becomes home and home becomes work*, New York, NY: Henry Holt and Company.

Horning, K. H., Ahrens, D. & Gerhard, A. (1999) 'Do technologies have time? New practices of time and the transformation of communication technologies', *Time & Society*, 8: 293–308.

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.

Lawrence, P. R. & Lorsch, J. W. (1967) *Organization and environment: Managing differentiation and integration*, Boston, MA: Harvard University Press.

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.

Lorsch, J. W. & Morse, J. J. (1974) *Organizations and their members: A contingency approach*, New York, NY: Harper & Row.

Marks, M. A., Mathieu, J. E. & Zaccaro, S. J. (2001) 'A temporally-based framework and typology of team processes', *Academy of Management Review*, 26: 356–376.

McGrath, J. E. & Kelly, J. R. (1986) *Time and human interaction: Toward a social psychology of time*, New York, NY: Guilford Press.

McGrath, J. E. & Rotchford, N. L. (1983) 'Time and behavior in organizations', *Research in Organizational Behavior*, 5: 57–101.

Mohr, J. W. (1998) 'Measuring meaning structures', *Annual Review of Sociology*, 24 (1): 345–370.

Monge, P. R. & Kalman, M. E. (1996) 'Sequentiality, simultaneity, and synchronicity in human communication', in J. H. Watt & C. A. VanLear (eds) *Dynamic patterns in communication processes*, pp. 71–92, Thousand Oaks, CA: Sage.

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', *Organization Science*, 11, 404–428.

Orlikowski, W. J. & Yates, J. (1994) 'Genre repertoire: the structuring of communicative practices in organizations', *Administrative Science Quarterly*, 39: 541–574.

Orlikowski, W. J. & Yates, J. (2002) 'It's about time: temporal structuring in organizations', *Organization Science*, 13, 684–700.

Perlow, L. A. (1999) 'The time famine: Toward a sociology of work time', *Administrative Science Quarterly*, 44: 57–81.

Rousseau, D. M. & House, R. J. (1994) 'Meso organizational behavior: avoiding three fundamental biases', in C. L. Cooper & D. M. Rousseau (eds) *Trends in organizational behaviour*, Vol. 1, pp. 13–30, New York, NY: John Wiley & Sons.

Sabelis, I. H. J. (2002) *Manager's times: A study of times in the work and life of top managers*, Amsterdam: Bee's Books.

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.

Simpson, J. *et al*. (eds) (2005) *OED Online*, Oxford: Oxford University Press.

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, NY: Routledge.

Taylor, F. W. (1911) *Scientific management*, New York, NY: Harper & Row.

Thompson, J. D. (1967) *Organizations in action*, New York, NY: McGraw-Hill.

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., Zellmer-Bruhn, M. E. & Giambatista, R. C. (2002) 'Watching the clock: Group pacing behavior under dynamic deadlines', *Academy of Management Journal*, 45 (5), 1046– 1055.

Weick, K. E. (1979) *The social psychology of organizing*, 2nd edn. New York, NY: McGraw-Hill.

Weick, K. E., & Sutcliffe, K. M. (2001). *Managing the unexpected: Assuring high performance in age of complexity*, San Francisco, CA: Jossey-Bass.

Yakura, E. K. (2002) 'Charting time: Timelines as temporal boundary objects', *Academy of Management Journal*, 45, 956–970.

Zaheer, S., Albert, S. & Zaheer, A. (1999) 'Timescales and organizational theory', *Academy of Management Review*, 24: 725–741.

Zerubavel, E. (1981) *Hidden rhythms: Schedules and calendars in social life*, Chicago, IL: University of Chicago Press.