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**TIME FLIES LIKE AN ARROW:
TRACING ANTECEDENTS AND
CONSEQUENCES OF TEMPORAL ELEMENTS
OF ORGANIZATIONAL CULTURE**

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**TIME FLIES LIKE AN ARROW:
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INTRODUCTION

Time has recently become a more central focus in management research and practice. Time to market has become a critical issue in many industries, with ever shortening new product development times. New terms are being coined in organizational research like industry “clockspeed” (Carillo, 2000; Fine, 1996; Mendelson & Pillai, 1999), referring to the pace at which innovation occurs, and “high velocity” (Eisenhardt & Bourgeois, 1988), referring to the need to make decisions in less time. In the popular press, references are littered across the pages referring to “Internet time” and “doing business the dot-com way.” Time horizons for “dot-coms” and other high-tech organizations are contracted in the face of competitive pressures. The recognition of the impact of time pressure and speed on organizational life is not new, as noted by W. R. Greg (1877) on “Life at High Pressure” (p. 263):

“Beyond doubt, the most salient characteristic of life in this latter portion of the 19th century is its SPEED – what we call its hurry, the rate at which we move, the high-pressure at which we work – and the question to be considered is, first, whether this rapid rate is in itself a good; and, next, whether it is worth the price we pay for it – a price reckoned up, and not very easy to ascertain.”

However, little direct attention to time in organizational research occurred until relatively recently. Recognizing the importance of time and timing to organizations, over a decade ago, researchers began calling for greater attention to temporal variables in organizational research (Ancona & Chong, 1991; Bluedorn & Denhardt, 1988; McGrath & Rotchford, 1983).

Despite increased focus on time in several areas of organizational research, relatively little direct attention to time has occurred in the area of organizational culture (notable exceptions include Bluedorn, 2000; Bluedorn, Kalliath, Strube, & Martin, 1999; Onken, 1999; Schein, 1992; and Schriber & Gutek, 1987). Schein (1992) made clear the connection between time and organizational culture when he commented that “there is probably no more important

category for cultural analysis than the study of how time is conceived and used in a group or organization” (p. 114). Time has often been an implicit element in models and descriptions of organizational culture, but is rarely the focus of cultural analysis at the organizational level. Despite the potentially potent impact time can have on organizational behavior, and the increasing awareness of the importance of time in organizational behavior research, surprisingly little direct attention has been paid to temporal elements of organizational culture.

In this chapter we examine how organizational cultures reflect different assumptions about time. We address two questions. First, "What temporal assumptions characterize organizational cultures?" And second, "What impact do these assumptions have on work behaviors?" As Bluedorn (2000) noted, so little has been written about time and organizational culture, and so much has been left unsaid, that it is prohibitive to cover all aspects of this issue in a single chapter. So here we contribute by developing a framework of antecedents to temporal aspects of organizational culture and examine a few key consequences. We begin with a brief general review of time in organizational research. Then we review the limited research on time and organizational culture. Based on this review, we propose a refined conceptualization of temporal elements in organizational culture. We then develop a model of potential antecedents to temporal aspects of organizational cultures. Next, we discuss the potential impact of organizational assumptions concerning time. We conclude with suggestions for future research.

TIME IN ORGANIZATIONAL RESEARCH

Over the past decade and a half, time has become a more prominent feature in organizational behavior research; this fact is reflected in Bluedorn and Denhardt’s assertion that “Issues of time and timing are absolutely central to modern management” (1988: 299), and in

Schriber and Gutek's definitive statement that "Time is a basic dimension of organizations" (1987: 642). Although often not a central theme, time has been examined in prior organizational research. This includes research about norms relating to time (e.g. Roy, 1952), time as a contingency variable in choice of leadership style (Vroom & Yetton, 1973; Vroom & Jago, 1978), time orientation across units as a key element of differentiation (e.g. Lawrence & Lorsch, 1967), timing of feedback, and time aspects of goal setting, including the motivational aspects of deadlines (e.g. Locke & Latham, 1984), time issues in agenda setting (Pfeffer, 1992), schedules of reinforcement, time and choice of conflict handling mode (Farmer & Roth, 1998), and the determinants and consequences of procrastination. A full review of this literature is prohibitive here; however, research in three general areas--temporal aspects of decision making, motivation and performance under deadlines, and new product development--illustrate recent trends and highlight the importance of time in organizational research.

Temporal Aspects of Decision Making

Time is an important factor in decision making, and we will later suggest that temporal aspects of decision making, which have been explored primarily at the individual and group levels, may have important consequences at the organizational level.

There is substantial evidence that time constraints influence decision mode. For example, the Janis and Mann (1977) model argues that decision mode depends, among other things, on time available for decision making. In cases with little stress and ample time, decision makers are likely to engage in unconflicted modes, making "easy" decisions to maintain the status quo or change, resulting in complacency and ineffectiveness. Alternatively, under high levels of stress individuals are likely to engage in defensive avoidance (with an emphasis on confirmatory behavior) if sufficient time is available, or in hypervigilance (panic) if it is not. Vigilance,

resulting in effective search and processing of information, is likely only under moderate stress. This suggests that the relationship of time pressures to decision outcomes may be complex.

In addition, script-based behavior (behavior that is well-rehearsed and “automatic,” rather than consciously considered) may be chosen in the face of time constraints since it is faster than vigilant processing (e.g., Brewer, 1988; Gioia & Poole, 1984; Shiffrin & Schneider, 1977). Related work suggests a bias toward short-term thinking in the face of threat (e.g., Gray, 1999). Further, the literature on temporally-extended choice argues that what is best at a given point in time may conflict with what is best overall, particularly when choices must be enacted over time and outcomes change because they are repeatedly chosen (e.g., Herrnstein 1990).

Time constraints may influence patterns of information search and use in other ways as well. For example, substantial research suggests that time constraints impact the nature and degree of pre-decisional information search. Time constraints typically cause alternatives to be evaluated on the basis of only a narrow subset of relevant attributes (e.g., Slovic, 1969) and to lead to a focus on negative information to quickly eliminate alternatives. In general, individuals under time constraints use heuristics to reduce cognitive load; those heuristics are generally screening approaches, such as satisficing or elimination by aspects, which eliminate alternatives that do not meet specified hurdles (e.g., Tversky & Kahneman, 1974). Reliance on such screening heuristics, rather than scoring (optimizing) approaches, is generally suboptimal, though consequences may depend on a variety of task and situational factors (Hogarth, 1981).

A final issue relates to the roles of individual differences in decision making under time constraints. For example, research has demonstrated that dogmatic individuals are more comfortable than non-dogmatics in making decisions under time constraints, use less information in making a decision, are faster decision makers, and are more reluctant to revise their opinions

in the face of disconfirming information (e.g., Long and Ziller, 1965; Taylor and Dunnette, 1974). Similarly, risk seekers make decisions more rapidly than risk averse individuals and use less information in making a decision. Type A's feel greater time pressure and engage in polyphasic behavior, even when such behavior isn't required. Type A behavior has also been related to time structure and purpose (Mudrack, 1999; Bond and Feather, 1988). Individuals' circadian rhythms (body clocks) influence when they are at their optimal decision making efficiency; there are many different body clocks, with potentially different time-related implications (Abdulla, 1999; Szurmi, 2000). Cognitively complex individuals, along cognitive dimensions such as dimensional integrative complexity, rule integrative complexity, articulation, and discrimination (e.g., MacNeil, 1974), may be relatively more able to handle complex decision tasks under time constraints.

These individual differences in temporal aspects of decision making are relevant to our discussion in at least two ways. First, they show that temporal elements, and individual differences in interaction with those temporal elements, may influence decision quality. Second, they suggest that some individuals may better fit certain cultures than others based on their temporal characteristics. In addition, we will later consider some organizational analogues of these individual differences, and associated potential consequences.

Motivation and Performance Under Deadlines

In the motivation literature, numerous theories contain a temporal focus. For example, the principal of entrainment (Kelly & McGrath, 1985; Kelly, 1988) suggests that groups become routinized and unable to speed their progress once they have performed at a slower rate. According to this theory, a given pattern of interaction is entrained to an externally imposed temporal constraint, and that entrained pattern will persist beyond the single task performance,

even if the deadline is brought nearer in time. Entrainment predicts that groups become habituated based on an externally imposed deadline. Even if the deadline changes (e.g., time allotted is reduced), their behavior will remain the same.

A second example is Parkinson's Law (Parkinson, 1957), which suggests that work expands to fit the time allotted. When a deadline is extended, rather than finish early, a group will "create" more work for itself in order to appear productive across the entire time available for a given project. A time contraction phenomenon is also evident. That is, it has been argued that work will also contract in the face of time constraints (e.g., McGrath & Kelly, 1986). The overall pattern, then, is one of work quantity "fitting" available time, whether more or less, though later we will suggest that this "fitting" is likely under certain conditions but not others.

Finally, Gersick's (1988) punctuated equilibrium perspective suggests that attention to time acts as a catalyst. At the midpoint of any given time period allotted to a project, groups will suddenly leap forward in work progress in order to meet the deadline. In effect, groups will radically change their behavior after the midpoint transition.

Temporal aspects of motivation are also relevant to our discussion. They suggest that show that time-related variables influence motivation and behavior at both the individual and group level. These results indicate that temporal elements of organizational culture may relate to organizational performance.

New Product Development

In a third domain, organizational research has indicated that introducing a new product or service to the market is a major milestone for most organizations and product innovation is a primary way in which organizations adapt and transform themselves in changing environments (Brown and Eisenhardt, 1995; Dougherty, 1992). The impact of speed in this process is

significant. Fast market introductions are important: (1) to gain early cash flow for greater financial independence, (2) to gain external visibility and legitimacy as soon as possible, (3) to gain early market share, and (4) to increase the likelihood of survival (Schoonhoven, Eisenhardt, and Lyman 1990: 177). Furthermore, fast adaptation is critical to success in many environments. For example one study indicated that products that were six months late in entering the high-technology market, but were within budget, earned 33 percent less over a five year period than they would have if they were on time (Vesey, 1991).

Strategic management research has demonstrated that considerable organizational rents can be earned by accelerating adaptation and speeding time to market in the new product development process. Eisenhardt and her colleagues have identified two basic strategies for product innovation, each of which involves very different assumptions about time (Eisenhardt & Tabrizi, 1995). The first is the compression model, which assumes a well-known rational process and relies on compressing the sequential steps of such a process. Acceleration involves planning the steps, simplifying them through supplier involvement, shortening the time that it takes to complete each step in the development process, overlapping the developments steps and rewarding designers for speed. The second, referred to as the experiential model, assumes an uncertain process and relies on improvisation, real-time experience and flexibility. In conjunction with this strategy, acceleration involves rapidly building intuition and flexible options so as to cope with a changing environment, but also involves providing enough structure so that people will create sense making, avoid procrastination, and be confident enough to act quickly in uncertain situations.

Beyond decision-making, motivation, and new product development, organizational researchers have only just begun to explore other ways in which time features in organizational

life. We move now to a discussion of one key arena, tied to the central theme of this volume -- time in organizational culture research.

ORGANIZATIONAL CULTURE AND TIME

Culture helps us understand the “hidden and complex aspects of organizational life” (Schein, 1992: 5). Organizational culture is “a pattern of shared basic assumptions that a [organization] learned as it solved problems of external adaptation and internal integration,” and covers emotional, behavioral and cognitive elements (Schein, 1992: 12). Shared assumptions in organizations arise from many sources including the context in which the organization exists (e.g. nation and industry), and the organization’s founder(s). Cultural assumptions also develop over time as organizational members share common experiences and work together to solve organizational problems. Given this definition, organizational cultures are driven by elements both external and internal to the organization. An important added distinction made by Schein (1992) is that organizational culture consists of multiple, interrelated levels, including artifacts, norms, and underlying assumptions. While organizational culture has received a great deal of research attention, the concepts of time and temporal elements of organizational culture have largely been ignored. In the remainder of this section we review a handful of studies that have addressed time in organizational culture.

Schein (1992) suggested that time is included in a set of a fundamental assumptions on which organizational cultures are built. He argued that (1) future, past and present time orientation (Kluckhorn & Strodtbeck, 1961), (2) monochronic and polychronic (Hall, 1959, 1966, 1977), (3) planning versus development time (Dubinskas, 1988), (4) time horizons, and (5) pacing are all aspects of time that have varied assumptions within cultural contexts. These

dimensions are summarized in Table 1. We discuss several of these below in our section on antecedents of temporal aspects of organizational culture.

In a second key piece of research Schriber and Gutek (1987) conceptualized the role of time in organizational culture as normative, arguing that "norms about time can be viewed as characteristics of culture," and that these norms have "temporal components that help integrate complex work processes and thereby facilitate the flow of work" (1987: 642). They developed an instrument to measure several dimensions of time in organizations, including schedules and deadlines, punctuality, future orientation, time boundaries between work and non-work, speed, work pace, and allocation of time. They validated the survey on a sample of 529 respondents from 51 work groups in 23 organizations. Thirteen usable scales were extracted. These dimensions are listed in Table 1. In this measurement development piece, Schriber and Gutek did not explicitly discuss sources of variation in these dimensions.

Based on their results, Schriber and Gutek (1987) offer several interesting avenues for future research, including the comparison of organizations or subunits, the degree of heterogeneity or homogeneity of temporal aspects of organizational culture within organizations, and the impact on employee behaviors and outcomes such as satisfaction or commitment. Unfortunately, to the best of our knowledge, this instrument has not been used in substantive tests. In addition, reviewing the scales that were extracted in Schriber & Gutek's research, we would argue that they concentrated primarily on cultural manifestations, without addressing the underlying assumptions about time. It is our view that these underlying assumptions are perhaps the most critical, and therefore need to be better understood, as we elaborate upon below.

Bluedorn and his colleagues (Bluedorn, 2000; Bluedorn & Denhardt, 1988; Bluedorn, Kalliath, Strube, and Martin, 1999) have also addressed temporal aspects of organizational

culture. Bluedorn et al. (1999) developed and tested a measure of polychronic values and have used this instrument to measure cultural beliefs about polychronicity in organizations. Then, moving beyond a singular emphasis on polychronicity, Bluedorn (2000) developed a conceptual approach to time and organizational culture that focused on three dimensions: (1) polychronicity, (2) temporal focus, and (3) temporal depth. Polychronicity is defined as “the extent to which (1) people prefer to engage in two or more tasks or events simultaneously and (2) believe their preference is the correct way to do things” (Bluedorn, 2000: 7). Bluedorn refines the concept of temporal orientation (past-present-future) to include two dimensions: temporal focus and temporal depth. Temporal focus concerns the direction of temporal emphasis: past, present or future. Temporal depth is similar to time horizon and concerns the “temporal distances into the past or future typically considered when contemplating events that have happened, may have happened or that may happen” (p. 17). Bluedorn concludes that temporal aspects of culture occur at the sociotemporal level, which involves the creation and maintenance of values systems to guide conduct. Table 1 summarizes these dimensions.

Bluedorn discusses the ways in which the three dimensions may impact efforts to align elements within organizations (e.g., workgroups with wide differences in polychronicity will have difficulty entraining to each other). He also suggests that temporal aspects of culture impact change attempts. Specifically, polychronic organizations may change more readily; and temporal focus and depth may become entrained over time, making it difficult to change these dimensions. Bluedorn’s (2000) conceptual development suggest that temporal aspects of organizational play an important role in organizational outcomes such as integration and change.

Onken (1999) provided a rare empirical analysis of the impact of temporal aspects of organizational culture on organizational outcomes. She tested the effects of polychronicity and

speed values on organizational performance in the telecommunications and publishing industries. She found marginal support for a positive relationship between polychronicity and organizational performance, and between speed values and organizational performance. She also predicted that the relationship between polychronicity and performance and between speed values and performance would be stronger in hypercompetitive industries. Hypercompetitiveness did moderate the relationship, but opposite the predicted direction. For example, in a hypercompetitive industry (telecommunications) the relationship between polychronicity and performance was negative. While an important step in understanding the impact of temporal aspects of organizational culture, this study is limited by a small sample, and the main effects were tested with simple correlations. It does, however, suggest that further research involving temporal variables and organizational culture is worth pursuing.

Taken together, the existing research on time in organizational cultures suggests that this is an important area, and it is in need of additional research. Existing studies have primarily emphasized the ways in which organizational cultures differ with respect to temporal elements. They have concentrated on identifying multiple dimensions of time and illustrating the differences across these dimensions. These studies have also in some instances (e.g. Bluedorn, 2000; Onken, 1999) suggested ways in which temporal dimensions of organizational culture will influence organizational actions and outcomes.

The existing research has provided an excellent foundation from which to build a more comprehensive model of time in organizational cultures. We see the need for at least two added paths of research. First, given that organizational culture has been identified as a multi-level construct (e.g. Schein, 1992), we will address time across multiple layers of organizational

culture. Second, we will focus on antecedents to temporal aspects of organizational cultures. These two issues are discussed in the following sections.

TIME AS A MULTI-LAYERED ELEMENT OF ORGANIZATIONAL CULTURE

Following Schein's (1992) conceptualization of organizational culture, we argue that time is a key factor in all layers of organizational culture, including artifacts, espoused values and norms, and underlying beliefs and assumptions. Previous empirical research has concentrated on artifacts and norms. Conceptual work has typically considered temporal elements at the assumption level. In this section we clarify the distinction between the three levels of temporal aspects of organizational culture.

Temporal Artifacts

Artifacts are cultural elements at the most surface level (Schein, 1992). Temporal artifacts are visible structures and processes within the organization concerning time. Artifacts include cultural outcroppings such as rituals, stories, symbols and myths (Martin & Siehl, 1983; Trice & Beyer, 1984; 1993). For example, Schriber and Gutek's (1987) dimensions of deadline setting, allocation and scheduling are examples of temporal artifacts. As described and measured, these dimensions tap organizational practices that emerge from underlying beliefs about time.

Other visible artifacts of culture include clothing, physical space, stories, rituals and ceremonies. All of these may exist for temporal elements of culture as well as other elements of culture. For example, a recent *Fortune* article about the best companies to work for identified amenities like "nap tents," on-site banks, stores, dry-cleaners and hairdressers (Useem, 2000). It is noted that the "new workplace" is not a place just to work, but a place to live. At one Internet start-up in Southern California, the organization has contracted a caterer to provide breakfast,

lunch and dinner on-site. This “benefit” is provided to employees so they will not have to leave work for meals. Another example of a temporal artifact might be how people react to a ringing phone during a conversation, or how they signal impatience. Still others might be whether clocks are generally visible in the workplace, and whether an effort is made to synchronize clocks. These artifacts suggest changes in underlying beliefs and assumptions about the boundaries between work and non-work. They also suggest that some organizations (those with the artifacts) may have different underlying assumptions about the need to work long hours in order to accomplish organizational goals.

Temporal Norms

Temporal norms are conscious, explicitly articulated values that guide behavior in dealing with key situations. An example of a norm is pace, or the rate at which activities are accomplished. Illustrating the relationship between norms and artifacts, Schriber and Gutek (1987) suggest that allocation, schedules and deadlines are related to pace, demonstrating that the underlying norms about pace influencing temporal artifacts. Another example of a temporal norm provided by Schriber and Gutek is autonomy over the use of time, or the amount of freedom the jobholder has in setting his or her schedule.

In the previous section we provided the example of catered meals (breakfast, lunch and dinner) as an example of a temporal artifact. At that organization it is implicit in the fact that all three meals are offered free of charge that employees will spend their entire day at work. An employee expressed that though eating the food is not mandated, it is not completely acceptable to leave to get lunch outside the organization (based on personal conversation with the first author, January, 2000). Employees feel normative pressure to stay on-site and eat the meals. This example demonstrates time-related norms that have developed in this organization.

Another example of temporal norms comes from Japanese organizations. Recent data indicate that while workers in Japan average 15.5 days of authorized vacation time, they take an average of only 8.2 vacation days (Japan External Trade Organization, 1992). Overwork is a growing concern in Japan, seen most dramatically in fears about growing levels of *karoshi* (death by overwork) (Smith, 1998; Dwyer, 1999). As a reflection of the magnitude of those concerns, the Japan Labor Ministry has undertaken a formal campaign to encourage workers to take more vacation time, with slogans such as “To take a vacation is proof of your competence” (Sanger, 1991). This provides an interesting contrast to earlier Japanese policy relating to vacations; until 1964, there were prohibitions on overseas pleasure travel by Japanese nationals in order to encourage hard work and saving behavior (Sakai, Brown, & Mak (2000)).

Temporal Assumptions

Finally, temporal assumptions occur at the most basic level of culture. Temporal assumptions are taken-for-granted beliefs of “correct” ways of coping with the environment, and are similar to what Argyris (1976) has identified as “theories-in-use” that tell group members how to perceive, think about, and feel about things (Argyris & Schon, 1974). Temporal assumptions are more stable than manifestations such as norms and artifacts, and are more pervasive (i.e., with less variation than in manifestations). Drawing upon the work of Fishbein and Ajzen (1975) and Kruglanski (1989), social psychologist Daniel Bar-Tal (1990: 14) defines this layer of culture as consisting primarily of beliefs, which are "propositions to which a person attributes at least a minimal degree of confidence." From a cognitive perspective, beliefs can be viewed as cognitions, since they are units that represent one's reality. They are encoded, stored and retrieved in long-term memory. The totality of a person's beliefs constitutes his/her total knowledge (Bar-Tal, 1990).

We do not differentiate, as philosophers do, between true and untrue assumptions and beliefs, but we do feel it is important to distinguish beliefs from attitudes. Jones and Gerard (1967: 159) have proposed that an attitude is "the implication of combining a belief with a relevant value." Similarly, Fishbein (1963) suggested that an attitude toward an object can be estimated as a function of beliefs and their evaluative aspects toward that object.

Polychronicity is an example of an underlying assumption about time. Bluedorn (2000) describes polychronicity as a "template for behavior that is held largely out of conscious awareness and often so well institutionalized that it is taken for granted as the only way to do things" (p. 7). This description directly fits with Schein's description of cultural assumptions. Other examples of underlying assumptions about time include temporal orientation (future versus present) and temporal depth, discussed more below.

As another example, we noted earlier that organizations have different assumptions about the need to work long hours in order to accomplish organizational goals. Perlow (1998) has explored such assumptions in a qualitative study of a software development group, focusing on the ways managers control the hours employees work, and therefore the temporal boundary between employees' work and life outside of work. She found three overarching techniques used by managers to exert temporal boundary control on subordinates, including imposing demands (e.g., scheduling meetings early in the morning, late at night, or over the weekend), monitoring (e.g., staying late work to "assist" the engineers and therefore ensure that the engineers have to stay late), and modeling behavior (e.g., coming in early, staying late, and working weekends with the expectation that others will do the same). Perlow noted that to "alter a control system so deeply engrained in the work culture requires challenging widely shared assumptions."

Yet another temporal assumption relates to the social value of time. That is, our conception of the timing of activities is not socially neutral; we have assumptions about the “proper” times for particular activities. For example, Cofer, Grice, Sethre-Hofstad, Radi, Zimmerman, Palmer-Seal, and Santa-Maria (1999) argue that places where the social worth of citizens are measured, such as school and work, generally start in the morning; this results in many problems for "evening types." Using the "Morningness-Eveningness Questionnaire" they found that "evening types" reported more conflicts with parents over childhood rituals of preparation for the day, were more likely to be disaffected from school, were more likely to engage in night activities that resulted in norm violations and health risks, etc. Referring to this paper, Fogel (1999) begins by discussing Edward Hopper's painting, 'Nighthawks' (1942) showing three people sitting late at night at the counter of a city diner. The picture is one of loneliness and alienation as these "night people" are out resisting belonging, engaging in activities when "normal people" were home in bed. Organizations may develop similar assumptions about the “appropriate” part of the day for work, meetings, store hours, etc.

Recent empirical research demonstrated links between various layers of temporal culture. For example, polychronicity is positively related to pace of work (Onken, 1999), and negatively related to schedules and deadlines (Bluedorn, Kalliath, Strube, & Martin, 1999). While it was not the express purpose of these studies to demonstrate links across levels of cultural constructs, they do demonstrate a link between underlying values and the behavioral norms demonstrated within organizations.

While previous research has suggested the existence of temporal aspects of organizational culture, no systematic model has been developed to predict antecedents or outcomes of temporal aspects of organizational culture. In the following sections, we detail

several potential antecedents. Following this, we discuss the impact of temporal culture on several important work and organizational outcomes.

ANTECEDENTS TO TEMPORAL ELEMENTS IN ORGANIZATIONAL CULTURE

Time is a socially constructed phenomenon, and as such will vary across different contexts including societies and organizations (c.f., Berger & Luckman, 1966; Hall, 1983). We begin at the macro level and discuss how the social context in which an organization is embedded may influence the conceptualization of time. We then examine industry and professional level antecedents.

Societal Antecedents

Organizations are embedded in national and societal cultures that likely influence organizational understanding and use of time. Differences in organizational cultures may stem in part from national differences in *time perspective* -- also referred to as time orientation (Kluckhohn & Strodtbeck, 1961: 13; Hofstede, 1993; 1997). The key distinction in the literature has been between present or future time perspective (Hall, 1983; Jones, 1988; Levine, West, & Reis, 1980). Nuttin (1985) describes future time perspective (FTP) as an overall attitude toward time that focuses on the future. According to Jones (1988), FTP involves the belief that a behavior performed in the present increases the probability that a desired future goal will be attained. FTP societies tend to value goals whose attainment can only occur in the future (Jones, 1988: 23). FTP has U.S. and Western European roots, particularly in the Puritan/Protestant concept of eschewing hedonism in this life in order to attain future rewards. Most Anglo cultures, including the North American culture, tend to be FTP cultures (Erez & Earley, 1993; Jones, 1988; Levine, West & Reis, 1980; Spadone, 1992).

Conversely, present time perspective (PTP) supports the idea that behaviors taken today have no more effect on the probability of attaining a future goal than do future behaviors that could be taken as the goal nears. According to Jones (1988: 25): “If putting off today does not materially alter the probability of successful goal attainment, there is little reinforcement for anticipatory goal behavior.” Similarly, while FTP-oriented societies tend to value future goals more than other goals, PTP-oriented societies often have a generally-held value that enjoying today is more important than worrying about enjoying tomorrow. As such, these societies tend to focus on the immediate social environment, and emphasize expressive behaviors rather than instrumental ones (Jones, 1988). Examples of PTP cultures include, Chinese (Erez & Earley, 1993); African-Americans (Jones, 1988); Brazilians (Levine, West & Reis, 1980); Latin Americans (Epstein, 1977); and the Thai (Spadone, 1992).

Bluedorn (2000) argues that it is difficult to operationalize the difference between past, present, or future orientation, and also difficult to determine what is short-term past versus long-term past, short-term future, and so on. In response to this difficulty, he proposes a construct called *temporal focus*, which is the degree of emphasis on past, present and future in a culture. He then describes another dimension called *temporal depth* to assess the distance into past or future typically considered. This provides a more fine-grained view of temporal orientation varying along two directions: direction (past-present-future) and depth (how far into a given direction). Bluedorn’s temporal focus and temporal depth are each elements of temporal extension, generally seen as the primary index of time perspective (Hulbert & Lens, 1988; Jones, 1988; Nuttin & Lens, 1985). Temporal extension is highly related to goal setting and motivation. According to Nuttin & Lens, extension occurs because events (goal objects) have signs (past-future) and are also localized (distant-proximate). According to Lennings, Burns, and Cooney

(1998), “Temporal extension is the analogue of distance; it is the temporal span a person is prepared to entertain when thinking of personal and social goals or events” (p. 629). At least two other temporal dimensions are relevant to this discussion. First, temporal attitude refers to the feeling, positive, negative, or neutral, expressed by a person toward time (Yonge, 1973). According to Lennings et al., “Positive attitudes reflect time as continuous and integrated, with the emphasis on creative or goal achieving possibilities. Negative attitudes portray time as inconsistent and limited, with a sense of discontinuity; the future is avoided, and the past is a source of guilt or of problems” (p. 629). Finally, time structure involves two interlocked abilities. One is the capacity to structure events into a temporal sequence (that is, to establish temporal routines or rhythms) and the second is the ability to integrate the past, present, and future.

A concept related to time perspective is the comparison between monochronic and polychronic societies (Hall, 1983). Monochronic societies are characterized by a pattern of sequential behavior governed by schedules, against which success and failure are measured; processing of one thing at a time; and, activities are often sequentially performed (Hall, 1983). Viewing time monochronically means that one sees time as divisible into small, objective units, but that only one thing can be scheduled into each unit. Alternatively, polychronic societies are characterized by a pattern of simultaneity, a moment-in-time that stresses involvement with people and completion of transactions, the simultaneous processing of several things at once, and comfort at doing multiple activities at the same time (Hall, 1983). In polychronic cultures, time is measured more by accomplishing wholes rather than by divisible, “spendable” units. In an interview conducted by Bluedorn (1998), Hall suggested that in polychronic societies people place more value on doing many things at once and this value leads to polychronic behaviors.

Hall (1983) has demonstrated differences across cultures and found that the U.S. and Northwestern Europe tend to be more monochronic, whereas Southern Europe and Latin America tend to be more polychronic.

The concept of time famine illustrates another difference across cultures (Linder, 1969). National cultures range on a scale from time surplus (e.g., India) to intermediate (e.g., Sweden) to time famine (United States, Japan). In time-famine cultures "the balance between accomplishment in work and leisure has been destroyed as worker productivity has accelerated, 'increasing the yield' on an hour of work."

Societal context will likely influence the temporal elements of organizational culture. For example, Schein (1992) has suggested that U.S. firms will tend to have organizational cultures assuming a present or future orientation because these are the prevailing assumptions in the U.S. culture. Typically, the U.S. is thought to view time as linear, irreversible, objective, measurable, and homogeneous (McGrath & Rotchford, 1983; Schriber & Gutek, 1987). Similarly, U.S. managers tend to have a monochronic approach to work because the U.S. tends to be a monochronic society; however, even within relatively monochronic societies, polychronic organizations exist (Schein, 1992).

We argue that time orientation at a national level will primarily influence norms and assumptions about time at an organizational culture level. However, a national sense of "time famine" might also be evidenced in organizational artifacts. Levine and Norenzayan (1999) review literature on pace of life and present a study comparing the pace of life in large cities from 31 countries around the world in terms of three indicators: average walking speed in downtown locations, the speed at which postal clerks completed a simple request, and the accuracy of public clocks. Their research also considers potential predictors of pace (economic

vitality, climate, cultural values, and population size) as well as physical and psychological well-being indices (coronary heart disease, smoking rates, and subjective well-being). Time pace was found to be highest in Japan and Western Europe. As noted by Levine and Norenzayan, “The very slowest were in three countries popularly associated with a relaxed pace of life: Brazil (where the stereotype of ‘*amanha*’ [literally, ‘tomorrow’] holds that, whenever it is conceivably possible, people will put off the business of today until tomorrow); Indonesia (where the hour on the clock is often addressed as ‘*jam kerat*’ [‘rubber time’]); and, slowest of all, the archetypical land of *mañana*, Mexico.” These artifacts may also appear in organizations embedded in these societies.

Industry Antecedents

In addition to societal context, industry differences are likely to affect organizational culture in general (Gordon, 1991) and assumptions about time in particular. Organizational cultures vary across industries, though within-industry differences are also found (Chatman & Jehn, 1994). Recent research has suggested at least three time-related constructs that vary across industries: clockspeed, velocity, and hypercompetitiveness. We briefly review each and suggest ways in which these industry characteristics may influence temporal elements of organizational culture.

Industries vary in rate of new product development. Contexts with high rates of new product introductions and short intervals between new product generations have high “clockspeed” (Carrillo, 2000; Fine, 1996; Mendelson & Pillai, 1999). Clockspeed concerns time spans in product development. In some industries such as pharmaceuticals and biotech, time spans are typically longer, while in other industries, such as the computer software, microprocessors, fashion, and internet-based industries, time spans are typically shorter.

Clockspeed may influence organizational assumptions about time. Schein (1992) notes that assumptions develop over time as organizational members have success and begin to internalize cognitions about the reasons for success. In industries characterized by higher clockspeed it is likely that cultures will place more emphasis on pace and coordination over time, because these actions are likely to have led to success. The computer industry is a common example of an industry with high clockspeed. Taken as a whole, duration of product life cycles has been decreasing at an average rate of 9.4% per year between 1988 to 1995 in the computer industry (Mendelson & Pillai, 1999). In other industries, where clockspeed is lower, basic assumptions about time, such as the importance of speed, may be quite different.

Velocity is another industry-level characteristic that may influence organizational assumptions about time (Eisenhardt & Bourgeois, 1988; Eisenhardt, 1989). High velocity environments are characterized by discontinuous and rapid change in demand, competitors, technology or regulation. Information is often inaccurate, unavailable, or obsolete (Eisenhardt & Bourgeois, 1988). Velocity is similar Lawrence and Lorsch's (1967) discussion of how time horizons differ across industries. Considering velocity as an industry-level characteristic, the micro-computer and airline industries are high velocity. Cyclical, when the cycles are regular and predictable, are typically not considered high velocity (e.g. machine tools) according to Eisenhardt and her colleagues.

Bluedorn & Denhardt (1988) and Eisenhardt (1998) provide additional explanation for the role of cyclicity, suggesting that cyclicity may result in "event" based conceptualization of time (concepts developed by Clark, 1978, 1985). Event pacing acts in response to actions of competitors, and deviates from plans when important "events" occur (e.g. when something new comes out of the R&D lab) (Eisenhardt, 1998). Event time is more heterogeneous and requires

more differentiated understanding and use of time. Eisenhardt suggests that in high velocity environments, organizations are better off using what she calls “time pacing” or using calendar time and deadlines to move forward. These arguments suggest that industry-level pressures and rhythms will influence assumptions about time in given organizations.

A third industry characteristic likely to influence organizational assumptions about time is “hypercompetitiveness” (D’Aveni, 1994). Hypercompetitive industries are characterized by “intense and rapid competitive moves, in which competitors must move quickly to build advantages and erode the advantages of their rivals. This speeds up the dynamic strategic interactions among competitors” (D’Aveni, 1994: 218). Sources of competitive advantage in hypercompetitive industries include timing and know-how, with explicit focus on a need to move more rapidly than competitors.

Hypercompetitive, high velocity, high clockspeed industries foster pressure for speed. As a result, it is likely that organizations in these industries are likely to develop temporal assumptions about the importance of speed. These assumptions in turn will lead to norms and behavioral practices supporting speed, and finally artifacts representing the value placed on speed. In addition to influencing basic assumptions about the importance of speed, industry clockspeed may also influence organizational assumptions about time orientation. We use Bluedorn’s (2000) distinction between temporal focus and temporal depth to consider an example. Temporal focus refers to a past or future orientation. Industries with longer histories have more tradition and collective memory to draw on; suggesting that they may be more likely to engage in past orientation. Temporal depth refers to the distance into the future or past managers consider when planning and making decisions. The longer into the past managers consider, the more likely they will be to take a long-term view of the future (El Sawy, 1983).

These findings suggest that in newer, higher clockspeed industries such as Internet and hi-tech, orientation may be future focused, but shorter term (less deep) than in other industries.

For example, consider two organizations; one is in a high-tech industry such as computer software while the other is in a low-tech, more stable industry such as furniture manufacturing. New product development timelines and product life cycles are much shorter in the computer industry. These firms are likely to have widely varying beliefs and assumptions about the “appropriate” timeline for basic organizational activities. Internet start-ups also pose another interesting question about timelines. On one hand these firms are notorious for speed and short timelines, however, they also appear to have much longer timelines in terms of acceptable time-to-profitability.

Professional and Functional Antecedents

Previous research suggests that professions, occupations, and functions have distinct elements of culture. Trice and Beyer (1993) suggest that occupations and professions are an important “extraorganizational” source of cultural beliefs, assumptions, and artifacts. Doctors, lawyers, accountants and PhDs are examples of professions with intensive, lengthy socialization processes. Trice and Beyer also note a strong tendency of groups of workers to differentiate themselves based on the type of work done. Essentially, occupations form subcultures, with clusters of understanding, and behaviors that characterize them as distinctive groups within an organization (Trice, 1993). A basic ingredient for the development of a subculture is differential interaction, either on or off the job or both. Subcultures form because their members interact more frequently with one another than with other people. If persons in an interaction cluster share similar problems and uncertainties, an identity as a distinct group with a shared milieu forms (Trice, 1993).

Employees are often as committed to their occupational cultures as they are to their organizations (Ritzer & Trice, 1969; Hebden, 1975). These groups can have a life of their own outside of the organizational setting (Child & Fulk, 1982: 156) and can occasionally clash with the organizational culture as a whole. Scientists provide many examples of how occupations can alter centralized control at the organizational level. In the 1960's, scholars studying scientists in industry and research laboratories documented the conflicts that arose between the demands of employers and the expectations and values instilled during scientific training (Kornhauser, 1962; Marcson, 1960). Other examples include lawyers in corporations (Smigel, 1964) and physicians and nurses in hospital settings (Strauss, 1972). These same phenomena persist today. Freidson (1977: 24) has summarized the ability of occupations such as accounting, engineering and architecture to impact the organizations in which members of these occupations work:

The effectively organized professional occupational controls even the determination and demarcation of tasks embodied in jobs supported by employees...the organized progressions are often responsible for writing job descriptions for their members and determining the employer's training and education requirements, as well as the kind of special skill imputed to the qualified worker.

Professional norms and training are likely to affect planning versus development time and time horizons. Furthermore, functional pressures and environmental demands related to certain functions will also influence temporal assumptions. For example, R&D time horizons are often longer than those for other parts of the organization (Lawrence & Lorsch, 1967). Lawrence & Lorsch also found that department managers' temporal orientations to reflect time span of feedback from the environment. This span of feedback time was related to functional area, and areas with faster time span of feedback (e.g. sales) led to shorter time orientation than areas with slower time spans off feedback (e.g. R&D). In addition to time horizons and approach to planning, professional socialization and functional area may influence polychronicity. For

example, doctors and dentists commonly practice more polychronic work behaviors when juggling multiple patients in several exam rooms. Some organizations are represented by more professions than others, such that they can be characterized by the sub-cultures of those professions.

Schein (1992) argued that the dimensions of culture that are less dependent on societal culture--planning versus development time, time horizons and pacing--will vary based on occupations. Planning versus development time concerns the different approaches to projects and process that are taken from people with different backgrounds. For example, Schein (1992: 109) cites a study by Dubinskas (1988) that demonstrated different planning horizon beliefs between biologists and managers. The biologists operated under what Dubinskas calls "development time" in which they felt that things (projects) would take as long as they took. Alternatively, the managers with a business training background operated under what he called "planning time" in which deadlines and external targets drive projects. Schein suggests that development time is open-ended and future focused, whereas planning time inherently seeks closure.

Organizations dominated by particular professions or occupations may come to reflect these subcultures, and therefore the time horizons of the occupational subcultures. For example, Merck is a very "science-driven" firm with an organizational culture that reflects its research scientists' concern with being on the cutting edge, the first to introduce new and innovative pharmaceutical products to the market. Eastman Kodak on the other hand, has placed particular emphasis on developing its customer service function, and tends to be a service-based organizational culture with less focus on speed and more focus on high quality interpersonal interactions that often require time to develop.

IMPLICATIONS OF TEMPORAL ASSUMPTIONS IN ORGANIZATION CULTURES

Time-related aspects of organizational culture may have important implications for managers. In this section we explore three important ways temporal elements of organizational culture affect organizations. First, we describe an extension to person-organization fit research by detailing “temporal fit.” Then we consider the influence of temporal elements of culture on decision-making. Finally we describe implications for culture change efforts.

Person-Organization Fit Implications of Time in Organizational Culture

Previous research has noted the importance of person-organization fit in predicting individual outcomes such as commitment, job satisfaction, absenteeism and turnover (Chatman & Barsade, 1995; Meglino, Ravlin & Adkins, 1989; O’Reilly, Chatman, & Caldwell, 1991). O’Reilly et al. (1991) demonstrated that fit is positively related to organizational commitment and job satisfaction, and negatively related to intent to leave and actual turnover. This research takes a cultural approach to fit and examines the congruence between individuals’ work-related values and an organization’s values. Person-culture fit is congruence between organizational values and individual values. Several arguments exist for observed outcomes of person-culture fit including identity (Ashforth & Mael, 1989) and attraction-selection-retention (Schneider, 1987; Schneider, Goldstein, & Smith, 1995). We suggest that “temporal fit” is an extension of person-culture fit. Congruence between time-related values held by individuals and time-related elements of organizational cultures will have similar impact.

As noted earlier, the emphasis on various temporal factors differs across organizations (Schriber & Gutek, 1987), and as such organizations manage time differently. Many reasons may exist for differences, including the antecedents we discussed earlier such as societal context, industry context and occupational cultures. For example, the recent “dot-com” phenomenon has

resulted in the term “internet time” in which typical organizational development processes have been compacted into startlingly short time periods. These organizations are likely to develop assumptions about time including speed and work/life boundaries that may differ from organizations facing other constraints.

Individuals also manage time differently. Individual differences in personality will likely affect how they allocate time and perceive pace and temporal uncertainty. There is evidence that individuals differ on time-related personality dimensions such as time urgency (Conte, Mathieu & Landy, 1998) Type A Behavior Pattern (Friedman & Rosenman, 1974; Taylor, Locke, Lee, & Gist, 1984), and polychronicity (Bluedorn, Kaufman, Strube, & Martin, 1992), as well as evidence that deadlines, pace, and rhythm of work affect task performance (e.g. Gersick, 1988, 1989; Kelly & McGrath, 1986; Lim & Murningham, 1995).

Given these individual differences, as well as trends in organizational management of time, examining *temporal fit* may be an important extension of person-organization fit theory. We define temporal fit as the congruence between organizational assumptions and norms about time and individual differences in time-related preferences. Temporal fit may have important implications for performance outcomes. For example, organizations vary in the degree to which they allow autonomy over the use of time and setting schedules (Schriber & Gutek, 1987). Organizations also vary in the degree to which they offer flextime, or the ability to have alternative schedules. Furthermore, organizations vary in the amount of "slack time" available to employees. For example, at companies such as 3M employees can use a certain percentage of time for their own purposes, and this is actively encouraged to support innovation.

Individuals also vary in the degree to which they set deadlines for themselves and attempt to self-schedule and coordinate their activities (Conte, et al., 1998). Lack of fit may negatively

influence important performance-related behaviors. For example, if an individual has low deadline-setting and scheduling propensity (Conte, et al. 1998), he or she may struggle in environments lacking clear temporal markers. This may be the case because deadlines act as pacing devices, helping individuals and groups to form task strategies and split work to accomplish a task by the deadline. Deadlines and schedules may also act as goals and as such will enhance performance if specific and difficult. In the absence of set schedules or deadlines, individuals who are not likely to set deadlines themselves may have performance problems. Similarly, if an individual tends to set his or her own deadlines and schedules, he or she may experience frustration or dissatisfaction if the organization does not allow freedom to control these activities. Lack of temporal fit may thus impact job satisfaction. Fit between individual temporal preferences and organizational temporal norms may affect important personal and performance outcomes. Lack of fit may result in greater stress, and as a result may increase withdrawal behaviors such as absenteeism and turnover.

Polychronicity is another temporal dimension that may influence person-organization fit. Bluedorn (2000) and others view polychronicity as both a cultural characteristic and an individual difference. As such, polychronicity is likely to play a role in person-culture fit. Slocombe and Bluedorn (1999) found that greater congruence between preferred polychronicity and experienced work-unit polychronicity was associated with dimensions of organizational commitment, the individual's perceived performance evaluation by the supervisor and co-workers, and the individual's perceived fairness of the performance evaluation.

Consistent with the assertion that people are reacting to the increased pace of work, a Hilton Hotel study found that more than $\frac{3}{4}$ of the 1,000 workers surveyed rated having more time off, and spending more time with family and friends, higher than the ability to make more money

(Matthes, 1992; Babbar & Aspelin, 1998). Godbey (1981) argues that as time famine increases, people develop "time deepening" skills; some people develop higher rates of "doing" than others. Time deepening can take four forms: 1) shortening the time for each activity; 2) replacing more-time-consuming activities with less-time-consuming alternatives; 3) increasing precision with regard to time, such as planning schedules with only five-minute tolerances; and, 4) combining activities to do more than one thing at the same time. Godbey, Lifset, and Robinson (1998) also provide data on rushing perceptions, behaviors, and consequences in various countries. They write, for example, that time pressures in Japan have led to many signs of stress; one study reported that 124,000 of Toyota's 200,000 workers suffered from chronic fatigue (Rifkin, 1995). Similarly, they cite a 1992 survey (Godbey & Graefe, 1993) showing that 38% of Americans (including 64% of working mothers) "always" felt rushed, up from 22% in 1971 and 32% in 1985.

Decision Making Implications of Time in Organizational Culture

In addition to temporal fit, some decision-making implications of time in organizational culture flow from our earlier discussion. First, and most obvious, is the need to explicitly address temporal issues in considering decision aspects of organizational culture. Organizational pacing, time constraints, attitudes toward deadlines, and other time-related aspects may influence decision processes and outcomes. This suggests that a full picture of decision making in the context of organizational culture cannot be developed without consideration of temporal elements.

Second, time constraints and other temporal elements may place severe demands on decision making. While such demands are not inherently dysfunctional (they may, for instance, work against complacency) they may nevertheless lead to fundamental changes in the degree and

nature of search behaviors, choice-making processes, and other aspects of problem solving. These include, but are not limited to, pressures toward limited search, narrowed focus, overweighting of confirming information, and reliance on screening approaches or on scoring approaches that require little cognitive processing.

Third, temporal demands may create and amplify fundamental tensions in organizations. For instance, the same characteristics noted above as products of the current temporal environment may interfere with the ability of the organization to adequately respond to complex environmental issues, to anticipate environmental threats, and to learn. As such, temporal forces may lead to short term-oriented tendencies that conflict with long-term organizational health (i.e., to overly constricted temporal depth).

Finally, our discussion suggests that it might be useful to consider cultural contingency aspects of decision making. What works when? The fit of decision styles (varying in time requirements) with organizational culture may be an important contingency variable. For example, Type As, risk takers, and dogmatics may have differential advantages, and do relatively better, in fast-paced cultures than in more leisurely cultures. Type As would seem to ideally fit the decision demands, and other attributes, of polychronic cultures. We will further explore some of these issues later in the chapter.

Innovation Implications of Time in Organizational Culture

Differences in organizational cultures with regard to assumptions about time are also likely to impact the ease with which organizations are able to innovate and manage knowledge. Organization researchers have tended to divide the domain of knowledge management into two interrelated elements -- (1) knowledge creation and (2) knowledge transfer (Appleyard, 1996; Nonaka, 1994; Szulanski, 1996; Waller, Gibson, & Carpenter, 2000). *Knowledge creation* refers

generally to the discovery of new knowledge or the combination of old knowledge in new ways. Although the process of knowledge management is referred to at individual, group, organizational, and inter-organizational levels, it is generally acknowledged that ideas themselves are created by individuals, and often by individuals working within teams. Teams that create knowledge can also be described as "communities of interaction" that involve "interaction between individuals [that] typically plays a critical role" in developing new ideas (Nonaka, 1994: 15). In contrast to knowledge creation, *knowledge transfer* refers to the cooperative movement of knowledge, often between teams or other organizational units, with the aim of applying it to some strategic problem or question.

In general, time is a central element in knowledge management. Waller, Gibson and Carperter (2000), for example, argue that when members in a team have different time perspectives (i.e., within-team heterogeneity), these differences will impact the capacity of the team to create knowledge in a timely fashion. They then propose factors that moderate this relationship, including knowledge characteristics, process characteristics, and location of members. In the second half of the framework, they examine time perspectives and the time necessary to transfer knowledge *between* teams, arguing that when two teams have different time perspectives (i.e., between-team heterogeneity), these differences will impact the time necessary to transfer knowledge between the teams. They then propose factors such as goal congruence, transfer timing, and transfer expectations that moderate this relationship.

Based on this framework, one might expect important implications for cross-organizational teams involving team members that represent organizations with very different assumptions about time that stem from the organizational culture. These heterogeneous teams may be more or less able to both create and transfer knowledge. It may be necessary for them to

manage the types of moderators proposed by Waller et al., or they may need to explicitly select strategies that are consistent with the dominant cultural assumptions. At a much more radical level, they may have to undergo systematic cultural change in order to speed the process of creation and transfer.

The work of Eisenhardt & Tabrizi (1995) speaks to this issue. Examining thirty-six large computer companies in the U.S., Europe, and Asia that compete in the personal computer, microcomputer, mainframe and peripherals industry, they demonstrated that in general, the experiential model consisting of improvisation and flexible tactics, rather than sequential and rationalistic compression, led to faster product development. However, it is important to note that this strategy was best supported by specific configurations of certain elements of organizational cultures, including frequent milestones, powerful leaders, and multifunctional teams. Thus, certain organizational cultures may encourage or impede the development of the compression versus experiential models for new product development.

This phenomenon is perhaps most evident when cross-organizational collaboration occurs during the new product development process. The second author, for example, studied one new product development effort that occurred across four organizations, each of which had very different underlying assumptions regarding time. Members of the organizations involved in the effort reported that the organizations varied dramatically in the degree to which they were able to adopt a concurrent approach involving integrated product development, as compared to a sequential and functional approach. Two of the organizations were already organized in an integrated product development manner-- a project manager is in charge and there was easy familiarity with the concurrent approach. This reduces specialization, and is faster but switches relative power from the functional areas to the program or project structure. In contrast the other

two organizations were viewed as much more hierarchical and sequential, following a functional process. This was true even though the explicit objectives of the project were to utilize and develop the concurrent approach. This basic difference in assumptions across the organizations created conflicts between the functional leads and their counterparts in the partner organizations who answered to the project leads. As a result the overall success of the project was questionable.

Culture Change Implications of Time in Organizational Culture

A related domain that may be impacted by temporal assumptions in organizations is the process of cultural change that occurs when firms are merged or acquired. A recent comprehensive overview of synergy realization in 62 case studies of mergers and acquisitions found that benefits from purchasing, production, marketing, administration, new market access, cross-selling, transfer of current know-how, or creation of new know-how, were primarily facilitated by cultural change, as opposed to due diligence, financial incentives, or knowledge transfer (Larsson & Finkelstein, 1999). In fact, most firms reported realizing only about 30% of the potential synergies. A measure of organizational integration was the strongest predictor of synergy realization. Interestingly, there was often less resistance to mergers reported for integration across countries, than for integration within countries.

We would argue that a key issue in merging two organizational cultures is the degree to which temporal assumptions are integrated. An excellent example of how temporal assumptions in particular impact synergy realization in a merger has occurred at the newly created Daimler-Chrysler. Coinciding with the merger of German auto manufacturer Daimler-Mercedes-Benz with the U.S. auto manufacturer Chrysler, the company created “post-merger integration teams” consisting of personnel from each company in each country. These teams were charged with the

process of integrating the two companies, including creating a unified organizational culture that reflected both the national cultures involved in the merger. Studying one such team, the second author found numerous examples of conflicts that occurred due to different norms regarding time. For example, expectations regarding timeliness in the use of email differed dramatically. The U.S. members of the newly created organization expected an email response from their German counterparts within 24 hours of sending an email message. Focusing on a methodical examination of issues and questions posed in the email, the Germans often waited several days or a week in order to reply. This infuriated the U.S. members of the organization. From the German point of view, the U.S. counterparts were being too quick respond, often providing top of the mind comments, without sufficient examination of the issue in its entirety.

These temporal issues in mergers are also evident in a change effort in which the third author is a participant. The focal organization resulted from the merger of three Midwestern utilities. Interviews, focus groups, and surveys pointed to dramatic differences in temporal orientations across the merged organizations. For instance, in sharp contrast to the largest of the organizations (seen by some as the "acquirer"), the smallest placed heavy emphasis on tradition, and seniority was clearly valued and rewarded. Decision making processes tended to be relatively slow, with emphasis on caution and deliberation. Attempts to impose common "corporate" time perspectives – in effect, those of the largest of the merging firms – were seen by some as cultural genocide. On top of all this, the merged entity has some units that are, and for the foreseeable future will continue to be, heavily regulated and others that are preparing for deregulation. The latter – forced to face the future, to emphasize speed, and to accept many painful changes – see the former as "Neanderthals," stuck in the past, and express concerns that

if appropriate mechanisms aren't put in place, the attitudes of the regulated side will "bleed over" to the nimbler units. The result is a matrix of temporal discontinuities.

While these examples illustrate the difficulties of merging cultures that are temporally quite different, it may be that moderate differences with respect to temporal cultures are most difficult to integrate. A recent study by Earley & Mosakowski (2000) examining teams with varying degrees of cultural homogeneity demonstrated that high homogeneity, as well as high heterogeneity, are advantageous during integration. Homogeneous teams had similarities to draw upon in forming relationships and collaborating. Highly heterogeneous teams were sensitive to differences and tended to create a "hybrid culture." Moderately heterogeneous teams were the worst performers and had dysfunctional group processes.

Another example is when firms competing in the computer industry have merged. Often, a large, traditional multinational organization with monolithic and bureaucratic practices acquires a smaller more agile organization in order to compete in a specific niche and gain access to new markets. The newly acquired firm typically has very different assumptions about time, including a "time is money" and "speed it success" focus, whereas the acquiring firm is slower to react and less able to respond to changing market conditions. This is, of course, the very reason for the merger, but can cause extreme strain as the two firms must structure, make decisions, and develop and reward employees. Recent examples of this phenomenon include the merger of Time-Warner and America Online, which brought together a traditional media giant with a new Internet start-up; as well as the acquisition by Texas Instruments of numerous smaller "dot com" companies to expand their electronic commerce.

To bridge these differences, it might be helpful to establish liaison roles across the teams (Mohrman, Cohen, & Mohrman, 1995). These roles might be filled by individuals with time

horizons that are intermediate between those of other participants (Lawrence & Lorsch, 1967). Similarly, it could be advantageous to select members with the ability to cut across functional boundaries and relate to others from different areas, referred to as “laterality” by Mankin et al. (1996:98). People with this capability: (1) can act as a bridge and interpreter between different areas, (2) can rapidly learn the basic language and conceptual framework of their collaborators from other areas, (3) are confident, but not egotistical, about what they know, and (4) are not defensive about their lack of knowledge in other areas and are willing to learn.

FUTURE DIRECTIONS

In this chapter, we have described the importance of considering temporal elements of organizational culture. Following Schein’s work (1992), we described temporal elements of culture at three different levels: artifacts, norms, and assumptions. We then described three major sources of temporal elements of organizational culture: societal context, industry context and occupations and functions of organizational members. In the previous section we elaborated on several ways in which temporal elements of organizational culture may influence organizational outcomes such as person-organization fit, decision making, innovation, and cultural change. Figure 1 summarizes the antecedents and consequences we discussed. In this final section, we detail a number of future directions for research concerning temporal artifacts, norms and assumptions.

Testing the Temporal Limits of Current Theories

Our approach to temporal elements of organizational culture and the sources of differences suggest that current theories which demonstrate time-related effects ought to consider moderating implications of differences across organizations in temporal beliefs. For example, many of the approaches to motivation discussed earlier assume a future-oriented approach to

time perspective. Theories such as Parkinson's Law (Parkinson, 1957), the punctuated equilibrium model of group development (Gersick, 1989), and entrainment (Kelly & McGrath, 1985) all assume a culture characterized by a future time belief – that is, the belief that present time actions increase the probability of goal attainment in the future -- even though such belief is not pervasive in all organizations (Jones, 1988; Levine, 1988).

What we believe we know about the impact of time and timing in organizations may not apply to all contexts. For example, perhaps entrainment does not hold in all contexts, given that as we have demonstrated, in some environments, the value of externally imposed deadlines is suspect. Likewise, perhaps Parkinson's Law is culturally dependent. In some organizational contexts, members may be relatively unresponsive to prospects in the future. Here we may find that when deadlines are extended in groups characterized by present time perspective, rather than expanding work to fill time allotted, these groups will finish work early. These effects may depend on situational factors, including reward systems. For example, if people are paid by the hour they are more likely to engage in “time-filling” behavior than if they can go home once their quota is met. Similarly, punctuated equilibrium theory of group development may not hold in all organizational contexts; particularly suspect are those in which deadlines are not the focus. Instead, interaction processes and quality of social relations “in-the-moment” are the top priority. In these contexts, regardless of the midpoint transition, we might find that groups are characterized by a relatively steady pace throughout the group's project cycle. These contingencies apply to theories other than motivation (e.g. our discussion of decision making, innovation, and culture change). Future research should investigate these possibilities.

Organizational Analogues of Individual Differences

In addition to future research examining the role of cross-organizational differences in temporal artifacts, beliefs and norms in current organizational research, our research points to additional ways to conceptual differences in temporal elements of organizational cultures. We suggest that there may be organizational culture analogues of individual differences in temporal aspects of decision making. It might be interesting for future research to explore whether the same differences that matter at the individual level are also important at the organizational level.

Perhaps the most obvious place to begin the search for such analogues is with the Type A-Type B behavior patterns. As noted previously, Type As are polychronic, feel great time pressures, and have other characteristics that appear to neatly parallel temporal elements of culture which we have examined. While some characteristics of Type As (e.g., impulsiveness and hostility) may appear outside the scope of our discussion, and thus to weaken the parallel, we should note that the Type A behavior pattern is increasingly being viewed as multidimensional. In particular, the hostility dimension of the pattern appears to be relatively distinct, and it is that hostility, rather than polychronic emphasis, that is associated with health problems. As such, we would suggest that closer attention to the literature on Type A versus Type B behavior, focusing specifically on those elements with clear individual-organizational parallels, may prove fruitful.

In addition, consider the fact that dogmatics do relatively well when there are sharp time constraints on decision making. As such, they are likely to do well in cultures facing high speed demands (i.e., clockspeed, velocity, and hypercompetitiveness), and they may be able to place their stamps on such cultures (that is, to create “dogmatic cultures” -- see Kets de Vries & Insead (1999) for a related discussion). However, since dogmatics tend to discount disconfirming information and to be rigid in their belief structures, such “dogmatic cultures” may hinder organizational learning. Thus, the degree to which a culture is dogmatic may interact with

temporal depth to influence organizational outcomes. A short-term focus (i.e., low temporal depth) may, for instance, cause the organization to focus on the benefits to be gained by dogmatism, while higher temporal depth may lead to relatively greater emphasis on the learning-related decrements associated with such a focus.

Finally, the principle of requisite variety states that "the internal regulatory mechanisms of a system must be as diverse as the environment with which it is trying to deal" (Morgan, 1986, p. 47) and that complex situations faced by organization members must be addressed in complex ways (Weick, 1979). Thus, complex environments, rich with temporal variety, will demand "cognitively complex" organizations. As noted earlier, such complexity may be especially critical when to obviate reliance on simplifying heuristics under conditions of time constraints and stress. What is a cognitively complex culture? It is one with many perspectives, backgrounds, skills, time orientations, and cognitive styles. That is, a complex, temporally diverse environment presents one more case for the diversity of personnel.

Measurement and Research Design Issues

As researchers pay more attention to temporal dimensions of organizational cultures, they will face difficult issues surrounding measurement and research design. Measurement of temporal elements of culture presents some intriguing questions. For example, *which* aspects of time -- and even which meanings of time -- should be considered? There is an old story about three baseball umpires. The first says, "I call 'em as I see 'em." The second says, "I call 'em as they are." The third says, "They ain't nothing till I call 'em." Time, and temporal elements, like umpiring, may have perceptual, objective, and socially constructed aspects, each of which may be important. Perception of temporal elements may be most important when the goal is to examine reactions to those elements; for example, our perception of time constraints may be a

primary influence on stress. In other cases, objective time, or the accuracy of perception of time, may be more important. In yet others, social constructions of temporal aspects of culture may be revealing. One thing that is clear is that time and its manifestations are elusive. As just one example, self-reports of time expenditures have "a built-in bias toward over-reporting," with many subjects giving weekly estimates of hours at work that exceed the number of hours in a week (Godbey, Lifset, and Robinson, 1998).

A key item on the research agenda for temporal researchers is development of valid measures of temporal constructs. As we have discussed, Bluedorn, Kalliath, Strube, & Martin (1999) have developed the Inventory of Polychronic Values (IPV), and Schriber & Gutek (1987) have developed an instrument to measure several dimensions of time in organizations. In addition, the Time Structure Questionnaire (TSQ; Bond & Feather, 1988) assesses the degree to which individuals perceive their use of time to be structured and purposive. Another measure, the Time Perspective Questionnaire (TPQ; Lennings, 1991), asks respondents to list up to 7 events they think will occur in their personal future, 7 events that occurred in their personal past, 10 events they think will occur in society's future, and 10 events that occurred in society's past. They are also asked to indicate how far (in terms of time) from now each event would occur and whether they thought the event would be pleasant or unpleasant. The Inventory of Temporal Experience (Yonge, 1973, 1975) captures such dimensions as Animal Time (negative attitude toward time, with time seen as discontinuous, static, and somewhat overwhelming), Vital Time (measuring the notion of time as connected and unitary, with high scores indicating a liking for planning, working out schemes, and anticipating results), and Physical Time (a neutral attitude toward time).

These measures notwithstanding, time-related measures are often *ad hoc*, and researchers sometimes do little to demonstrate the construct validity of their measures. It will be important in future research to both show that measures have, for instance, acceptable reliabilities, and also that they adequately gauge distinct constructs. For example, we noted earlier that clockspeed, velocity, and hypercompetitiveness each reflect manifestations of speed. Clockspeed relates to product development time, velocity to temporal aspects of environments, and hypercompetitiveness more specifically to temporal elements of competitiveness interaction. Measures that capture the essence of each of these constructs, as well as their degree of domain overlap, could facilitate cumulative understanding of critical temporal issues.

Previous research on culture has suggested several ways in which culture can be identified, and each of those elements may provide temporal clues. Among common visible elements are stories, symbols, rituals, heroes, and rites and ceremonies. In addition, values, sometimes called the “bedrock of culture,” may have cultural dimensions. From a measurement perspective, these elements are important in at least two ways. First, they may directly speak to temporal aspects of culture; stories may have temporal elements, symbols may relate to speed, values may address time, and so on. Second, the mere presence of some cultural elements may have temporal implications. For example, rites of passage – whatever their substantive emphasis -- may focus attention on the passage of time. Rites of enhancement, such as annual award meetings, may cue attention to particular points in time, as may activities such as annual performance appraisals. As such, it may be useful both to gauge both the levels of use of elements and their temporal contents.

Some suggestions for measurement of the temporal dimensions of cultural elements are straightforward. For example, leaders' speeches, annual reports, and company Web pages and

newsletters could be coded for attention to time, including references to the past and future, to temporal depth, to resources with temporal elements (such as speed and tradition), and so on. In addition, the physical setting may speak to temporal elements. As noted earlier, for example, are clocks widely evident? Are they placed in positions that permit their unobtrusive observation during meetings and conversations? Have they been synchronized? Further, what mottoes are evident? Does the company's logo speak to speed? What metaphors do employees use when speaking of the company? Do those metaphors have temporal dimensions (e.g., treadmill, sloth, a runaway train, an ostrich, a racetrack). What cartoons or humorous quotes are taped to walls? Signs such as "You want it *when*?" or Dilbert cartoons showing bosses making unreasonable time demands may be revealing. Further, values scales should include a full complement of temporal values.

A final measurement issue is that of *who* should be asked to provide cultural information. We suggest that researchers should sample as broadly as possible. This might include examination of archival data and surveys, interviews, and focus groups with members of the focal organization. In addition, customers, suppliers, community members, competitors, and others may provide valuable information about temporal elements of culture. Hall noted in his discussion of monochronic and polychronic time that life occurs in a time-frame that we tend to take for granted. Given this, he said, "I came to recognize that pattern through the same method I use in most of my field work: I observed people's responses to cultures other than their own" (cited in Bluedorn, 1998). Thus, those outside the focal organization may provide valuable insights into temporal elements of its culture. Do competitors see the firm as nimble and responsive? Do suppliers feel rushed? Do customers see the firm as temporally responsive? Do industry experts see the firm's actions as short-sighted?

Conclusion

In this chapter we have attempted to illustrate the importance of considering temporal elements in future organizational culture research. Time is a pervasive element in organizational lives, and as we described, it takes many forms including artifacts, norms and assumptions. Greater attention has been given to time in organizational research in recent years. This awareness and enthusiasm has begun to spill over into research on organizational culture. The links we made to several research domains suggest that there is much in the way of exciting as well as influential research to be done. It is our hope that our discussion will stimulate future research in these areas.

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TABLE 1

Dimensions of Time Identified in Organizational Culture Research

Schein (1992)	
Past, present, near- or far-future orientation	Basic orientation toward the past, present, or future. Past orientations focuses on how things used to be; Present orientation focuses on getting the immediate task done; Near-Future focuses on quarterly results; Distant Future focuses on long term investments like R&D and building market share. (Based on Kluckhorn & Strodtbeck, 1961)
Monochronicity or Polychronicity	Monochronic focuses on doing one thing at a time and dividing time into manageable “chunks;” time is viewed as a valuable commodity that can be spent or wasted. Polychronic focuses doing several things simultaneously; time is viewed in phases and cycles. (Based on Hall, 19xx)
Planning or Development Time	Planning time involves viewing time as linear, and uses targets like deadlines that are tied to external opportunities. Development time sees the “appropriate” time for the project to emerge as driving planning and development. (Based on Dubinskas, 1988)
Discretionary Time Horizons	The size of relative units in relation to tasks. (Based on Jacques, 1982; Lawrence & Lorsch, 1967)
Symmetry of Temporal Activities & Pacing	Events sequentially paced to create symmetry and ease coordination.
Schriber & Gutek (1987)	
Speed vs. Quality	Norms about importance of speed vs. quality
Schedules & Deadlines	Importance of meeting deadlines and staying on schedule. Being on time.
Allocation	Adequacy of time allocation for tasks.
Future Orientation	Emphasis on planning and future perspective.
Punctuality	Norms about punctuality; perceived effects of arriving late for work; from break.
Time boundaries between work and non-work	Strength of boundaries between work and non-work. Norms about staying late, taking work home.
Awareness of Time Use	How much people think about and plan their use of time.
Work Pace	Norms about speed and pace of work.
Autonomy of time Use.	Control over time use.
Synchronization	Importance of coordinating time with others.
Intraorganizational Time Boundaries	Whether different time boundaries exist within the organization.
Time Buffers	Existence of breaks and other buffers in the work day
Sequencing	Temporal dependence of tasks within jobs.
Bluedorn (2000)	
Polychronicity	Extent to which people prefer to engage in two or more tasks or events simultaneously and believe their preference is the correct way to do things.
Temporal Focus	Degree of emphasis on past, present or future.
Temporal Depth	Temporal distances into the past or future typically considered when contemplating events that have happened, may have happened, or may happen.

FIGURE 1

