

TIME, TEMPORAL CAPABILITY, AND PLANNED CHANGE

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I propose four ideal types of planned change processes, each with distinct temporal and nontemporal assumptions, and each associated with altering a distinct organizational element. These types are commanding, engineering, teaching, and socializing. I then argue that large-scale change involves an alteration of multiple organizational elements, thus requiring enactment of multiple intervention ideal types. This requires change agents to display temporal capability skills to effectively sequence, time, pace, and combine various interventions.

There is doubt as to whether change research has produced a cumulative and falsifiable body of knowledge (Rajagopalan & Spreitzer, 1997; Weick & Quinn, 1999). Lack of rigorous knowledge is not only frustrating for scholars but affects millions of people undergoing planned change (Ghoshal & Caulkin, 1998). Although prescriptions for change intervention abound (e.g., Beer, Eisenstat, & Spector, 1990; Kotter, 1995; Schein, 1992), scholars continue to lament that the literature on the management of change has been largely atheoretical (Hendry, 1996; Pettigrew, 1985) and fragmented (Mintzberg & Westley, 1992). There is a need for more research that looks at the change process from the manager's perspective to generate new knowledge that can advance both theory and practice (Van de Ven, 1992).

There are many important dimensions in organizational change (cf. Greenwood & Hinings, 1996; Ledford, Mohrman, Mohrman, Jr., & Lawler, 1989), but in this article I seek to contribute to the development of planned change theory by focusing on two constructs that have been underexplored: time and the content of change. There are several reasons for this focus. First, time is inherent in the definition of change itself (Ford & Ford, 1995), yet it remains largely implicit and

unexamined in organizational change theories (Albert, 1995; Mosakowski & Earley, 2000; Sastry, 1997). Second, content represents one of the three critical dimensions of change, along with context and process (Pettigrew, 1990). Third, time and content are often interrelated in planned change practice because some organizational elements can generally be changed faster than others. For instance, change in formal structures typically takes less time than change in ingrained beliefs and values (Bartunek, 1984). Although time and content are interrelated, I discuss them in turn to explain their importance to planned change theories.

TIME AND CONTENT OF CHANGE

Assumptions about time are important to organizational theory in general because they influence decision makers' choices related to resource allocation and prioritization, timing, and urgency of organizational activities (Mosakowski & Earley, 2000). One important assumption is one's time perspective—that is, the temporal zone to which one mentally extends oneself when considering what goals and actions to undertake (Nuttin, 1985). Future goals affect present behavior when there is a temporal integration that makes the future continuous with the present and when people perceive they are able to influence the outcome.¹ Perspectives

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¹ A long-term (or future) time perspective differs from a short-term (or present) time perspective by the degree of distance on two dimensions: (1) strength of the belief in the conditional probability that if a specific behavior (say hard work) is performed in the present, the probability of some

on time influence the choice of change actions. Agents with a short-term perspective may choose change actions that produce immediate, visible results and pay less attention to long-term outcomes. Those with a future time perspective may choose more patient approaches that emphasize long-term, lasting outcomes (Das, 1987). Agents' goals or purpose, values, and assumptions are important, because they can influence the choice of content, timing, sequencing, and process of change (Albert, 1995; Beer & Nohria, 2000; Mintzberg & Westley, 1992).

Another important temporal assumption involves the conception of time. In the context of change, Sztompka (1993) suggests there are two conceptions of time—quantitative and qualitative—that partly determine the nature of the organizational problems that will attract attention, how those problems will be coped with, and what will constitute satisfactory solutions (McGrath & Rotchford, 1983). Quantitative time refers to clock time (a succession of seconds) that is amenable to precise measurement via discrete division, is subject to a unitary interpretation, progresses forward linearly, and flows evenly (Bluedorn & Denhardt, 1988). In contrast, qualitative time can follow different, indeterminate event trajectories, can be subject to multiple interpretations (plurality of meanings), can flow discontinuously, and cannot be measured and manipulated easily.

Time is valued differently depending on how one conceives it. Proponents of quantitative time value it as a scarce commodity exchangeable with money, as epitomized in the expression "time is money." Proponents of qualitative time value it as private emotional equanimity or meaningful social experience. Qualitative time is important in change processes, because subjective temporal experiences represent potential sources of psychological stress (McGrath & Rotchford, 1983). All these temporal assumptions are important in considering the content of change.

Although theorists of revolutionary change have advocated that all organizational elements, such as strategy, structures, people, systems, and culture, have to be changed simulta-

neously to achieve maximum organizational alignment and effectiveness (e.g., Miller & Friesen, 1984; Tushman & Romanelli, 1985), closer field examination done in finer time intervals suggests that the realization of many such changes is fraught with difficulties and typically takes several years, if not decades (Bartunek, 1984; Pettigrew, 1985; Pettigrew, Ferlie, & McKee, 1992). Different contents may require different assumptions about time.

Mintzberg and Westley (1992) argue that tangible (concrete) versus intangible (abstract) contents of change are important attributes because they determine the level of difficulty and sequencing of change actions. What are some of the important elements that constitute the content of organizational change? The literature on punctuated equilibrium indicates that there are at least two important elements, both of which tend to be large in scope: *formal structures*—official allocation of authority and division of responsibility among people and groups inside the organization—and *systems of shared beliefs* (Romanelli & Tushman, 1994). While some isolated or less tightly coupled beliefs could be changed incrementally, change to a system of interrelated beliefs often mandates radical, second-order change. This refers to fundamental "changes in the cognitive frameworks underlying the organization's activities, changes in the deep structure or shared schemata that generate and give meaning to these activities" (Bartunek & Moch, 1994: 24). Changes to tightly coupled formal structures associated with strong power bases and deep systems of beliefs often require a forceful intervention (Gersick, 1991) and discontinuous replacement (Ford & Ford, 1995).

Complementing the episodic, punctuated equilibrium perspective focusing on radical, discontinuous changes in formal structures or systems of beliefs, the continuous change perspective draws our attention to at least two other important elements: *work processes* and *social relationships* (Weick & Quinn, 1999). Work processes refer to what employees actually do collectively to deliver products and services to customers. Social relationships refer to the nature and quality of interpersonal interactions among employees in their daily work. Productive outcomes in the continuous change perspective are assumed to result from continuing improvement in work processes and social prac-

future goal attainment (say a successful career) will be greater and (2) strength of the tendency to value goals whose attainment can only occur in the future, as opposed to alternative, near-term goals (Jones, 1988).

tices (Tsoukas, 1996). These changes are often driven by daily improvisations and small accommodations that accumulate to create substantial change (Orlikowski, 1996). Productive change seldom comes from wholesale and rapid substitution of existing abilities; rather, it involves continuously strengthening existing competence and enlarging the repertoire of potential actions (Pye, 1994).

These four elements together suggest that the content of change could be either tangible or intangible. Congruent with this distinction, Beer and Nohria (2000) propose that there are essentially two theories of change, each exhibiting different goals, assumptions, and values, which thereby initiate change by focusing on different contents: theory E favors altering tangible structures and work processes (hardware) first; theory O seeks to revitalize culture, including beliefs and social relations (software), first.

How do change agents go about altering each of the four organizational elements—formal structures, work processes, belief systems, and social relations? Several bodies of literature dealing with planned organizational change offer some insights about potentially effective means: strategic management, work process change, organizational development, and organization theory. I have selected this literature to illustrate the presence of distinct theoretical assumptions and because each contains a substantial body of work indicating that people can effect meaningful change. Many—but certainly not all—of the works lean toward the teleological motor of change advanced by Van de Ven and Poole (1995)—that is, change proceeds toward a goal and is driven by purposeful and adaptive individuals. I elaborate this teleological motor by suggesting that there are different “models of engines” or intervention theories. These refer to change agents’ logically consistent patterned actions.

To make sense of the voluminous literature on planned change, I try to distinguish certain distinct patterns and analyze and synthesize them as ideal types. Ideal types follow an intellectual tradition presupposing that a certain level of congruence exists among organizational attributes and that this congruence produces a finite number of unique combinations that are believed to determine the relevant outcome (Greenwood & Hinings, 1988). Ideal types come with at least one cost: nuances are lost in the

search for overall patterns. Theoretical specification of ideal types allows theory developers to move beyond the limitations of the current empirical world and might help researchers identify organizing approaches that are more effective than those currently observed (cf. Doty & Glick, 1994).² Complex phenomena such as large-scale change can be analyzed (or synthesized) in greater detail as the juxtaposition and interaction among multiple ideal types of intervention (Van de Ven & Poole, 1995). I focus on large-scale change because more is known about realizing evolutionary change than revolutionary change, and because organizations increasingly need to develop capabilities for doing both types of change to ensure their long-term survival (Tushman & O’Reilly, 1996).

In reviewing the aforementioned selected literature dealing with how to change each of the four content elements, I derived four ideal types of intervention approaches, which I label *commanding* (to change formal structures), *engineering* (to change work processes), *teaching* (to change beliefs), and *socializing* (to change social relationships). (See Table 1.) I stress that the review and the classification of the very large body of change literature are almost, by necessity, eclectic and reductionistic (Van de Ven & Poole, 1995). Each ideal type seems relatively more effective than others at changing a specific organizational element. To illustrate, the commanding type is relatively more effective at making changes in formal structures than the teaching, engineering, and socializing types. This does not imply, however, that change in formal structures done through commanding cannot be preceded or combined with other types that make the commanding approach more acceptable to change recipients.

² Ideal types are formed as the “one-sided accentuation of one or more points of view and by the synthesis of a great many diverse, more or less present and occasionally absent concrete individual phenomena” (Weber, 1904: 90). Thus, one expects empirical examples of pure ideal types to be very rare or even nonexistent. Actual forms of organizing may be more or less similar to an ideal type, but it is not necessary that they be assigned to only one ideal type. The closer one form of organizing is to one ideal type, the more it can be predicted to be effective at achieving a specified outcome. Predictions can be falsified by assessing deviations between real forms and ideal types. Ideal types allow holistic consideration of multiple synergistic constructs, as well as development of falsifiable theories.

TABLE 1
Content of Change and Associated Change
Intervention Ideal Types

Tangibility of Content	Emphasis of Change Literature	
	Episodic Change	Continuous Change
Tangible (Theory E)	Formal structures (changed through commanding)	Work processes (changed through engineering)
Intangible (Theory O)	Beliefs (changed through teaching)	Social relationships (changed through socializing)

I organize the remainder of the paper as follows. I first define each ideal type as a specific intervention process along the five elements of a comprehensive change theory suggested by Dunphy (1996)³ and develop propositions relating this process to the content of change along the timing model suggested by Albert (1995).⁴ Next, I explain the realization of large-scale change as involving the alteration of multiple organizational elements and application of many intervention ideal types, and I propose the beginning of a synthesis of interventions via the concept of temporal capability, involving sequencing and combining the ideal types.

³ Dunphy (1996) suggests that any comprehensive theory of change should incorporate at least five components: (1) a basic metaphor of the nature of organization (Morgan, 1986); (2) an analytical framework or diagnostic model to understand the organizational change process; (3) an ideal model of an effectively functioning organization that specifies both the direction of change and values used in assessing the success of a change intervention (e.g., shareholder versus employee welfare); (4) an intervention theory that specifies when, where, and how to intervene so as to move the organization closer to the ideal; and (5) a definition of the role of the change agents.

⁴ Albert (1995) suggests that a theory of timing—when something should be done—should specify at least five components: (1) what is to be done (action); (2) characteristics of the agents (e.g., values, beliefs, or skills) acting or making timing decisions; (3) purpose; (4) nature of the larger plot or meaningful social-temporal context; and (5) a positioning rule that relates the previous four elements together, such as (for a given person with certain beliefs and values) do action X, which has certain properties, at time t to achieve the stated purpose.

FOUR IDEAL TYPES OF CHANGE INTERVENTION

Commanding Intervention and Change in Formal Structures

When Al Dunlap assumed leadership of change at Scott Paper in 1994, he began by making dramatic changes to the tangible formal structures. He sold off several businesses and immediately downsized the work force by 11,000 employees. He quickly decided to outsource many administrative functions. Increasing economic shareholder value was his first and only priority. The CEO was under fire from financial markets. There was no time to involve others or develop organizational capability. Instead, Dunlap relied on the advice and political support of external consultants who were brought in to identify painful cost-savings initiatives. The imposed changes were executed like clear steps in a comprehensive military battle plan. Managers followed strict orders and deadlines, or risked being fired (Beer & Nohria, 2000).

This vignette illustrates the application of the commanding ideal type—a commander-like approach whereby change agents apply directive and coercive actions to their change targets to exact compliance with their proposed change goals. Quantitative time tends to dominate in this intervention as a measure of the rate and success of change, and clock time is often used to dictate the level of economic performance that should be achieved at any single moment in time. Economic success has meaning only when mapped onto a clock-time horizon. For instance, investors may view a turnaround as a success if earnings improve by 2 percent every quarter but unsatisfactory if this result is achieved over a decade. Financial measures such as earnings growth or discounted payback period are based on clock time (e.g., Miles, 1997).

The purpose and rate of change are often attributed to factors external to the organization, such as changes in regulatory regimes (Biggart, 1977), anticipated competitive pressures that impair the life chance of the organization (Tichy & Sherman, 1994), or unsatisfactory financial performance as evaluated by external investors (Miles, 1997). Thus, change actions tend to be entrained to an external pacer—speedy adaptation to an external environment driven by influential external stakeholders and competitors.⁵

⁵ Entrainment refers to the process whereby an endogenous rhythm is modified by exogenous factors, known as

Little attention is paid to the organization's internal capabilities or individual issues (Beer & Nohria, 2000).

The commanding intervention is prevalent in the strategic management literature and is implicit in what Mintzberg and Lampel (1999) call the "design" (Andrews, 1987) and "positioning" (Porter, 1980) schools. Frameworks used for comprehensive strategic planning include competitive analysis, portfolio management, generic strategies, the experience curve, and managing large-scale change in complex organizations (e.g., Beckhard & Harris, 1987). Prescient and comprehensive planning before radical change is assumed to be possible. The future is assumed to be knowable and repositioning in more profitable industry segments possible through systematic analyses of environmental and industry factors (Porter, 1980). This legitimizes the use of external consultants, who apply generic analytical frameworks (Beer & Nohria, 2000). Leadership of change belongs to one small group of people, typically located at the top of the formal hierarchy—the top team aided by external consultants. The goal is to create an economically performing organization weighed by clock time. The faster the lower levels of the organization can align themselves with the top's directives, the faster the desired economic performance is assumed to be realized. Thus, the lower levels of the organization are assumed to be very tightly coupled, like a mechanical clock.

The dominant theories in use include exacting compliance to orders and elimination. Even in the absence of immediate external pressures, change agents can still justify strict compliance to a major change by invoking future threats to raise performance expectations and by holding subordinates accountable for achieving them, much as Jack Welch required General Electric (GE) divisions to be first or second in their respective markets (Tichy & Sherman, 1994). This

urgency justifies the use of clear orders and implacable sanctions to deter disobedience and realize speed and consistency in collective action. The tactic used is predominantly power coercive (Chin & Benne, 1994), which emphasizes political and economic sanctions as well as moral power to arouse feelings of guilt and shame (Ansoff, 1988).

Elimination (Biggart, 1977) change actions mainly involve eliminating formal structures through such means as top team turnover, downsizing, or divestment of product domains. This kind of tangible content is relatively easy for managers to modify and control (Grinyer & McKiernan, 1990). Preferred change actions are those that are visible, quick to implement, and produce an immediate impact. The pacing (defined as how quickly an event unfolds during a series of events or density of events per unit of time) of the commanding type tends to be abrupt and rapid to reduce the risk of competitors' moves and to prevent resistance to change from gathering momentum inside the organization.

At best, one can use this intervention to order a change in tangible entities, such as people (e.g., downsizing) or formal structures and systems (e.g., divestment), but it is unlikely that one can decree a lasting qualitative change in basic beliefs or values. It is also likely that many agents applying the commanding intervention hold a time perspective that favors the near term. The future matters to the extent that time can be quantified in terms of money and clock time. The prevalent goal of change agents is superior economic performance, reflecting the high value they attach to shareholder value creation (Beer & Nohria, 2000). The following proposition is structured along Albert's (1995) five components of timing, which relate certain temporal constructs to the content, process, and characteristics of agents of change.⁶

external pacers. An example often used in biology is a person's circadian rhythm (meaning about a day), whereby most bodily cycles are entrained to the light-dark, 24-hour cycle (Ancona & Chong, 1996). In organizational settings entrainment refers to the adjustment of the pace or cycle of an organizational activity to match or synchronize with some other activity. During a change process, different groups may be locked onto different external pacers. For instance, the top team may be locked to investors' timetables while the rest of the organization may be focused on internal deadlines.

⁶ When applied here, Albert's (1995) five components of timing—when something should be done—include (1) what is to be done (e.g., commanding changes in formal structures; I define the ideal type essentially by the five elements of a comprehensive change theory as shown in the first five rows of Table 3 and pacing in the last row of Table 2), (2) characteristics of the agents (e.g., values, beliefs, or skills) making timing decisions (e.g., change agents who value fast improvements, a quantitative conception of time and entrainment by factors outside the organization, and a near-term time perspective), (3) purpose to be achieved (improved economic performance), (4) nature of the larger plot or social-

Proposition 1: The commanding intervention approach is likely to be relatively effective at changing formal structures and is likely to be used when change agents' purpose is to produce fast improvement in the firm's economic performance or when they value a quantitative conception of time and entrainment by factors outside the organization and a time perspective that favors the near term.

Engineering Intervention and Change in Work Processes

IBM Credit slashed its seven-day turnaround to four hours. It did so [with] a small head-count reduction. . . . The number of deals that it handles has increased . . . one hundred times . . . a 90-percent reduction in cycle time and a hundred fold improvement in productivity—easily meets our definition of reengineering. . . . Reengineering is the fundamental rethinking and redesign of business processes to achieve dramatic improvements in . . . cost, quality, service, and speed. . . . Business process [is] a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer (Hammer & Champy, 1993: 32-39).

This vignette illustrates the salience of changing work processes and the ongoing preoccupation of increasing productivity through speed based on clock time. The engineering intervention refers to change agents' actions of analyzing, understanding, and then redesigning work processes to improve the speed and quality of production. Change actions aim at redesigning and reprogramming work processes based on clock time. Recent exemplars of work-process-focused changes include quality circles and total quality management, business process reengineering, and just-in-time transactions (Abrahamson & Fairchild, 1999; Juran, 1967).

The engineering intervention is, in part, rooted in the work of Taylor (1947), who focused on improving the execution of work tasks. Clock time is a scarce factor in production that can be converted into money. But, unlike in the commanding intervention, interdependent work units are entrained to pacers that are inherent to

the logic of the overall work process. For instance, the temporal organization of an assembly line is largely determined by the chain of subcomponents of the linear assembly structure, but knowledge of increasing speed in work systems often resides tacitly in the workers. Taylor suggested ways to systematically uncover this tacitness and convert it into explicit knowledge for ease of standardization. The tactic used can be termed *empirical rational*, in which the change target is supposed to be rational and moved by self-interest: an economic justification of the potential personal benefits of the proposed changes is considered sufficient (Chin & Benne, 1994).

By suggesting systematic time and motion study of the best workers, Taylor is the father of future benchmarking and best-in-class studies. Only the level and scope of the studies have changed. Taylor's initial focus on making individual labor more time efficient has been extended to wider organizational processes. Business process reengineering is about rethinking the organization of work. Departmentalized, fragmented tasks become multidimensional, integrated, and adapted to local requirements (Hammer & Champy, 1993). The content of change nonetheless remains focused on work processes, and improvements in clock speed, productivity, and efficiency are held to be key levers in enhancing economic performance.

The main change agents are now task analysts who are skilled in work process analysis and organization design. They guide and develop employees' task skills. Morgan's (1986) machine metaphor seems to fit this intervention by stressing the virtues of efficient organizing, detailed work specification, planning, and control, but the assumption of a precise clock as in the commanding type is not required. Large machine organizations could be effective with multiple loosely coupled work subsystems driven by divergent skills and interests (Cyert & March, 1992). The typical pacing is moderately fast, because engineering work processes usually takes more time than commanding elimination of formal structures (Beer et al., 1990). Diagnosis and redesign of work processes take time; many hitherto tacit tasks have to be analyzed and then optimized. Front-line employees, who possess much of the tacit knowledge, have to be convinced to articulate part of their know-how, which is then validated and programmed. Suc-

temporal context (realization of planned organizational change in situated organizational contexts), and (5) a positioning rule that relates the previous four elements (e.g., the stated proposition).

cess hinges on employees' sustained use of new work processes. Employees have to develop new work habits, and analysts need a moderately long time to engineer and fine-tune these work processes to satisfy the users (Taylor, 1947). For this to happen, change agents stress clock time in work productivity and value a time perspective that favors the medium term. Engineering is more likely to be used when time pressure related to economic improvement is more moderate (Rucci, Kirn, & Quinn, 1998).

Proposition 2: The engineering intervention approach is likely to be relatively effective at changing work processes and is likely to be used when change agents' purpose is to produce moderately fast improvement in the firm's economic performance or when agents value a quantitative conception of time and a time perspective that favors the medium term.

Teaching Intervention and Change in Beliefs

As [CEO] Jacques Nasser has found at Ford, the answer is teaching . . . based on a mechanism I call the teachable point of view. . . . Great leaders . . . have been using it forever. . . . It is galvanizing change programs not only at Ford but also at General Electric, Allied Signal, PepsiCo, and hundreds of other organizations large and small. All [teachable points of view] include ideas, values, emotional energy [how to motivate people], and edge [individual thought process for making difficult decisions]. . . . Implicit knowledge [about underlying assumptions thus] becomes explicit and can then be questioned, refined, and honed to both the leader's and organization's benefits. . . . The power of the teachable point of view is that it gives leaders an explicit body of knowledge to impart (Noel Tichy, quoted in Wetlaufer, 1999: 82–83).

The teaching intervention refers to an analytical and guided learning approach in which change targets participate in their own reeducation through the active involvement of change agents. They are not passive, as in the commanding type; rather, targets collaborate in effecting their own personal change through changes in their fundamental beliefs.

Change agents using the teaching approach (teachers) bring to the surface the targets' deep beliefs, which constitute the background against which things make sense or not. This intervention ideal type draws upon some of the

cognition-focused action research principles found in the organizational development (OD) literature. Change actions are primarily entrained to paces that are outside the organization—external agents' active diagnosis based on their theory of organizational ineffectiveness. Like religious missionaries, and as illustrated in the "teachable point of view" described above, change agents have an a priori theory, concerning beliefs and values, about the truth they seek to impart to their targets. They also believe that cognitive dysfunction is the root cause of problems—that is, individuals' taken-for-granted assumptions lead to unintended consequences (Edmondson, 1996).

For instance, Argyris's (1993) theory of action method probes and reveals the incongruence between espoused theories and theories in use. Schein's (1992) culture diagnosis method seeks to elicit the tacit, shared assumptions of the organization's culture. With his system dynamics method, Senge (1990) tries to map the organization's structure as complex dynamic systems in order to uncover vicious causal loops and decision makers' erroneous mental causal attributions. These scholars believe in sound, cognitive diagnoses of root causes as a prelude to change in behaviors. They use a normative-reeducative method (Chin & Benne, 1994) and believe that outsider intervention is necessary to convert the tacit causes of ineffectiveness into explicit formulations, since employees are cognitively limited and trapped by their own hidden assumptions. Organizations are viewed as psychic prisons (Morgan, 1986) that can be liberated by outside action researchers. Once cognitively liberated, employees are assumed to be able to learn freely, and this enhances the organization's ability to innovate and adapt to uncertain environments.

To expose relationship difficulties in the client systems, teachers try uncovering past beliefs and reconstituting them in the present through retrospective sensemaking (Weick, 1979). These deep beliefs link space and time together within individuals' consciousness to project a sense of stability and coherence. Challenging these beliefs is tantamount to upsetting a person's inner time, and this causes personal distress. *Inner time* refers to qualitative time experienced at the subjective level of individual

consciousness.⁷ Time is construed as a flow that links together personal experiences of things and states and makes them appear to be continuous. Time and space represent two "vehicles of continuity in which the world's parts hang together" (Mead, 1932: 134). Inner time is also valued as emotional equanimity because it is, in part, felt as such, and neither time nor emotions require space to exist (Sharron, 1982). During the sensemaking activities of a major change (Gioia & Chittipeddi, 1991), people try to understand by going back and forth within their own experiences. Since one cannot distinguish a figure without a background, the present does not meaningfully exist without a past. Inner time allows us to relive the past and prelive the future in the present.

When upsetting inner time, change agents have to ensure the presence of a minimum level of psychological comfort to avoid harming those they seek to change and to improve their receptivity to new but potentially threatening ideas (Schein, 1996). To build trust, teachers should be sympathetic. The most skilled teachers are likely to be trained process consultants and psychoanalysts who can play the role of philosopher-psychologist and are competent in interpersonal inquiry (Edmondson, 1996). The intensity and pace of change are individualized and gradual. Teachers have to be patient and value a time perspective that is moderately long, since changes in fundamental beliefs constitute, for the most part, a gradual and voluntary process and, thus, can rarely be imposed with raw power (Bartunek, 1984).

Proposition 3: The teaching intervention approach is likely to be relatively effective at changing beliefs and is likely to be used when change agents' purpose is to develop the firm's organizational capabilities or when agents value qualitative inner time as a conception of time and a time perspective that favors a moderately long term.

⁷ For instance, an individual's time seems to be passing more rapidly if it is filled with stimulating activities. However, the opposite occurs when one makes retrospective judgments about the passing of time in the past—one tends to remember stimulating or busy times as having passed slowly (McGrath & Rotchford, 1983: 64). This subjective experience of time illustrates the manifestation of inner time within individuals (Bergson, 1965).

Socializing Intervention and Change in Social Relationships

[A chart indicating the desirable changes in the quality of relationships among the hospital's individual employees and their units was developed through wide consultation—for instance, from factionalism, resentment, conflict avoidance, and secrecy to federation, tolerance, conflict negotiation, and openness, respectively.] The chart provided a sort of ethic for the terms on which change would occur. As a senior nurse pointed out to us: "I got that from/to pinned to my desk and it makes me think about what I'm doing and say 'Hold on, is this what we want from the new culture?'—and it seems to touch on my staff and other departments I come into contact with as well. I mean, no one can deny it's the change we need—we all said it." . . . People need to ask themselves whether their actions are consistent with the organization they are attempting to create. . . . We will have to change the way we . . . treat each other if we really want to change the culture of this organization (Bate, Khan, & Pye, 2000: 204–205).

The socializing intervention refers to change agents' actions to enhance the quality of the social relationships among organization members to realize organizational tasks. Social relations in change contexts involve individual emotions as well as concerns about power and politics (Huy, 1999; Vince & Broussine, 1996). Unlike the cognitive-based teaching approach, in which it is assumed that change in beliefs will lead to change in behaviors, in the socializing approach it is assumed that change in behavioral interactions among individuals will lead to change in beliefs and organizational culture (Bate et al., 2000; Westley, 1990).

The socializing approach relies on qualitative, social time as the dominant conception. Social time refers to the temporal ordering and patterns embedded in social processes. It is associated with meaningful events, rather than with clock time, and these events are defined by the actors who socialize with each other (Clark, 1985). Thus, the pacer here is internal to the organization, because meaningful events arise from the ongoing process of social bonding between organization members, who engage in recurrent rituals to build shared meanings and maintain them in cyclical social time. Cyclical patterns project temporal continuity and create the impression that certain events in life are predictable—for instance, Christmas Eve always occurs on December 24. By strengthening

social bonds, social time creates an illusion of structure and stability. Such feelings of continuity are important during major changes, because they help reduce the anxiety caused by perceptions of unpredictability (Schein, 1996).

Change agents using the socializing approach are often self-motivated employees who are distributed throughout all levels of the organization. They have bought into the necessity for change and seek to develop synergy among various groups. They build a new social time by engaging in continuous experiential learning with change recipients. Change thus occurs through personalized, open, and imaginative conversations (Ford & Ford, 1995; Quinn, 1996).

Changes in social relationships are revealed, in part, through change in interpersonal communications; the way people talk to one another reveals the ongoing enactment of control in a relationship (Fairhurst, Green, & Courtright, 1995). Indeed, people's behaviors result from the reciprocal responses that occur in relationships; a person reacts not to another person proper but to the perceived nature of the relationship between the two of them (Follett, 1996). As illustrated by the senior nurse's behavior above, socializers first look introspectively at themselves, trying to behave as role models and displaying empathy toward those whom they seek to change. Socializers are different from teachers, who can preach new norms to their targets without feeling the need to change themselves because, as agents, they assume that they are external or transient to the targeted social system (Quinn, Brown, & Spreitzer, 1997).

Change agents' time perspective typically is long term, for they believe that forging quality relationships for the long run will facilitate qualitative changes in individuals' deep values (Austin, 1997). Values influence how people relate to each other and are difficult to change directly and rapidly (Schein, 1992). I label this approach *empirical normative*, because change in relational behaviors is assumed to precede change in values.

The socializing intervention is consistent with Morgan's (1986) metaphor of organizations as organisms: interrelated systems open to their task environment that are able to self-regulate and evolve. Thus, the main purpose of change agents is to develop organizational learning capabilities that will confer superior adaptability on firms in uncertain environments (Brown &

Eisenhardt, 1997). Agents assume that meaningful change will emerge as a result of the social learning processes among various groups (Hendry, 1996), and this assumption also draws, in part, from several change models: the social-technical system method (Emery & Trist, 1973) and the empowering self-modification (ESM) model (Quinn et al., 1997).

Emery and Trist (1973) contend that attention to both social dimensions and task technology is necessary for work effectiveness. The ideal organization can be construed as a democratic community of semiautonomous workgroups that not only regulate themselves but are also capable of continuous learning. This situated learning takes place in communities of practice and pertains to developing shared understandings about relationships and linking formal knowledge with tacit skills in context (Lave & Wenger, 1991). Members engage in problem-solving activities related to tasks while reproducing and repairing the social context. The change agent plays the role of a social facilitator in work design issues (Westley, 1990).

Quinn and colleagues' (1997) ESM model holds that effective change agents start a change effort by first changing their own behavior. Sequencing the subject of change—agent before target—is important here. Agents should first engage in deep self-questioning and act according to their newly espoused values. Only by first changing themselves can they develop the skills and credibility to convince others to change. Agents become socially embedded in the target organization and act as role models. In this approach it is assumed that "the most important sources of influence are relationships, not arguments, or reasons, or methods" (Thompson, 1988: 134). Change emerges slowly, through a process of openness free from the fear of external sanctions; in this way, people empower themselves.

In contrast to the commanding approach, socializing does not require top managers to have extraordinary strategic foresight. Managers should nurture an internal context that correctly reflects external pressures and in which variation, divergences, and open debate about competing options are tolerated (Burgelman, 1996; Tushman & O'Reilly, 1996). Agents guide the change process in a cooperative mode. As change diffuses and takes hold, the group's membership widens (Austin, 1997). Socializers

tend to value a long-term perspective. To build trust they typically move at a patient pace and do not rush their targets into submission (Quinn, 1980). The pacing is gradual, as change agents allow adequate time for the targets to assess the desirability of the proposed change and to be convinced that the agents' expressed concern for their welfare is not just opportunistic and short term. Only then can change targets be receptive to altering the nature of their relationships and values.

Proposition 4: The socializing intervention approach is likely to be relatively effective at changing social relationships and is likely to be used when change agents' purpose is to develop the firm's organizational capabilities or when agents value qualitative social time as a conception of time and a time perspective that favors the long term.

Table 2 summarizes the temporal assumptions associated with each ideal type, and Table 3 summarizes the nontemporal assumptions. Because assumptions differ widely in the different ideal types, the success of change implementation may hinge on judicious use of multiple intervention types, which requires a keen awareness of the potential implications of each approach in its local social-temporal context. In particular, revolutionary changes should be multifaceted, simultaneous, and expeditious in order to reach a new coherent configuration rapidly (Miller & Friesen, 1984). This, in turn, suggests that change agents need to have temporal capability: the ability to comprehend various seemingly opposite temporal conceptions about

change (e.g., clock, inner, social time; inside and outside entrainment; time perspectives) and dimensions (e.g., sequencing, timing, pacing, combining); to discriminate among them; and to use this information to guide their thinking and action, including enacting multiple intervention types. Temporally capable people display temporal complexity, in that they can both integrate and differentiate multiple temporal constructs and perform multiple and seemingly paradoxical activities (Denison, Hoojberg, & Quinn, 1995).

TEMPORAL CAPABILITY AND THE CHALLENGE OF LARGE-SCALE CHANGE

Large-scale change, by definition, involves a significant alteration of many organizational elements, such as formal structures, work systems, beliefs, and social relationships. Change can be both deep and pervasive (Ledford et al., 1989; Tushman & Romanelli, 1985). This may require that more than one intervention approach be applied, since none of the four types can, by itself, lead to large-scale change (Beer & Eisenstat, 2000), and each of the approaches has its limitations, as summarized in Table 4. Thus, to realize large-scale change, it seems necessary for temporally capable change agents to mindfully juxtapose multiple intervention types while attending to multiple conceptions of time.

Attending to Multiple Conceptions of Time

Improperly executed, multiple seemingly contradictory interventions risk upsetting employees' temporal work routines (clock time), their psychological comfort (inner time), and the quality of their relationships (social time). When one

TABLE 2
Temporal Assumptions of Change Intervention Ideal Types

Temporal Assumptions	Ideal Types			
	Commanding Intervention	Engineering Intervention	Teaching Intervention	Socializing Intervention
Conception of time	Quantitative (clock time)	Quantitative (clock time)	Qualitative (inner time)	Qualitative (social time)
Entrainment by factors	Outside the organization (financial markets)	Inside the organization (logic of work processes)	Inside the organization (individual psychology)	Inside the organization (interpersonal relations, shared norms)
Time perspective	Near term	Medium term	Moderately long term	Long term
Pacing	Abrupt, rapid	Moderately fast	Gradual	Gradual

TABLE 3
Nontemporal Assumptions of Change Intervention Ideal Types

Nontemporal Assumptions	Commanding Intervention	Engineering Intervention	Teaching Intervention	Socializing Intervention
Metaphor of organization	<ul style="list-style-type: none"> Mechanical clock Top management as operators; others are tightly coupled parts 	<ul style="list-style-type: none"> Machine organization Thinkers (analysts) versus doers (workers) 	<ul style="list-style-type: none"> Psychic prison Members are well meaning but cognitively deficient 	<ul style="list-style-type: none"> Organism Organic open system
Analytical frameworks or diagnostic models	<ul style="list-style-type: none"> Design and position schools of strategic management (Andrews, 1987; Porter, 1980) Strategic implementation (Ansoff, 1988; Bourgeois & Brodwin, 1984) 	<ul style="list-style-type: none"> Scientific management (Taylor, 1947) Quality management (Juran, 1967) Process reengineering (Hammer & Champy, 1993) 	Cognition-focused OD action research principles (Argyris, 1993; Schein, 1992; Senge, 1990)	<ul style="list-style-type: none"> Social-technical systems (Emery & Trist, 1973) ESM (Quinn et al., 1997) Social learning theory (Hendry, 1996)
Goal or ideal organizational state	Portfolio of business units structurally well positioned in given industries to achieve superior economic performance	High-productivity, efficient work processes to achieve superior economic performance	Community of responsible and mindful individuals learning in an open climate; innovative and adaptive to uncertain environments	Democratic community of semiautonomous workgroups learning continuously; innovative and adaptive to uncertain environments
Intervention theory	Competitive analysis; strategic planning and repositioning; top-down, imposed, comprehensive organizational change	Work process analysis, redesign and reengineering, and quality management	Exposing shared tacit assumptions and taken-for-granted cause-effect relationships in organizational beliefs and behaviors	Participative experiential learning and workplace redesign around social-technical principles
Role of change agents	Commander	Analyst	Teacher; philosopher-psychologist	Facilitator; role model
Typical change actions	Demand strict compliance, eliminate (downsize, outsource, divest)	Analyze, design work systems, and develop task-based skills	Probe, reveal, teach	Facilitate, empathize, self-monitor
Change tactic	Power coercive	Normative reeducative	Empirical rational	Empirical normative
Typical identity of main change agents	Top executives, with analysis aided by external consultants	Work design analysts; external consultants can transfer knowledge to employees	Outsider process consultants and action researchers	Ordinary organization members

TABLE 4
Limitations of Each Intervention Approach for Realizing Large-Scale Change

Intervention Ideal Type	Potential Limitations of Intervention Approach Enacted in Isolation	Illustrative Works
Commanding	Could create covert resentment and resistance. Seldom leads to lasting, deep change in beliefs and values.	Cameron, Freeman, & Mishra, 1993; Collins & Porras, 1994; Noer, 1993
Teaching	Cognitive change does not always lead to sustained behavioral change. Individualistic cognitive change seldom leads to corporate-wide strategic realization.	Argyris, 1993; Edmondson, 1996; Schein, 1992
Engineering	Reinforces autonomy and parochialism of business units at the expense of corporate-wide integration and cooperation. Successful pilot site experiments rarely spread, for their very success generates defensiveness and rejection by other business units claiming that they are different.	Beer, Eisenstat, & Spector, 1990; Miller & Friesen, 1984; Pettigrew, Ferlie, & McKee, 1992
Socializing	Too much socializing could create a splintered, anarchic organization. Groups work at cross-purposes and fight one another for scarce resources. Local expenditure of resources with little clear collective focus. Danger that informal groups indulging in experiential learning may narrow competence and creativity, limit the range of options considered, and tend toward inertia.	Cohen, March, & Olsen, 1972; Fairhurst, Green, & Courtright, 1995; Hendry, 1996

change succeeds and overlaps another, the organization is constantly out of synchronization and increasingly change fatigued. Hence, attention to employees' time-related stress and pressures, as well as various conceptions of time—clock, inner, and social time—is important, as illustrated in the turnaround of Hewlett-Packard's (HP) Santa Rosa Systems Division (SRSD; Beer & Rogers, 1997).

In 1995 HP SRSD executives initiated the turnaround by applying the commanding intervention at a quick pace over one year, and they promptly addressed the unintended adverse effects in the second year with engineering work processes, which attenuated stressful time-related pressures on employees' work roles that decreased their receptivity to change. Imposed change in the formal structures (e.g., matrix) had caused at least three kinds of time-related stress: role ambiguity, such that some employees did not know when to play a specific role; role conflict, such that they did not know which of the competing role behaviors to perform at a specific time; and role overload, such that employees had to perform more role behaviors than was possible in a given time period (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964).

The top team then focused on overhauling processes of order generation and fulfillment (engineering), which had created the vicious cycles of order overload, overwork, stress, burnout, and low morale among employees, leading to difficulty in recruiting new staff and to customer dissatisfaction. Executives, relieved from micro-management, had more time for leadership activities more appreciated by employees, such as meeting them face to face and communicating their vision. Governing values were articulated to restate management's commitment to balance economic benefits and the interests of customers against employees' welfare and quality of work life (socializing and teaching). Recruiting increased to reduce understaffing and overwork. Varying intervention types thus softened the pace and intensity of changes made in the first year, restored a sense of stability and control, and improved the organization's social time and employees' inner time.

Besides attending to multiple conceptions of time, since different intervention ideal types embody divergent assumptions, goals, and values (e.g., maximizing economic shareholder value versus developing organizational capability), change agents should be mindful that applica-

tion of multiple intervention types to a single group of employees could confuse them. It is generally difficult for change agents to apply coercion (commanding) and build warm trusting relationships (socializing) with the same people at the same time. Any early receptivity to change could be followed by cynicism and resistance. Temporally capable change agents, however, can juxtapose multiple intervention types through such means as sequencing, timing, pacing, and combining.

Sequencing, Timing, Pacing, and Combining Multiple Intervention Ideal Types

The path of change is often indeterminate, precarious, and reversible (Pettigrew et al., 1992). Temporally capable change agents should be alert to shifting conditions both inside and outside the firm, vary their actions if need be, and zigzag their way to the final destination. The outcome of change depends on a host of factors (cf. Rajagopalan & Spreitzer, 1997) that must be considered in selecting interventions, and an exhaustive discussion is beyond the scope of this paper (cf. Greenwood & Hinings, 1996; Ledford et al., 1989). I focus on how temporally capable change agents can juxtapose multiple intervention types. This juxtaposition can be construed as a continuum between two extremes: pure sequencing—enacting one intervention type at a time—and pure combining—enacting all four types simultaneously—on a specific change target group. Between these extremes, change agents can combine two or three intervention types and apply various combinations in sequence. For each combination, one intervention type could be emphasized with organization resources and efforts in relation to other types, which could be applied in a more subdued way.

Sequencing refers to the order in which events unfold, with an assumption that a certain order is important to the integrity of a phenomenon (Werner, Haggard, Altman, & Oxley, 1988). Effective sequencing relies, in part, on appropriate *timing* of every intervention in a given sequence of interventions. Timing refers to the moment an event happens or is planned to happen in a sequence of related events. Good timing captures windows of opportunity in which an intervention could benefit from better receptivity to change and more bountiful resources. Through

timing, agents can also plan their actions so that the pressure to do multiple things at the same time is lifted. Redistributing events allows agents to balance the organization's change load and sustain its capacity to change.

In turn, appropriate timing of interventions depends, in part, on the *pacing* of intervention types. As shown in Table 2, diverse types display their typical pacing characteristics (e.g., rapid for commanding, gradual for socializing). Appropriate timing of multiple intervention types with different pacing characteristics is important, because it helps to create a more tolerable and effective change rhythm. Rhythm refers to a pattern of variability in the intensity and frequency of organizational activities, typically characterized by periods of accelerated activity and slowed activity. The rhythm of change provides a dynamic equilibrium that permits an organization to vary its activities over time while not changing too much or too fast (Sastry, 1997). Excessive speed in changing lowers the organization's competence and leads to its collapse. Therefore, Sastry (1997) recommends a long enough settling-down period after dramatic, fast changes to rebuild the organization's capacity to change. In fast-changing environments, organizations should discipline themselves to change according to their own internal temporal structures and capabilities and should respond less immediately to the external environment.

Each organization has to find its own dynamic internal change rhythm that permits it to alternate between rapid and moderately paced changes without losing synchronization and control, and change agents with temporal capability seem better able to do this. Hence, timing an intervention type with its typical pacing in a sequence of multiple types is critical to its effectiveness. Below, I illustrate some of the conditions under which starting large-scale change with an emphasis on a particular intervention type in a sequence of interventions is likely to be effective.

Starting with commanding. The turnaround of British Airways (BA) between 1981 and 1988 illustrates sequencing based on judicious timing and pacing of intervention types (Barsoux & Manzoni, 1997a). Initially, commanding with rapid pacing was dominant, with workforce downsizing and sale of assets. The timing seemed appropriate because of widespread rec-

ognition of poor performance, which increased receptivity to radical change. Downsizing was done with benevolence, through voluntary separation and generous compensation. Two years later, teaching was launched through training programs that taught managers to treat employees well before attending to customers. The timing for sequencing teaching (with gradual pacing) after commanding seemed appropriate, because CEO Marshall sensed that the rapid pace of commanding changes was eliciting growing resentment among employees, and a slower pacing type to create a more tolerable change rhythm would be appropriate.

Four years later, in 1985, socializing (with gradual pacing) was launched to complement teaching. Employees with proven interpersonal skills were appointed to develop a "family" climate for customer-facing employees, since people who were well taken care of by their managers and who enjoyed close group bonds were found to excel in customer service and task problem solving. Six years later, in 1987, engineering work processes (with moderately fast pacing) was dominant. BA heavily invested in information technology to build a new reservation system to optimize revenue yields and increased the number of customer contacts during flights to increase customer satisfaction. The timing for sequencing with engineering again seemed appropriate, for it would not make much sense to increase the volume of passengers to be served by resentful and ill-trained service reps. In eight years BA was transformed from an unprofitable company with a dismal reputation for customer service into a profitable, world's-best-service airline.

As discussed in Appendix A, however, the same change sequence in the same organization, done with bad timing later in its history, was not successful. The inappropriate timing of intervention approaches led to a long and ineffective change process that was due to rushed actions and resistance from employees. In contrast, agents who apply intervention approaches with a long-term time perspective, through patient socializing and teaching, can realize turnaround in a surprisingly short time, as illustrated by CEO Blanc of Air France, who achieved a turnaround of employees' support for painful radical change in about one year (Barsoux & Manzoni, 1997b).

These cases suggest that the commanding intervention, with its power-coercive approach, is likely to be easily executed when change agents wield enough concentrated power to impose changes on the recipients (Biggart, 1977). This is likely to occur in organizations that traditionally accept hierarchical authority and have visible slack that can be trimmed rapidly: large overhead costs, a low-productivity workforce, or multiple unprofitable product lines mixed with better performing businesses (Pettigrew, 1985). However, research on procedural justice and downsizing, typically executed with authoritarian commanding, suggests other refinements to timing quick and abrupt implementation. Recipients are more likely to accept negative outcomes and even cooperate with change agents if the agents take *more time up front* to engage them, provide full information, and explain the clear business logic of their actions (Brockner et al., 1994). As suggested in the Air France case, the window of opportunity for a commanding emphasis was prepared through some modest teaching and socializing, done over a relatively short one-year period to increase employees' receptivity to radical change. CEO Blanc chose the timing of his proposal for painful cost-cutting measures through a company-wide referendum and bypassed militant unions only when he felt he understood the needs and feelings of employees through extensive surveys and face-to-face dialogue.

Beyond procedural justice, recipients are more likely to tolerate imposed negative outcomes (e.g., layoffs) if these are attenuated with benevolent treatment of both victims and survivors—for example, generous retirement compensation and outplacement services for victims, as well as new job opportunities and improvement in work life for survivors to show that they remain valued employees. Recipients' negative experience of commanding is less acute if this intervention predominates in a relatively short period and is followed by other types, such as engineering of work processes or socializing to rebuild new social-work relations, that aim at meaningful improvement in organizational capabilities (Whetten & Cameron, 1994).

Sequencing and timing multiple intervention types with distinct pacing characteristics suggest effective temporal capability and are summarized in the following proposition. Following Albert's (1995) timing model, the purpose of

change here is assumed to be both improved economic performance and development of organizational capabilities. Change agents are assumed to hold a long-term perspective and multiple conceptions of time.

Proposition 5: Starting large-scale change with commanding is likely to be effective in organizations that traditionally accept hierarchical authority, when the company has slack, and when change agents' power is concentrated. Commanding is likely to result in little resistance if it is done with benevolence, has a clear business logic that is acceptable to employees, and is done in a short time. Commanding has to be followed with other intervention approaches to repair the social fabric of the organization and improve work processes.

Starting with intervention types other than commanding. Starting radical change with a commanding emphasis is not always the most effective approach to achieving economic results rapidly, however, even when power is concentrated at the top and managers are subject to extreme time and performance improvement pressures. Some organizations may have very little slack left, and the options of commanding downsizing or divestment of assets to improve profits quickly are no longer available. Other intervention types have to be used to build new organizational capabilities to generate profits. For instance, in 1994 Continental Airlines was devoid of slack as it was on its way to bankruptcy for the third time (Brenneman, 1998). Fifteen years of cost cutting had put Continental in a vicious cycle of continuing losses. Customer service was so poor that the more profitable business customers shunned the airline. Continental emphasized engineering work processes to provide the services that business customers wanted and would pay extra for: safe airplanes, on-time flights and reliable baggage handling, and good food. All the employees were empowered to improve these work elements, aided by a new incentive system and executives who actively listened to and engaged employees to rebuild pride in their own airline (modest teaching and socializing).

Under more modest performance improvement pressures, to reduce the risk of alienating

employees and incurring covert resistance to change (Noer, 1993), change agents wielding concentrated formal power but facing initially low receptivity to radical change could gradually increase employees' receptivity and build their change capabilities and self-confidence by avoiding abrupt commanding. Agents could initiate change with other approaches, such as large-scale teaching mixed with some modest socializing and engineering. CEO Nasser applied these gradual pacing interventions at Ford (cf. Wetlaufer, 1999).

Similarly, starting radical change with a commanding emphasis may not be well received in organizations with dispersed power structures, such as universities or hospitals. Gradual pacing interventions may be more effective. Commanding changes in formal structures are likely to be better accepted by employees if they are preceded by improvement in social-work relations (socializing), work processes (engineering), and recognition of changes in underlying beliefs (teaching). To illustrate, planned cultural change in a hospital was framed as change in the way people related to each other (Bate et al., 2000). New social foundations were incrementally established through temporary social-work systems, such as teams that allowed people to network and experiment with new social-work relations and power rearrangements (socializing). The energy of change was maintained through small-win work projects that projected a sense of progress (engineering). Changes were collectively negotiated and arbitrated by a panel of elected employees. These organic changes were then hardwired through enactment of formal structures and policies (symbolic commanding). Finally, new beliefs and norms were institutionalized through retrospection: actors were encouraged to reexamine their initial beliefs and reflect backward to achieve a deeper appreciation of the underlying beliefs and values driving change and to learn from them (ex post teaching).

Finally, starting radical change with commanding may not be effective when organizations are in slow decline because of lack of innovative products. Creativity among knowledge workers can seldom be decreed and should be elicited through voluntary cooperation (Kim & Mauborgne, 1998). Intervention types such as socializing and teaching aimed at fostering intense cooperation and learning among

different thought worlds (Dougherty, 1992) and stimulating employees' self-confidence are likely to be more effective in fostering innovation (Senge, 1990). To illustrate, in 1982 CEO Murai started Japanese beverage producer Asahi's turnaround by restoring confidence among demoralized employees, empowering lower levels to make decisions and propose new ideas, and facilitating communication between functional silos (socializing with modest teaching). The close interaction led production and sales groups to create a new product, Super Dry Beer, that allowed Asahi to regain dominance of the market through a subsequent forceful and directive commanding approach led by CEO Higuchi in 1989 (Salter, Kokuryo, & Asaba, 1989). The previous discussions can be summarized as follows.

Proposition 6: In organizations with little slack, low receptivity to radical change, dispersed power structures, or low innovation, starting large-scale change with socializing, engineering, or teaching and ending with commanding is likely to constitute a more effective change sequence than starting with commanding.

Combining. Because pure sequencing of one intervention type at a time is likely to lengthen the duration of large-scale change, agents could, instead, combine multiple types simultaneously and with relatively equal emphasis on all four types. Appendix B illustrates how combining helped the turnaround of the U.K. firm Asda (Beer & Weber, 1997). Two change leaders with different change skills effectively complemented each other and applied seemingly divergent approaches.

Although combining seems preferable to pure sequencing in that it promises to shorten the duration of change, it also demands exceptionally high change skills. The higher the diversity of intervention types combined, the higher the required coordination and collective change skills. Combining types that share the same purpose, such as developing organization capabilities (teaching and socializing), is likely to require less communication and execution skill (e.g., fair process and benevolence) than mixing types with different purposes (e.g., commanding and socializing). To mitigate the risks of confusion and cynicism among employees, leaders

should communicate clearly that they will apply seemingly contradictory types and explain to recipients the appropriateness of each approach and its timing thereof for a particular business problem. These activities impose an additional time burden on the agents.

To avoid the overload and underperformance that are due to individuals' lack of time and change skills, agents may consider splitting change responsibilities among people with complementary skills. Further, to effectively enact intervention types with seemingly divergent assumptions and values, agents have to be aware of and comfortable with paradoxes in thought and action, able to explain these seeming contradictions to recipients, and coordinate well among themselves (Lewis, 2000). Agents have to use fair process to demonstrate to targets that multiple seemingly contradictory intervention types are, in fact, not so and are all appropriate. Engaging people in debates, explaining the logic of change actions, and setting clear expectations at the outset of interactions help recipients to tolerate negative outcomes resulting from seemingly opposite interventions without feeling confused or cynical (cf. Kim & Mauborgne, 1998). To maintain credibility in actions, leaders also have to demonstrate that they can execute different interventions, are aware of and respect each other's strengths and limitations, and coordinate with and complement each other's skills (Denison et al., 1995). These considerations enhance the effectiveness of temporal-capability-based interventions.

Proposition 7: Combining seemingly opposite intervention approaches is likely to be accepted by recipients when change leaders apply a fair process and justify to recipients that these approaches are appropriate, and when leaders can complement and coordinate well with one another.

Ideal types also allow one to examine reality, to use theory to speculate about potentially better practice, and to formulate falsifiable predictions. Appendix C provides an illustration of this with an analysis of Jack Welch's transformation of GE over two decades. In light of temporal capability concepts, Welch's conduct of this change may not have been as successful as has been claimed in the popular press. Welch's ordering of intervention types seemed appropri-

ate, but the timing and combining of these types now seem suboptimal, resulting in a change process that may have been unnecessarily long and inefficient.

CONCLUSION AND FUTURE RESEARCH

Complex large-scale change can be analyzed as a juxtaposition of and interaction among distinct intervention ideal types. Each ideal type represents a set of congruent assumptions and a distinct cluster of change practices, and each seems important in the realization of large-scale change. Distinguishing among them allows researchers and practitioners to focus on different sets of issues and to recognize the interactions among them more comprehensively. The various sequences and combinations of interventions, all effective in their own contexts, seem to indicate that there are multiple ways to achieve effective change, and one-best-way models of sequencing change actions could be improved by a fuller specification of contingency conditions (e.g., Kotter, 1995).

Ambidextrous organizations can manage both evolutionary and revolutionary change because they have structures and cultures that continuously balance the tensions between opposites (Tushman & O'Reilly, 1996). Temporal capability adds to this line of theorizing by identifying some of the time dimensions involved in enacting the seemingly paradoxical intervention ideal types that enable both evolutionary and revolutionary change. The mindful sequencing, timing, pacing, and combining of change interventions suggests an ongoing process of balancing the ebb and flow of tensions that, if left unmanaged or misunderstood, risk swinging the organization to the undesirable extremes of inertia or chaos.

Conceptual frameworks like the one in this article make visible implicit assumptions underpinning organizational actions so that they can be validated and refined. Sequencing, timing, pacing, and combining of intervention types that shape temporal capability have been largely implicit in change practice and have been considered more of an art than a science. Timing actions is difficult because it often requires change agents to deal with paradoxes that arouse discomfort, such as long-term purpose versus pragmatic opportunism, action before thought, or the opposite (cf. Albert, 1995).

Hence, enacting intervention types with seemingly contradictory assumptions could exacerbate this discomfort and impair agents' communication and execution abilities, especially when these unarticulated and unresolved paradoxes cause them cognitive and emotional dissonance (Argyris, 1993). But change agents may be able to improve their temporal capability by broadening and deepening their understanding of distinct intervention types, conceptions of time, and the organization's rhythm under stability and change; mindfully incorporating this plurality into their change practice and action research; and developing self-confidence in living and acting in a world of paradoxes. Indeed, organizing and changing inherently require the juxtaposition of contradictions (Lewis, 2000).

Change practice enacting temporal capability could benefit from further research in several ways. First, one could start to explore the effectiveness of each of the four intervention ideal types, as well as sequencing, timing, pacing, and combining them, as stated in the propositions. Situational and dispositional characteristics that give rise to change agents' understanding and assumptions about time should be examined. The limited body of empirical research that currently exists does not yet allow systematic testing and confident generalization. Moreover, it is difficult to determine if or why a particular intervention type is effective, since there is little consistency in the specification of contingency factors, time-based data, and outcomes (Pettigrew, 1998; Rajagopalan & Spreitzer, 1997).

More longitudinal research that systematically explores agents' actions and targets' responses over long periods can help reveal relevant contingency variables and the effectiveness of various intervention ideal types, as well as ways of sequencing, timing, pacing, and combining them (Meyer, Goes, & Brooks, 1993). I have suggested some of the contingency factors that could influence the effectiveness of temporal-capability-based interventions: change agents' purpose, values, and skills; time and performance pressures; the power structure of the organization; the availability of slack; broader social and economic conditions that shape employees' receptivity to major change; and their past experience with change, change fatigue, or cynicism that shapes their current level of receptivity to change, which is, in part,

influenced by the timing and pacing of distinct intervention types. These contingency factors determine the appropriateness of sequencing or combining multiple types at any point in the change process. As hinted at in the examples, appropriate sequencing and combining of intervention types could help shorten the duration of large-scale change and reduce needless pain and costs.

Focusing on the sequencing, timing, pacing, and combining of intervention ideal types and the path dependence this creates requires researchers to study both quantitative time and qualitative time. The social-temporal context of the organization at any moment in a change episode reflects the interaction among clock time, inner time, and social time of the people involved. Raising the importance of temporal constructs may pose new challenges to change researchers, whose tasks are already complex. The difficulty associated with including time in change research, however, may well be offset by the gains in stimulating new theorizing and empirical evidence that will advance both the theories and practice of planned change.

APPENDIX A BAD TIMING IN CHANGE SEQUENCING

Ironically, bad timing in the same sequence of change interventions explains, in part, the decline of then successful BA between 1996 and 2000. Newly appointed CEO Ayling announced major cost cutting and staff reduction in anticipation of declining profits due to stronger competition on the same day that BA's record profits were announced (poor timing). Ayling used commanding when receptivity to radical change was very low. The normally nonmilitant female cabin crew went on strike. BA declared the strike illegal and used intimidation tactics with employees (no benevolence). Other change programs (teaching and socializing) launched in subsequent years to boost sagging morale and declining customer service were largely treated with cynicism by employees who mistrusted Ayling, a CEO who seemed to put profit before people. Thus, poor timing in the choice of interventions and lack of benevolence in commanding actions seem to have undermined trust in the CEO and the likelihood of success of subsequent change approaches. Ayling had to resign.

This suggests that when the company still had adequate slack, more engaging and patient approaches (gradual pacing) might have attenuated employees' incomprehension and increased their receptivity to change.

This is what Christian Blanc did when he was appointed CEO of moribund Air France in 1993 (Barsoux & Manzoni, 1997b). The commanding approach (with abrupt and rapid pacing) applied by his predecessor, Attali, led to widespread employee protest and Attali's resignation. Blanc patiently attenuated employees' lingering cynicism and mistrust of top management by conducting large-scale and open-ended interviews to understand their feelings of loss, alienation, and hopelessness, which had led to desperate actions. Blanc and the top team actively engaged employees and continuously demonstrated through their actions that the employees' feedback was listened to, and they refrained from discussing productivity at the start (socializing with gradual pacing). To increase receptivity to radical change, Blanc also released reports prepared by employees that showed customer dissatisfaction and the airline's financial losses as it faced a deregulated and globally competitive airline industry (some teaching with gradual pacing). A year later, Blanc proposed cost-cutting measures that were even more drastic than those previously proposed by Attali; they were rejected by the unions. Blanc then appealed directly to all employees through a referendum, and 81 percent supported the restructuring plan. Thus, by attending to interpersonal relations through intensive listening and explanation and by acknowledging individual employees' emotions during radical change (socializing followed by some teaching), Blanc was able to convince the majority of employees to support his commanding implementation of painful cost-cutting measures.

APPENDIX B COMBINING SEEMINGLY DIVERGENT TYPES BY MULTIPLE CHANGE LEADERS

The turnaround of Asda, a near-bankrupt U.K. grocery chain, exemplifies how combining works (Beer & Weber, 1997). In 1992 Asda's newly appointed CEO, Archie Norman, applied a commanding approach to quickly eliminate unfit incumbent managers, refresh the management

team, downsize the staff group, and secure needed cash. At the same time, Norman visited the retail stores and socialized with line managers, who hitherto had been frustrated by an unresponsive and autocratic head office. This firsthand information allowed the top team to develop a three-year recovery plan that showed the sequence of change activities and provided a clear signal to external investors that Asda had a long-term strategy and that they should not expect short-term financial results. This time horizon was necessary to develop a new culture that would stimulate bottom-up changes initiated by local stores. The plan also showed that the top team listened to the customer-facing employees. The commanding approach embraced both economic and organization development values and goals and, thus, was acceptable to both investors and employees.

While Norman applied a relatively stern commanding approach mixed with teaching (encouraging people to challenge and examine alternatives while making clear that he would make the final decision), his assistant, Allen Leighton, emphasized an engineering approach (changing work processes in stores) mixed with socializing. Leighton was warmer and more people oriented than Norman, and he organized activities to encourage open and direct communications and more informal social relations. Both leaders embraced the paradox of top-down direction and upward influence, conveying authority without appearing autocratic. The two displayed different styles yet complemented each other in the change leadership role, because each recognized his own limitations and valued the other's contributions. Employees welcomed the diversity of change approaches and the synergy between the two leaders.

The commanding approach was relaxed as Asda moved out of financial crisis a year later (appropriate timing). Remaining in focus was engineering—that is, redesigning work processes in stores to make them attractive places to shop—and this was supported by socializing principles: wide participation from employees, cross-functional teams, flat structures, bottom-up individual initiative, and experimentation. A coordinated top-down engineering approach emphasized both economic and people-performance measures that determined whether a store should be awarded investment capital. A central group also ensured that any

store's best practice was transferred to other sites. Managers who could not adapt to the new ways of working were let go in a fair and humane way, and newcomers were brought in to maintain the rapid pace of change (commanding). This artful combination of soft and hard intervention approaches allowed Asda to achieve profitable growth in less than five years.

APPENDIX C APPLYING IDEAL TYPES AND THE TEMPORAL CAPABILITY CONCEPT TO THE TRANSFORMATION OF GE UNDER JACK WELCH

Jack Welch's transformation of GE is probably one of the most widely known change "success" stories, but the same results might have been achieved in less time and with less human and financial cost to GE. The restructuring of GE by "Neutron Jack" took about eight years (1981–1988) and left GE's remaining employees reeling from culture shock and its managers exhausted (Bartlett & Wozny, 1999). These are predictable consequences with a commanding approach applied for that long (suboptimal timing in introducing other intervention types with more gradual pacing). Sequencing and combining various types might have shortened this traumatic period, as shown in the turnaround of Asda. The large size of GE (400,000 employees) accounted, in part, for the length of this change, but perhaps various intervention types could have been applied differently, with better sequencing and combining.

Welch recognized later that ignoring the employees' emotions had cost him dearly in terms of the length of time it took to change the organization, and he sought ways to rebuild emotional commitment (Tichy & Sherman, 1994). He concluded that a company could temporarily boost productivity by restructuring and downsizing but that it could not sustain high productivity without cultural change. So Welch launched "work-outs" both to show low-level employees that they could suggest and obtain minor changes quickly and to put pressure on their direct supervisors—the middle managers. By doing so Welch alienated many middle managers and pushed them to wage covert guerrilla warfare against him, the immeasurable costs of which he belatedly recognized (Tichy & Sher-

man, 1994). The timing of this type of approach seemed suboptimal, since many middle managers could have been co-opted to spread change. Combining the hard approach with softer socializing, as illustrated in the turnaround of Asda, might have been more effective in securing the minds and hearts of GE's middle managers (cf. Huy, 2001).

Welch also used the GE management training center to develop leadership skills among middle managers and to instill new values in them, for he was concerned about managers who were apparently unable to embrace the open, participative values that he was espousing (teaching). But were these managers really convinced that Welch's role modeled the values that he was espousing? The teaching ideal type holds that teachers believe they have a truth to impart to recipients, without necessarily believing that they have to change themselves. To what extent did Welch change his own behaviors, and to what extent were Welch's behavioral changes recognized by middle managers? Could there have been lingering covert fear and resentment of Neutron Jack that reduced these managers' ability to learn in the open and trustful climate required for effective teaching? Welch's sense of timing and ability to combine multiple types seemed weak when he introduced a performance program to eliminate managers who displayed undesirable values (commanding with little socializing).

In the 1990s Welch himself spearheaded other change initiatives, such as Boundarylessness, Sig Sigma, which emphasized teaching and engineering approaches. The CEO seemed to tolerate no suggestion contrary to his new initiatives (commanding). Thus, it seems that the socializing approach was rarely dominant in GE. Did two decades of mainly CEO-initiated changes result in an organization that became increasingly reliant on a strong, charismatic leader? Despite significant efforts to develop leaders and successors in the past decade, there is concern today that no one could fill Welch's shoes (Bartlett & Wozny, 1999). Lack of socializing approaches may not have helped GE employees to build, share, and identify with GE's corporate values, as opposed to being loyal to their respective divisions. In the absence of a strong, valued, and widely shared GE corporate identity among employees, one can speculate that the presence of a number of strong division

leaders without another strong and charismatic CEO might eventually lead to the balkanization of GE as a corporation.

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