14

Organizational Culture and Climate in Transformations for Quality and Innovation

—— *John L. Michela and W. Warner Burke*

Twenty years ago, few managers outside of Japan knew very much about how to produce goods and services at the levels of quality that customers demand today, and some managers seemed not to care. Ten years ago, nearly everyone sought quality in some way, but the specific practices of quality (such as statistical process control [SPC] and broadcasting the voice of the customer [VOC] throughout the organization) were not sufficiently pervasive. Today these practices are fairly well understood and fairly widely implemented in their settings of greatest applicability (e.g., SPC in manufacturing). There is even talk that total quality management (TQM) is becoming absorbed into mainstream management practice and is, in this sense, fading in prominence (Schroeder, 1998). The future is said to belong to companies that satisfy customers not only through

traditional quality but also through innovation, which promises products having new or enhanced value to customers (e.g., Woodruff, 1997).

However, as managers and scholars know well, understanding and even implementing worthwhile practices do not necessarily result in their intended benefits. Newspapers and other mass-media outlets have described various large-scale studies of TQM practice, usually with the conclusion that X (huge) percentage of firms have implemented at least some TQM practices, and Y (tiny) percentage of firms have expressed satisfaction with the results of these efforts. An explanation given frequently in the TQM literature for this state of affairs draws on the construct of organizational culture. Woods (1997) puts it succinctly: "Increasingly, organizations are discovering that quality management is more

about cultural change than it is about any specific practices" (p. 49).

Indeed, awareness of organizational culture's importance, as reflected in the TQM literature, is impressive. For example, in a discussion of continuous improvement (or CI, which is one of the aspects of TQM most connected with organizational culture and climate), Jha, Michela, and Noori (1996) include organizational culture management in a short list of success factors for CI—a list that also includes leadership, planning, and training. This emphasis on culture has been supported by a tabulation of key words used in a commercial database of reference citations to articles on CI detailed by Michela, Jha, Noori, Weitzman, and Eickmeier (1997). In this tabulation, *corporate culture* (the specific term used in this database) was found to be more prevalent in articles on CI than key words such as *leadership, training, customer satisfaction,* and *organizational change*. The concept of organizational culture shows similar prominence in the expanding literature on innovation. For example, 25% of the pages in a recent book on innovation by Tushman and O'Reilly (1997) fall within chapters concerning culture and culture management.

Nevertheless, it is one thing to say that organizational culture is often invoked as an explanation for success and failures in quality or innovation, and it is something else to say that this explanation is sound. Our reservations about this explanation, at least as typically presented, are one impetus to our writing this chapter. Explanations that invoke a related concept, organizational climate, also have their shortcomings, as we will describe.

Despite these shortcomings, the concepts of organizational culture and climate have a great deal to offer to leaders and researchers. Leaders who understand the nature and management of culture and climate are well positioned to accomplish the major organizational changes often required for quality and innovation, because the culture and climate literatures point to many levers for change.

Researchers aware of the links of culture and climate to quality are, we believe, more likely to look in productive directions for explanations of quality or innovation program successes and failures.

In this chapter we will examine various connections between quality and innovation on the one hand and culture and climate on the other. In the most basic terms, the essence of this connection is that appropriate culture and climate promote successful organizational change for quality, and inappropriate culture and climate stifle it. Consequently, we will also give some attention to organizational change models and methods as they relate to concepts and models of culture, climate, quality, and innovation.

HOW DOES A QUALITY ORIENTATION AFFECT EMPLOYEES' WORK?

One starting point for analyzing culture and quality is to look at the work that people do under traditional versus quality-oriented management. Traditionally, an employee has a job description that specifies tasks. When these tasks are accomplished along with those of employees with different job descriptions, the work of the organization gets done. For example, a purchasing clerk makes purchases and a receiving clerk makes records of raw materials received for use in manufacturing operations.

A quality orientation starts with analysis of the larger processes within which work activities of this kind are embedded. Is there a better way to organize jobs and departments so that the underlying process (obtaining raw materials) may be accomplished more efficiently and reliably? *Efficiency* is important for keeping final cost to the customer to a minimum. Minimizing this cost is important because the ultimate aim of quality management is to maximize *value* provided to customers, and value, in turn, can be understood as a ratio of benefit to cost. *Reliability* is im-

portant partly because it bears on cost, but also because it bears on the value ratio's numerator—benefit to customers. For example, it may be important to a customer to receive manufactured goods on a specific delivery date. An unreliable process for obtaining raw materials thus will reduce the manufacturer's capacity to perform in the manner desired by the customer.

The concept of reliability in quality is perhaps more familiar in terms of the characteristics of objects made from raw materials (e.g., Is every piston of the same length, diameter, and weight?) and of the raw material itself (Is the metal flawed in some way?). The reason your North American car is in the shop more often than your neighbor's Toyota is that Toyota has mastered the areas of quality management practice that correspond to the two aspects of this example—respectively, statistical process control and supplier management.

This chapter is not the place to delve into details of these or other topics in the field of quality management, such as analyses of the dimensions of value (durability, delivery time, and so on) as perceived by customers (e.g., Garvin, 1988). Instead, the point of the preceding is to begin to suggest the many changes to traditional work organization that a quality orientation requires, so that we can go on to consider effects of culture and climate on these changes.

When process improvement becomes everyone's job on a continuing basis, employees' scope of work is enlarged to include analyzing processes (e.g., flowcharting), measuring the performance of processes (e.g., percentage of pistons manufactured outside of tolerances), and using teamwork skills (e.g., coordinating team members' efforts, resolving conflicts). In effect, everyone has a role in process innovation. *Teamwork* actually has several meanings for quality. One meaning involves use of temporary teams for process analysis and improvement in settings such as manufacturing. Another meaning involves fostering cooperation of various departments or divisions when they

all make contributions to an overarching process such as "order fulfillment." Still another involves ongoing production teams whose members may be multiskilled and whose work may involve a larger portion of total production as had been the case traditionally. Yet another involves groupings of service providers into units that may be encouraged to know their customers and be empowered to serve them well, in settings such as financial services, computer software, and telecommunications.

Of course, it makes no sense for frontline employees to do process analysis unless real process changes may result, or to reorganize workers into production or service teams unless real increases in responsibility and authority coincide. Thus these changes in work activities and team organization imply potentially sweeping changes in roles of managers, technical experts such as manufacturing or information systems engineers, and nonmanagement workers (Olian & Rynes, 1991). It is this depth and breadth of change that leads to the view of change for quality as culture change.

WHAT IS A CULTURE FO QUALITY AND INNOVATION?

Values

Viewed through the lens of an organizational culture perspective, the concept of values takes on a strikingly prominent place in discussions of quality management. For example, a keynote speaker at a recent conference on quality began her remarks by listing the values that characterize quality-oriented firms (Flynn, 1998). Very similar lists, such as that in Table 14.1, are used frequently in management training and consulting on quality (e.g., Beecroft, 1995). In a recent review of 21 published works on quality management that mention culture explicitly, De Lima (1999) presents a comparable list of cultural values held to be important for qual-

TABLE 14.1 Values of Total Quality Management-Oriented Organizations

---

Customer-Driven Quality
Continuous Improvement
Fulfilling Work and Respect for Employees
Communication, Cooperation, and Teamwork
Management by Fact
Prevention of Quality Problems
Long-Range Strategic Focus
Public Responsibility

ity. As a final example, Camisón (1998) describes values as providing "the base of" TQM (p. 488).

Values, of course, are central to many definitions of organizational culture (e.g., Cameron & Quinn, 1999; Schein, 1985). Values are understood to influence a wide variety of specific behaviors, so if employees have the right values for quality, the behaviors should follow. One frequently used example is that of the Nordstrom department store employee whose value on satisfying the customer motivates a long drive to deliver goods needed right away by a customer. To the extent that this high level of service to the customer is consistent with company strategy, the value has promoted the behavior needed from the employee.

When writers describe culture as critical to success in achieving quality, they evidently have in mind this kind of motivational force. Assuming behavioral congruity with strategy, it is clearly a good thing if a retailer's employees are motivated to satisfy customers, which is to say, if they value customer satisfaction. Similarly, following Table 14.1, generally a manufacturer's employees should be motivated to improve production processes on a continuing basis (otherwise, competitors will get ahead through their process improvements).

An emphasis on values for managing employee behavior for quality has a special unity or coherence. This coherence follows from the premise that superior individual

performance and organizational performance are possible only when the whole employee is engaged at work. The contrast again is with traditional management, which, in the extreme case of Taylorism, literally held that the employee could leave his or her "brains at home" because tasks and incentive structures had been, in theory, specified so precisely and optimally. Under values-based management, employees are given direction not in literal terms but in terms of objectives, goals, or desired end states. Employees then apply discretion in seeking these ends. That Nordstrom employee turns out to be a pretty good example of this notion. Presumably, no one said, "Drive a long way to deliver goods to customers"; instead, it was, "Do what is necessary to satisfy the customer" (see Tushman & O'Reilly, 1997).

Values-based management makes sense when Tayloristic task specification is either impossible or incongruent with the rest of the context, and this is certainly the case for organizations seeking the highest quality in goods or services. In the case of manufacturing, part of the task of frontline employees is to generate improvements in production processes on a continuous basis. This is an inherently creative and collaborative process. It cannot be fully specified, and if it could, the mind-numbing nature of highly specified work would drive out the creativity. Management by values applies at least as well to management-level employees as to those not on that level. For example, strong values on fulfilling work and respect for employees have many implications for how managers should treat subordinates and peers. In fact, all of the values listed in Table 14.1 can be imagined to inform managers' decisions and actions. Attempts to influence these actions instead by more specific directives would be impractical (e.g., overwhelming in number) and motivationally incongruent (e.g., demeaning by minimizing managerial discretion).

Management by values also can have payoffs with other professionals, such as software developers. For example, in a study of

approximately 100 developers organized into 12 interdependent groups, values that had been instilled for satisfying customers, taking responsibility for self-management, and getting the job done ("can-do attitude") appeared to provide the opportunity and drive to overcome structural roadblocks to success in serving clients (Webster et al., 1998).

A "values" emphasis on culture has this immediate implication: For successful organizational transformation to quality, employees must acquire and follow values like those listed in Table 14.1. This requirement may lie behind the widespread belief that leaders must communicate, reward adherence to, and, perhaps, exemplify these values for quality (Daft, 1992; Waldman et al., 1998). Trice and Beyer (1993, p. 412) give the example of a new leader of a manufacturing plant who announced his (values-based) managerial philosophy and then "roamed" the organization like an evangelist converting people. To the extent that values are tied to identity (corporate or individual), pertinent actions for culture management also include management of artifacts that signal who we are (e.g., architecture and other aspects of style in the organization that say we are traditional, nontraditional, dynamic, warm, and so on) and repetition of stories that bear on values such as equality (as in the story of the IBM CEO who, like any other employee, was turned away at a security post when he lacked a required badge).

Norms

The simplest definition of organizational culture—"the way we do things around here"—connects most closely with the concept of norms within the definition of organizational culture. In common and formal use of the term, *norm* has two aspects: what people typically do and shared understandings about what people are supposed to do. People tend to think that typical behavior is the right thing to do (a conversion from "is" to "ought") because that has been their experience in many domains of life (D'Andrade, 1984; see also various sources in Shweder & LeVine, 1984). A good example from the domain of culture-based diets is the norm to avoid eating the shells of nuts. Most of us in Western societies probably think that is the right thing to do. But why? Are the shells poisonous? Indigestible? Unpalatable? Many of us may not know. The norm can be so strong that we never ask, and it may not even occur to us to try eating nutshells. Further, we may assume that we ought not eat nutshells. The same can occur with normative behaviors in organizations. In other instances, norms exert their effects through individuals' expectations that others will apply sanctions for violations of norms. By the fact that a behavior is normative, one can expect that others will also perceive it as normative and right, and insist upon it.

Like other concepts and corresponding processes of culture, norms and values are intertwined. Norms often imply identifiable values (e.g., cooperation as a value behind information sharing), so either or both may explain corresponding behavior. Nevertheless, these two concepts may imply somewhat different sequences of transformations for quality. With values, the desired behavior is expected to follow if the predisposing values are instilled. With norms, getting the desired behaviors, by whatever means, creates conditions in which people infer they are the right ones or, at least, the socially approved ones (including when people are explicitly socialized to conform to the norms).

The immediate implication is that appropriate norms are required for quality. However, this raises a problem to which we alluded in the opening of this chapter, that of circular definitions of the role of a culture for quality in attaining a quality orientation such as total quality management. That is, it is obviously circular to say that if we just had the right norms we would be a TQM organization—if TQM is defined as a set of shared practices equivalent to norms ("the way we do things"). Each reader of the quality litera-

ture must judge whether circularity is pervasive and whether the construct of culture has a useful purpose (see Newman & Chaharbaghi, 1998). One reason for concern is that the meaning of *culture* is often left unspecified in writings on quality management, and it does seem quite possible that, at least in part, a definition along the lines of "the way we do things around here" is often implied. However, it seems likely as well that some writers have in mind a basis for these norms in values, and others intend to emphasize how norms instigate processes of social control, as organization members implore others to conform to norms. Still other writers avoid the logical problems here by stating explicitly that instilling particular cultural values is important in the early stages of a quality transformation (Camisón, 1998; Scholtes & Hacquebord, 1988).

A further problem concerns how to instill norms for quality—such as sharing information across departments or making a habit of asking external and internal customers (other departments) for feedback on performance. This is, in essence, a problem of changing employee behavior on a broad scale. It seems likely that *if* behavior can be changed on a broad scale, and if that behavior turns out to be experienced by employees as *beneficial* in various ways (e.g., promotes company survival in a competitive industry; provides intrinsic satisfactions relating to growth, achievement, aesthetics, and the like; is appreciated and recognized in the organization), then values will follow and it will be meaningful to speak of having a culture for quality.

Steps and Tools for Behavioral Change Toward Cultural Change

Burke (1994) describes his experience at British Airways, where a process of culture change for enhanced responsiveness to customers (including internal customers such as other departments) began by identifying behaviors that would be manifestations of the new culture. Then managers were trained through feedback and role or skill practice in these behaviors (e.g., communicating in an open manner, involving subordinates in decisions that affect them directly). Next, these behaviors were incorporated into performance appraisals. Finally, incentive pay for performing the behaviors was tied to these appraisals.

This example captures three areas of action commonly discussed in the quality management literature: training, measurement, and rewards. Training is one of the most widely cited "success factors" for quality (see, e.g., Jha et al., 1996). When quality involves new concepts, such as statistical process control, training is obviously necessary—a point to which we will return later. The main, further point from this example is that training in interpersonal behavior can also be necessary (see also Rubin & Inguagiato, 1991).

An emphasis on measurement is likewise ubiquitous in quality management (Kober & Knowles, 1996; Olian & Rynes, 1991). Measures may be taken component by component in manufacturing or transaction by transaction in service, but measures are also taken for quality performance by groups, plants, branches, and whole organizations (e.g., defect rate or dissatisfied customer rate).

There is much more controversy about the proper use of rewards to induce change in specific behaviors and, ultimately, culture for quality. Hackman and Wageman (1995) review writings of major figures, such as Deming and Juran, and arrive at a summary of advice on whether quality programs should include pay-for-performance schemes: "Do not do it." Although this view is based on a wealth of experience in trying to move organizations toward quality practices, it contradicts the notion of contingency in organizational behavior (i.e., the notion that blanket advice, pro or con, is unlikely to be useful "always and everywhere"), it is inconsistent with models of culture change that include rewards among the prominent levers
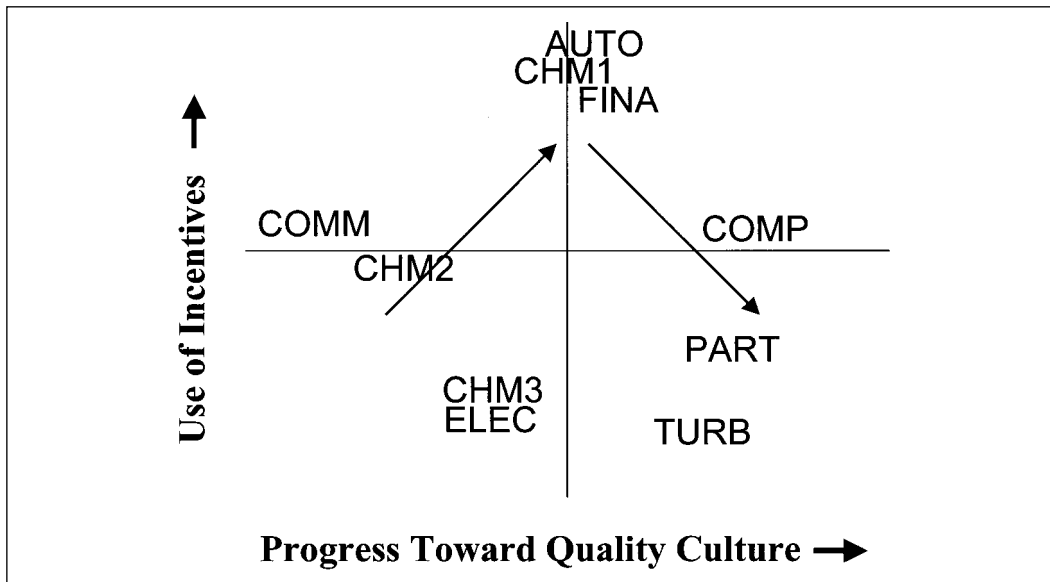
Figure 14.1. Interrelations of 10 Firms Seeking Quality, Based on Interview Data From Human Resources

for change (e.g., Kerr & Slocum, 1987; Sathe, 1985b), and it is inconsistent with research showing that it is possible to promote both intrinsic and extrinsic motivation simultaneously (see Hackman & Wageman, 1995).

Michela, Clark, Jha, and Noori (1998) studied this matter by asking managers in 10 firms to describe their approaches to quality, their organizational cultures, and any programs or systems of rewards or recognition for quality-related behaviors and outcomes. Their findings are depicted in Figure 14.1, which summarizes the interview comments quantitatively, as characterizations of each firm in terms of two dimensions: extent of progress toward a quality culture and use of tangible rewards (money, merchandise, and so on) as incentives for doing the work of quality. These dimensions were generated by a statistical procedure called multidimensional scaling. Data for this procedure concerned ratings of the 10 firms on attribute dimensions that emerged during the content coding of the interview notes.

By looking at specific comments from firms at various points along the horizontal continuum to total quality, Michela et al. inferred

that use of tangible rewards can help a firm to "get moving" toward quality if it is otherwise complacent or mired. One source of evidence consisted of comments by the manager of the firm labeled CHM1 (near the middle-top of the figure), who said, "We're about halfway along the continuum" from what her firm termed a "reward" culture to the "appreciative" culture the organization had set as its goal. This concept of the "reward" culture involved use of rewards to induce individuals and groups within functional areas to achieve high performance and make process improvements. In the "appreciative" culture, teamwork, performance, and improvement would be more intrinsically valued, and the primary reward would be recognition and appreciation by stakeholders—generally internal customers. Managers in firms at the far right of the figure described this "appreciative" kind of teamwork and recognition as characteristic of their firms. For example, the manager at a turbine manufacturer (TURB in the figure) said: "The continuous improvement culture has become ingrained in the way we do business. [We feel no] push

to go back to some sort of incentive plan. What we're trying to do is create a team environment."

These observations do not mean that Deming and others were wrong in warning against use of extrinsic incentives for quality. Research on intrinsic motivation (for a brief introduction, see Michela, 1996) is convincing on the point that people tend to attribute their behavior to extrinsic rewards when these rewards are large or otherwise salient. Having made this attribution, people are less likely to acquire values that support the behavior, as they might if the intrinsic satisfactions or other benefits of the behavior were relatively more salient. Thus it appears that extrinsic rewards should be relatively small and should be used only when necessary (perhaps in a climate of low trust between labor and management). Real intrinsic reward should be available in quality-related behavior (e.g., opportunities to make sizable contributions to organization effectiveness and other attributes listed in Burke, 1982) and emphasis should be given to the recognition aspect of any reward given (consistent with the favorable effect on intrinsic motivation tied to the "informational" function of rewards, described in Deci & Ryan's [1980] cognitive evaluation theory).

Problems involving employees' feelings of fairness are another key reason to avoid use of extrinsic rewards for inducing behavioral change for quality. In particular, any proportion of cost savings returned to the innovator may not be seen as large enough, and the singling out of an individual or a group for a sizable payment may seem unfair to others who contributed—and thus may undermine a climate for cooperation.

These problems may be less acute for occupational groups such as the managers at British Airways (see also Hackman & Wageman, 1995). Managers generally have more autonomy than frontline employees, so accountability, measurement, and reward of the kinds described in that example may be experienced as more fair and motivating. In any case, there seems to be a growing trend in labor-intensive industries (such as financial services) toward linking a portion of managerial pay to measures of behaviors thought to promote quality and service cultures. Concerns are often voiced about measurement per se, but otherwise the fairness and motivational benefits of this linkage seem to gain at least some acceptance.

Schemas

In contrast to the emphasis that the concept of "values" gives to affective aspects of culture and the concept of "norms" gives to social and behavioral aspects, the concept of "schemas" emphasizes cognitive aspects, such as beliefs about the right way to go about doing things. As a general definition, a schema is a mental framework or structure for identifying or understanding things, actors, events, and situations. The simplest schemas provide the basis for seeing objects such as tables or faces, either in everyday visual perception or in representations (e.g., abstract art). For example, a table is defined by a parallelogram with three or four lines below it. More complex schemas allow us to recognize incipient interpersonal conflict or to formulate plans for heading off conflict.

Schemas are important in motivation generally and in understanding culture specifically, partly because they "bind" elements such as values and needs to action (see Pratkanis & Greenwald, 1989). This notion is reflected in writings of cultural anthropologists who have argued that a culture's hold over behavior derives not only from values and norms but also from the convincing rationales that often accompany values and norms (Shweder & LeVine, 1984). For example, a parent may tell a 5-year-old about the germ theory of disease as a rationale for hand washing.

Kilmann (1998) points to schemas as an important construct in corporate transformation generally, and Spencer (1994) indi-

cates that an aspect of cultural transformation to quality is the acquisition of concepts that are schematic in scope. Quality-related schemas may be local or global in scope. Relatively local schemas include those that represent knowledge about specific quality practices, such as "root cause" analysis. More global schemas represent the meanings of encompassing terms such as *kaizen*. Schemas also vary in whether they are attribute oriented (e.g., one's schema for TQM might incorporate the attributes one thinks are characteristic of companies that follow this management philosophy) or event oriented (e.g., one could have a schema for the sequence of events necessary for large-scale organizational change, beginning, say, with formulating a vision).

Two devices used to discuss and analyze organizations may help to make the concept of schemas more concrete. One such device is a generic organization model, which may provide either a categorization of important variables (e.g., people, tasks, structure) or a more dynamic characterization of the organization (e.g., as an open system that relates to its environment in a manner analogous to an organism). Such a model functions schematically by helping to frame and reduce chaotic reality into more manageable and interconnected bits and pieces. Another device is a story, which may help explain the direction, meaning of, and rationale for organization change. Howard Gardner's (1995) work regarding the importance of the leader's story about a given change effort is particularly relevant here.

In the opening of this chapter we referred to reports of high failure rates in transformations for quality. Reger, Gustafson, DeMarie, and Mullane (1994) offer the bold suggestion that these failures are not to be explained by operational failures, as suggested in the reports, but by failures of management to create conditions for employees to acquire the encompassing understanding of quality and its rationale that our analysis of schemas entails. Reger et al. call this "reframing" but

cite the same theoretical sources (e.g., Fiske & Taylor, 1991) on which we have drawn in defining and distinguishing schemas. This reframing model further holds that change must be calibrated to organization members' likely acceptance of change. The zone of acceptance lies between a region where change is perceived as unnecessary and one where change is perceived as unattainable. One might address the necessity of change (emphasized also by Kotter, 1996, among others) in part by giving information about the firm's competitive position; one might address the attainability of change by showing what other organizations have done (as through employees' visits to other firms in benchmarking).

The general implication of schematic aspects of culture is that people must acquire many new concepts, which must fit together into a comprehensible whole. The existence of "quality colleges" (maintained by vendors of training for quality) attests to wide recognition of the learning requirements of quality. One can hardly "overcommunicate" about major organizational changes such as adoption of quality management practices (see Exterbille, 1996). Top managers, immediate supervisors, newsletters, and any other communication sources and media should provide rationales and concepts repeatedly.

However, training can and should be about more than skills, knowledge, and stated rationales. The training setting, away from day-to-day tasks, provides opportunities for employees to question rationales (and receive answers), check reality, express fears or frustrations, and obtain support from peers. On this matter, Bolman and Deal (1991, p. 376) comment that resistance to change can stem from fears of being unable to perform under new work arrangements. Training can address these fears directly by providing necessary skills and indirectly by providing opportunities for employees to receive peer support.

Through communications from management and among peers in a period of organi-

zational change, employees may undergo change in two of the most fundamental schemas, those concerning individual and organizational identities. Indeed, lack of change in these schemas can be a major barrier to change when employees react to proposed change with the thought: That's just not who we are. We don't "give away the store" to our customers. We do the work but we don't design it. We aren't the revolutionaries in our industry.

Reger et al. (1994) discuss several approaches to and examples of the use of identity to gain leverage for behavioral and cultural change for quality. Often the basic idea is to make an aspect of existing identity salient (such as "We have a can-do attitude") and then provide contrary data in order to motivate action to close this identity gap. Direct customer interaction and benchmarking are two sources of such data.

Evaluating the Contribution of the Concept of Culture to Quality Management

Inducing people to work in new ways for quality and innovation may involve overcoming past habits, values, beliefs, and identity. We have tried to show in the preceding discussion that concepts from the organizational culture literature provide many avenues for approaching necessary changes. Our main reservation is that this literature is quite interpretative in approach. That is, the actual evidence generally consists of writers' interpretations of what they have observed in organizations, in the absence of validated or other calibrated measures, and lacking research designs that allow strong inference. Kilmann (1998) notes this problem for a great deal of literature on organizational change; it is not unique to transformations for quality and innovation. If continued work on these topics encompasses a wide range of theoretical and disciplinary orientations (anthropology, social psychology, and so on) and design features (intensive single

case, content-analyzed multiple case), this should help to compensate for the uncertainties inherent any particular study.

WHAT IS A CLIMATE FOR QUALITY AND INNOVATION?

Distinguishing Climate From Culture

Traditionally defined, organizational climate involves people's perceptions and experiences of the workplace in terms of warmth, trust, dynamism, ambiguity, and other affect-laden dimensions (James, 1982). A parallel, one-sentence definition of culture might emphasize how cultures influence the meanings of events at work (Burke, 1994), as when a competitive threat is assessed or a new way of working is attempted. (The concept of meaning integrates values and schemas from the preceding section and the concept of norms bears on one of the most basic meanings, how one should act.) Thus, although climate and culture are related (e.g., because warmth, trust, and so forth *are* meanings), they are also distinguishable. Culture influences people's orientations to one another, to work, and to the environment. Climate unfolds as people experience warmth, ambiguity, and so forth through actions and interactions (see also Denison, 1996; Schneider, 1975; Schneider, Brief, & Guzzo, 1996).

In contrast to the scores of articles easily uncovered on the topic of culture in quality management, our search on climate and quality yielded relatively few articles. Of course, this result could be an artifact of language; to some degree, writers use the term *culture* to include what we have defined as climate. However, use of the term *climate* is not randomly distributed in the quality literature with respect to the problems addressed, such as overcoming resistance to change or promoting cooperation and communication. The problem for which favorable climate is

most often offered as the solution is innovation. For example, Fishman and Kavanaugh (1989) suggest that the "missing link" in quality is for supervisors to promote a group climate where people feel secure in offering improvement suggestions. They suggest further that climate is shaped substantially by behaviors of the supervisor, such as listening fully and giving recognition or otherwise being positive about employees' attempts at contributions.

Aside from the relatively focused climate dimensions featured in discussions of innovation, the broad dimensions of trust and its opposite, fear, recur in the quality and innovation literatures (e.g., Alexander, 1985; Kipnis, 1996; Sitkin & Stickel, 1996; Suarez, 1994). Deming (1986) includes among his principles that managers should "drive out fear" from the workplace because it is debilitating to the kinds of work required for quality (e.g., by making it dangerous to share information). Trust is an important topic not only in quality management but in organizational development generally today (Burke, 1997). Partly this importance stems from the increased need for trust in a period when hierarchical structures are being dismantled and employees' interactions are increasingly self-managed. The era of downsizing, huge CEO salaries, and corporate greed that coincided with the rise of quality management may also be a factor in the rise of concern with trust. Finally, there is hypocrisy in various forms, as when executives call for openness but hide impending changes from employees until they have all their facts together and all their ducks in a row.

We suspect that climate lurks in the background for quality management in other ways that have not been fully articulated in the literature. One indication comes from an observation made by Jha et al. (1996): Announcements by management of many quality programs, dating back to one of the earliest in 1894 (see Schroeder & Robinson, 1991), have been accompanied by announcements of actions to improve working conditions. This observation suggests that a climate of positive feeling toward the employer is necessary if employees are to change their ways of working as required for quality.

Climate for Innovation

An analysis of organizational conditions for innovation offered by West (1990) and his colleagues (Anderson, Hardy, & West, 1990) makes reference to values and norms but ultimately hinges on climate. The empirical research in this line has concerned teams in an oil factory (Burningham & West, 1995) and other settings. The research model posits that the determinants of group innovativeness are participative safety, support for innovation, climate for excellence, and vision. Participative safety is a climate factor involving an expectation that one will be appreciated rather than vilified for offering suggestions in the innovation process. Support for innovation is basically a shared value that innovation is good. As indicated earlier in this chapter, these expectations and values may be instilled explicitly in socialization or implicitly in cultural messages. In addition, although it does not directly influence innovation, a climate for excellence often is helpful because people striving for excellence will naturally seek innovation when appropriate. Similarly, a clear, attainable, and consensually shared vision or mission is helpful because people become motivated to reach the goal by appropriate means.

In a discussion that addresses connections between innovation and many variables from organizational behavior and organizational theory, Anderson and King's (1993) coverage of organizational climate keys on a study by Nystrom (1990). In this study of a chemical manufacturer, climate was conceptualized as playing a role along with strategy, structure, and culture. Moreover, specific configurations of culture and climate factors were observed to coincide with particular levels of innovative or creative output. For example, the firm's most innovative division displayed relatively high conflict and low trust and har-

mony, although risk taking and debate were encouraged, as was playfulness.

Amabile's (1998) work on creativity offers additional insight into pertinent aspects of climate for quality and innovation. In one of her studies, she asked research and development scientists about characteristics of the organizational environment that facilitate or inhibit creativity (Amabile, 1988). The inhibitors most frequently mentioned by the scientists included an organizational climate marked by lack of cooperation across divisions and levels and lack of value placed on creativity by the organizational culture. Inhibitory organizational structures and policies, such as inappropriate reward systems, also were mentioned frequently. The opposites of these factors, such as a creativity-promotive culture, were mentioned frequently by the scientists as facilitators. Also noteworthy among the facilitators was a sense of freedom over one's work, particularly in the day-to-day conduct of one's work. Nystrom's study mentioned previously and other research cited by Amabile have pointed to freedom as a favorable factor as well.

Amabile (1988) characterizes managers' tasks in support of creativity as a balancing act. In the area of feedback about performance, the wrong amount or wrong kind of performance evaluation is detrimental. Too much or overly specified criteria for evaluation may inhibit risk taking. Too little evaluation leads employees to feel forgotten and thus unmotivated. Thus Amabile recommends "a constant, constructive, less formal exchange of information about a project's progress on the part of all team members and management" (p. 149). Arriving at a recommendation about another balancing act, applying the right amount of pressure, is more difficult. On the one hand, some amount of time pressure and possibly competition appears to be facilitative; on the other, too much pressure appears to lead to unimaginative solutions.

Amabile has offered an encompassing model of creativity and innovation that in-corporates factors ranging from those at the highest level of organization (e.g., the mission statement for the organization as a whole) to the individual level (e.g., skills). Many aspects of Amabile's recommendations and model are consistent with one of the models of dynamics in organizational performance and change (particularly, transactional dynamics) that we describe in the next major section of this chapter. Before describing those models, we will complete the present section by examining one further connection of climate to quality and innovation.

Climate for Technology Implementation

Comprehensive analyses of quality recognize that even when people are highly motivated as a result of culture, climate, and other factors, they can provide world-class goods and services only if they make use of the best available technology for the task. Klein and Sorra (1996) argue that organizational climate is a key factor in technology implementation and other innovation implementation. These writers adapted Schneider's (1990a) conceptualization of climate, involving employees' shared perceptions concerning whether specific behaviors (as related to innovation, for example) are "rewarded, supported and expected in a setting" (p. 384). Findings from employees with access to computer-assisted design and drafting systems in an engineering and construction firm provide an illustration. Although the technology had been adopted and installed, and employees had received sufficient training and rationales to use it, use for some time was sporadic at best. The problem appeared to stem from a combination of unfavorable conditions that Klein and Sorra term a climate—lack of rewards for using the new technology and failure to remove barriers such as sluggishness in the operation of the computer itself. In other instances, indicators of a poor climate for innovation implementation could include lack

of training or coaching, failure to address concerns about change, scheduling or other time incompatibilities, and other shortcomings of organizational support for change.

A further aspect of Klein and Sorra's (1996) analysis suggests that when values (as discussed earlier in this chapter, in connection with culture) are incongruent with available innovation, implementation will suffer. One example involves an operational technology (as opposed to a mechanical or electronic one), statistical process control. Klein and Sorra cite Bushe's (1988) case study, in which manufacturing employees' high value on performance or production was seen as interfering with the change and learning required for SPC. They also provide other examples relating to teamwork, design for software development, and flexible production innovations.

In an article that is mostly about organization design and culture in relation to success in implementing advanced manufacturing technology, Zammuto and O'Connor (1992) discuss climate and individuals' motivation to maximize their skills with advanced technology. Various aspects of the employer-employee relationship that bear on climate features, such as security and warmth, appear to be key. For example, Zammuto and O'Connor cite Hildebrandt (1988) on the point that high-level learning about technology is more prevalent in "high-trust organizations." Walton's (1989) work on "high-commitment organizations" points in the same direction. High commitment is a two-way proposition: The employer promotes the employee's welfare in various ways, and the employee is fully engaged in learning and performance.

Evaluating the Contribution of the Concept of Climate to Innovation

Some of the research reviewed in this section may be questioned concerning either the subjectivity in case-based, qualitative studies or the design limitations of correlational studies (such as a potential reverse causal sequence in which innovating groups might have given high ratings to participative safety *because* their ideas were well received). Nevertheless, some reassurance comes from the frequent harmony of the findings of various researchers using somewhat different approaches (Amabile, Anderson, Nystrom, West, and others). Indeed, there may be more empirical basis for saying climate is associated with outcomes (such as more output of innovative ideas) than for saying the same about culture.

However, this empirical superiority is somewhat offset by the greater conceptual ambiguity surrounding climate. One issue is whether many so-called climate effects are better termed culture effects, as they are based in motivation stemming from either values or social pressure. Another is whether the "summary" nature of the "climate for" construct (i.e., climate as the social and psychological encapsulation or upshot of a wide variety of possible objective conditions) is a strength or weakness. Klein and Sorra (1996) note astutely that comparison of innovation across organizations, despite tremendous variation in specifics of policies and practices, could be greatly fostered by a focus of research on the cumulative influences of training, rewards, user-friendliness, and so on, which is to say, on climate for innovation implementation. However, a hazard in this approach is that, depending on how it is measured, the "climate for" conception may not add anything beyond its components (training, rewards, and so on). Alternatively, it may collapse into outcome variables such as motivations thought to govern work behavior (e.g., if conceptions of both "climate for" and "motivation" include expectations about rewards for behaviors). Moreover, if a researcher finds the middle ground between these alternatives, this may undermine his or her making connections back to the specific factors that need action by management or forward to explain how associated consequences are generated.

The issues here are reminiscent of those in the field of work stress, where stress is seen as the cumulative result of a wide variety of environmental and personal factors. Kasl (1984) concludes that the statement "Stress can cause illness" is both tenable and virtually meaningless without further specification; the same seems to apply to "Organizational climate can promote quality and innovation." At the same time, just as the concept of "stress" may have real heuristic value, "climate" may point in productive directions for research and practice.

In order for the climate construct to contribute to true explanation of employee behavior—either as the "climate for" version of the construct or as discrete dimensions of climate—more complete theoretical accounts must be developed. These accounts may need to draw on the interplay of perceptions of the environment (e.g., what is permitted, or encouraged, or expected), personal preferences, motivations, and social processes (see Klein & Sorra, 1996; Michela, Lukaszewski, & Allegrante, 1995). For example, if a climate of freedom is associated with innovation, a proper account of this association might require a description of the motivational and behavioral processes and events that occur when freedom is perceived or experienced.

For the moment, the empirical findings provide ample basis for management attention to organizational conditions likely to influence perceptions and experiences encompassed by "climate." Some approaches to intervention, to achieve favorable organizational conditions, are the topic of the next section.

COMPREHENSIVE PERSPECTIVES ON ORGANIZATIONAL TRANSFORMATION

The array of concepts, variables, and processes discussed so far in this chapter is potentially overwhelming. If all these factors must be considered in organizational change for quality and innovation, is there hope for the leader who seeks change? The answer is yes, because this huge task has been broken down into more manageable components in writings available in the quality literature and in the literatures on organization development and organizational change or transformation.

We favor writings in the latter literatures as points of departure for planning and initiating large-scale change for quality and innovation, because the models presented are comprehensive, systematic, and explicitly based on motivational and other psychological theory and research of the kind we reviewed in the earlier sections of this chapter. We will discuss three models in order to draw out three distinctions: transformational versus transactional dynamics, fixed-order versus contingent interventions, and orchestration versus improvisation.

The Burke-Litwin Model of Transformational and Transactional Dynamics

Burke and Litwin's (1992) model, presented in Figure 14.2, is a useful framework for understanding organizations in at least two ways. It addresses (a) what drives individual and organizational *performance,* and in what priorities, and (b) how to conceptualize and implement *change.* For our purposes in the context of this chapter, we will concentrate on the change dimension.
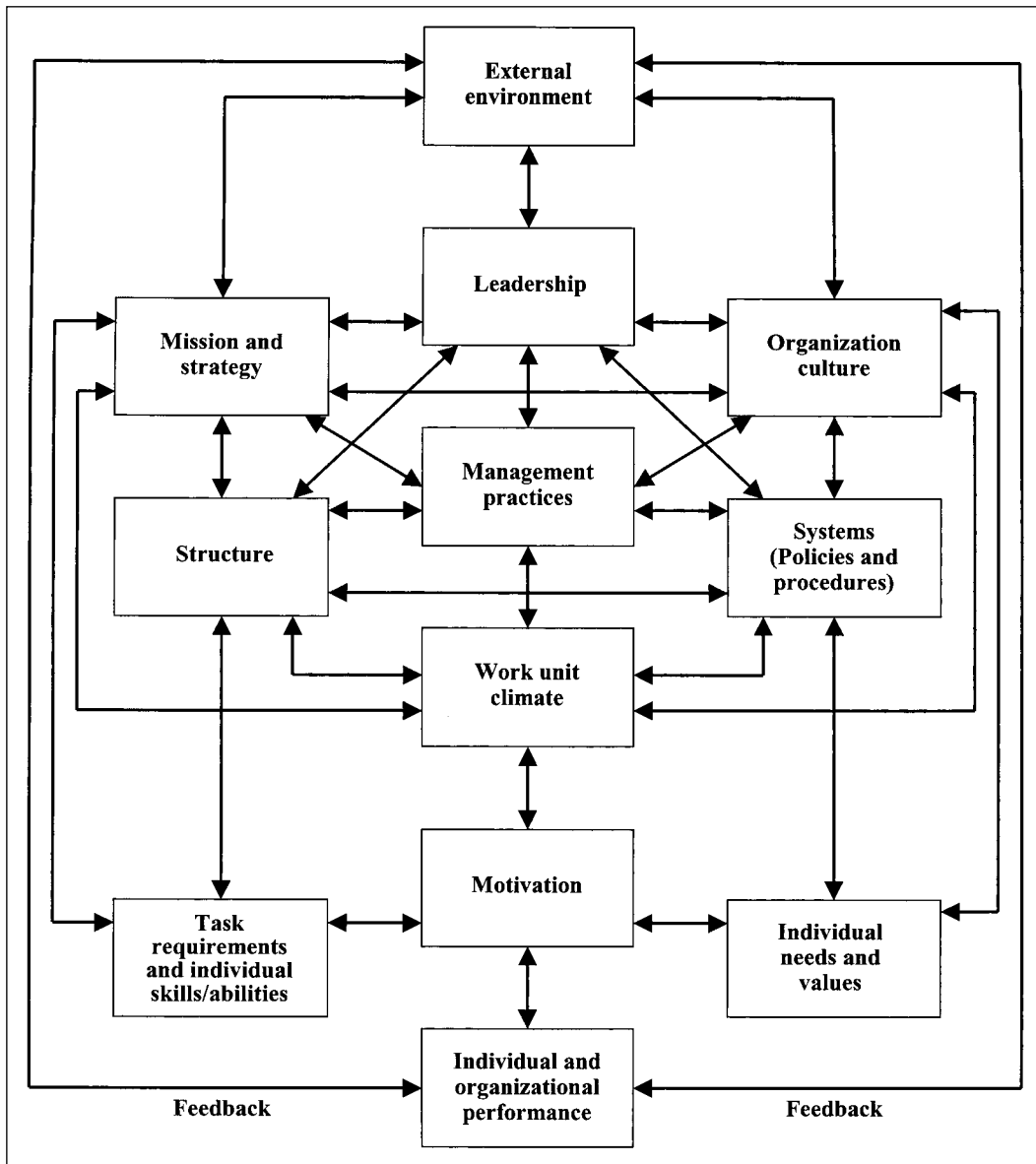
Figure 14.2. The Burke-Litwin Model of Transformational and Transactional Dynamics in Organizational Performance

It is pragmatic to think of organization change in terms of two levels: transformational and transactional. *Transformational* refers to fundamental, significant, and comprehensive change in an organization and is represented in the model by the top boxes: external environment (the forces from outside the organization that drive change, e.g., competition, changing technology, and/or market dynamics or globalization, new or reduced government regulations), mission and strategy (the purpose of and di-

rection for the organization, including *how* to get there), leadership (executives who are responsible for coordinating all the boxes in the model), and culture (the way we do things, the overt and covert rules, or norms and values). Typically, transformational change occurs when organizational members and primary stakeholders (e.g., the board) respond to environmental forces with entirely new behavioral sets. New ways of working for quality (think "culture") are paradigmatic here. Organization transformation, then, requires (a) new organizational directions in response to environmental changes, (b) new behaviors that will implement the different directions *and* are linked to new values and norms that support the new directions, and (c) leadership that promotes these new behaviors, understandings, and values.

The *transactional* level refers to organization changes that are more operational, day to day, and in many cases associated with continuous improvement. This level is represented in the model by the boxes in the lower half: structure (organizational design, accountability, decision making, and how units relate to one another, including hierarchy), management practices (the daily behaviors of managers as they relate to their bosses, peers, direct reports, and other relevant constituents, e.g., customers), systems (policies and mechanisms designed to facilitate work, e.g., rewards, communication, measures), work unit climate (the collective perceptions by members of a local work unit about what is expected of them, their feelings about their manager and one another, work standards, recognition, and other dimensions), motivation and other factors that have direct effects on motivation congruence, task requirements and individual skills/abilities, and individual needs and values. Climate results from the transactions of a number of boxes in the model, but particularly management practices (e.g., Litwin & Stringer, 1968). Earlier, when we referred to the supervisor's role in group climate (Fishman & Kavanaugh, 1989) and to the balancing acts required of managers seeking innovation (Amabile,

1988), we were addressing transactions of this kind.

Diagnosing and monitoring employees' beliefs, perceptions, and motivations, especially those related to culture and climate, are critical to any change effort. A model of this kind can point to the types of questions to ask in this diagnostic process and how to interpret identified shortcomings (see Trahant & Burke, 1996). The value of culture or climate diagnosis in the process of transformation to quality, specifically, is reflected in the work of Collard (1989). And, finally, it should be pointed out that

> executives and managers typically concern themselves with the left side of the [model]: mission and strategy, structure, task requirements and individual skills or abilities. In contrast, behavioral scientists are more likely to be concerned with the right side and middle of [the model]: leadership, culture, systems (especially rewards), management practices, climate, individual needs and values, and motivation. For a fundamental, large system change effort one should be concerned with the entire model and with a more effective integration of purpose and practice. (Burke, 1994, p. 138)

Kilmann's Integrated Sequence of Eight Tracks for Transformation

A good example of a sequenced model of corporate transformation is the one offered by Kilmann (1998), which describes eight interconnected "tracks" or thrusts of organizational and personal development. These tracks are culture, skills, team, strategy, reward, gradual process, radical process, and learning process. Although we cannot fully describe the model here (see Kilmann, 1995), the following points are noteworthy.

Kilmann's model is distinguished by its proposal of a preferred ordering of the kinds of actions for transformation that we have

been discussing throughout this chapter. Some of this ordering appears to be loose, and overlap in time is recommended (e.g., skills training begins while culture is still being addressed). Nevertheless, there is a definite starting point, culture, and some tracks are not to be followed until others have run their course (e.g., strategy and reward after culture and skills).

It should be noted that prescriptions for the ordering of actions for organizational change are fairly common in the literature focused more specifically on quality management (e.g., Camisón, 1998; Schmidt & Finnigan, 1992). However, some more general approaches, such as the Burke-Litwin model, imply a more contingent approach in choosing when to address the various components of the model.

Culture in Kilmann's model refers to norms about how people behave toward one another. In Kilmann's words, these are "dos and don'ts," not values. People can be specific in discussions of the corresponding behaviors, and they can call one another on norm violations. Within the culture track it is necessary to engender open communication and other behaviors that will enhance trust and other attributes of a positive social and task climate in the organization. Without these attributes, the difficult choices in reengineering or other sweeping transformations would be extremely difficult to discuss, let alone resolve. Support for innovation as adaptation to environmental requirements should also be fostered in this phase.

Finally, personal development and self-knowledge are as important as organizational development in Kilmann's approach. In part this is because radical organizational transformation bears on individuals' identities and attachments. Kilmann (1998) believes that people with strong egos—who know themselves and value their strengths —are better able to cope with radical change.

Bartunek's Model of Schema Conflict and Resolution

In contrast to the two "orchestrated" approaches to organizational change just described, Bartunek's (1993) approach could be described as "improvisational." Bartunek's analysis of organizational change hinges on her version of the concept of schemas. Illustrating the approach, Bartunek examined the schemas of five categories of employees or other stakeholders (i.e., consultants) during an initiative for greater productivity in a food-processing firm. Bartunek distinguishes among these schemas in terms of (a) what each group wanted to arise from the initiative, (b) means to achieve desired ends, (c) expressed concerns, and (d) a summary label. For example, Bartunek labels the schema for local management "paternalism" because it sought productivity and quality-of-life enhancements through a system that would maintain management dominance in decision making. Machinists' "competition" schema sought to maintain pay differentials with other, less skilled groups by refusing to participate in the intervention.

The improvisational nature of this approach lies in how the particular content of different groups' schemas will differ across organizations. (This contrasts with the more universal nature of the boxes of the Burke-Litwin model or the tracks of Kilmann's model, for example.) Nevertheless, most organizations may be expected to contain groups with different goals, different ideal paths to goals, and so forth. In some instances the sources of these differences will be "occupational cultures," defined by von Meier (1999) as different mental models or cognitive representations of technology and work effectiveness that are adaptive for the occupational groups but may lead to conflicting evaluations of innovation.

Misunderstandings or different understandings of the most effective ways of working are not the only basis of logjams that occur in attempts at organizational change.

Conflicting interests are also key. For example, local management might insist that its paternalistic orientation is necessary for everyone's ultimate benefit; line employees are unlikely to agree with this orientation if it means that their wishes will receive little weight in the decision process. In consulting practice, Bartunek induces the various groups to address each other's perspectives (schemas) explicitly. One of the functions of this direct engagement is to discover legitimate interests of the other, thus providing a basis for negotiation. Another function is to stimulate a dialectical process in which the status quo thesis and an alternative antithesis may become seen as reconcilable in a synthesis. Bartunek (1993) describes such an outcome for a religious order that arrived at a synthesis of two seemingly incompatible roles for itself in its community (somewhat as Reger et al., 1994, discuss in connection with identity-based change, described earlier). Finally, in direct engagement it may be discovered that notions about the legitimacy of conflict itself and acceptable ways of handling conflict are intrinsic to one or more groups' schemas, and that these notions must be addressed.

Conflict should be expected to lie under (if not above) the surface of many instances of change for quality or innovation. Over time, as ways of doing things become entrenched in organizations, many organization members acquire a stake in keeping things that way (e.g., in their job titles/authority, value of their skills). Change threatens these vested interests. A good starting point for further reading on this matter is Kanter (1988).

Evaluating Systematic Approaches ro Organizational Change for Quality and Innovation

It seems unlikely there is one best way to approach change in culture or climate for quality and innovation—which is why we have tried to present several different kinds of models for organizational change. Other relevant models may be found in Burke (1994). Even within each model, a contingent approach (informed by diagnostic data) is generally necessary, and elements may need to be combined from multiple models. For example, Kilmann (1998) does not recommend just jumping in with the first track in his model. He advises strategy analysis and diagnosis of barriers to strategy implementation before the tracks are scheduled and implemented.

INTERPRETATIVE AND CRITICAL PERSPECTIVES

Earlier in this chapter, we pointed to ideal values, norms, and understandings for quality. However, actual approaches to quality vary considerably. In a rich discussion that covers more ground than we can summarize here, Spencer (1994) conceptualizes this variation in terms of three models of organization: mechanistic, organismic, and cultural. She argues that in some respects or some implementations, TQM is basically an extension of the old, mechanistic model of organizations and maintains a whiff of Taylorism. Other writers have pointed to the *increased* stress felt by workers in manufacturing plants where TQM has yielded processes so well controlled and measured that production standards are extremely demanding and deviations are immediately detected and attributable to individuals or groups. The organismic model as presented by Spencer questions the "always and everywhere" TQM prescriptions, such as Deming's (1986) 14 principles, and reflects a focus that is relatively more external (toward satisfying customers) than internal (toward optimizing processes—consistent with its systems view of the organization). Organizations that operate according to this organismic model may provide opportunities for intrinsic satisfactions as discussed earlier, but they have not fully embraced the value on "fulfilling work

and respect for employees" (see Table 14.1) that is central to Spencer's cultural model. For example, in the mechanistic and organismic models, managers are cast as designers and coordinators of the organizational systems; in the cultural model, they are seen as inspiring and exemplifying leaders, coaches, and mediators.

Spencer's "interpretative" orientation reminds us that writings like this chapter may themselves be value-laden rather than value-free. The organizational analyst's or change consultant's choice is to act either normatively, articulating and acting in accord with his or her own stated values, or contingently, as by focusing on obtaining valid data that a client may use to pursue whatever his or her goals may be (Burke, 1982, 1994, 1997). In an era when transformations to quality are sometimes accompanied by downsizing and other exercises of corporate power over individuals and societies (e.g., see Estes, 1996; Korten, 1995), we are comfortable in supporting the employee-oriented and society-oriented values that can be well aligned with total quality management. However, as Spencer's analysis of quality approaches and organizational models makes clear, this alignment is not automatic. Like any management approach, quality management principles may end up either helping or hurting people. It is our hope that this chapter can aid those who want to promote workplaces that are more rewarding and effective in all senses.

SUMMARY AND CONCLUSIONS

The quote from Woods (1997) near the beginning of this chapter helped to set the tone and perspective for our approach, namely, that quality and innovation in organizations are inextricably intertwined with organizational culture. The question immediately raised is how to ensure an appropriate inter-

twining. The answer usually entails, at least at the outset of a quality emphasis, organization change, especially in the dimension of culture. To change culture, one must first understand it. We have therefore examined some of the fundamentals of culture—values and norms—highlighting examples that relate to quality and innovation.

Our discussion of these fundamentals has departed from most other analyses of organizational culture in its coverage of the concept of schemas, which we have defined as cognitive structures that help people to understand and explain complex matters such as the critically important dimensions of organizational change. We have noted that pertinent schemas can take at least two forms—models and stories—and that the concept of schemas appears in various forms in the literatures on culture, climate, quality, and innovation (e.g., as reframing).

We have also discussed the importance of key processes in cultural change, particularly training, measurement, and rewards. Training helps to orient organizational members toward the kinds of behaviors that will lead to a culture that stresses the importance of quality and innovation in their daily work. With respect to measurement and rewards, it is interesting to note that managers often say, "What you measure is what you get," and behavioral scientists just as often say, "What you reward is what you get." Both are correct. Yet great care must be taken with both to make certain that one is measuring the right behaviors to ensure individual and organizational performance for high quality and to ensure that the relevant behavior and performance are rewarded (Kerr, 1995).

Finally, in considering organization change, we have argued that it is important to make a distinction (yet understand the overlap) between culture and climate—organizational background and foreground, respectively. Culture may be the ultimate goal, but to get there, climate must be affected. The latter requires change in people's everyday experiences of the ways in which they are managed and their relations with one another.

244 THE DYNAMICS OF CULTURE AND CLIMATE CHANGE

With all of the complexities of culture change that we have considered, one can easily feel overwhelmed. Choices have to be made, priorities determined, and time and energy devoted to the effort. These complexities explain, in part, the reason so many culture change efforts are never realized. In addition, getting a change under way is one thing—keeping it going is quite another and more difficult matter.

Whether in the direction of higher quality and greater innovation or in the direction of customer focus and market orientation, organizational culture change is possible (see,

e.g., Burke, 1994; Goodstein & Burke, 1991). To make it possible, those who want to make such change must pay attention to the dimensions of relevant organizational models that emphasize change, be clear about the direction and priorities of change ingredients and activities, and provide persistent and consistent leadership to make it all happen in the first place and then to sustain and renew the process.

REFERENCES

Alexander, C. P. 1985. The theories of Likert and Gibb: New tools for determining management readiness for quality circles and similar OD interventions. Organization Development Journal, 3(1), 15-20.

Amabile, T. M. 1988. A model of creativity and innovation in organizations. In B. M. Staw and L. L. Cummings (Eds.), Research in organizational behavior, Vol. 10 (pp. 123-167). Greenwich, CT: JAI Press.

Amabile, T. M. 1998. How to kill creativity. Harvard Business Review, 76 (5): 76-87.

Anderson, N., Hardy, G., & West, M. 1990. Innovative teams at work. Personnel Management, 22 (9): 48-53.

Anderson, N., & King, N. 1993. Innovation in organizations. In C. L. Cooper & I. T. Robertson (Eds.), International Review of Industrial and Organizational Psychology (Vol. 8, pp. 1-34). Chichester: Wiley.

Bartunek, J. M. 1993. The multiple cognition and conflicts associated with second order organizational change. In J. K. Murnighan (Ed.), Social psychology in organizations: Advances in theory and research (pp. 322-349). Englewood Cliffs, NJ: Prentice-Hall.

Beecroft, G. D. 1995. Implementing Total Quality Management. Waterloo: Institute for Improvement of Quality and Productivity, University of Waterloo, Ontario, Canada.

Bolman, L. G., & Deal, T. E. 1991. Reframing organizations: Artistry, choice, and leadership. San Francisco: Jossey-Bass.

Burke, W. W. 1982. Organization development: Principles and practices. Boston: Little, Brown, and Company.

Burke, W. W. 1994. Organization development: A process of learning and changing (2nd ed.) Reading, MA: Addison-Wesley.

Burke, W. W. 1997. The new agenda for organization development. Organizational Dynamics, 26 (1): 7-20.

Burke, W. W., & Litwin, G. H. 1992. A causal model of organizational performance and change. Journal of Management, 18 (3): 523-545.

Burningham, C., & West, M. 1995. Individual, climate, and group interaction processes as predictors of work team innovation. Small Group Research, 26: 106-117.

Bushe, G. R. 1988. Cultural contradictions of statistical process control in American manufacturing organizations. Journal of Management, 14: 19-31.

Cameron, K., & Quinn, R. E. 1999. Diagnosing and changing organizational culture: The competing values framework. Reading, MA: Addison-Wesley.

Camison, C. 1998. Total quality management and cultural change: A model of organizational development. International Journal of Technology Management, 16: 479-493.

Collard, R. 1989. Total quality: Success through people. London: Institute of Personnel Management.

Daft, R. L. 1992. Organization theory and design. Saint Paul: West Publishing Company.

D'Andrade, R. A. 1984. Cultural meaning systems. In R. A. Shweder & R. A. LeVine, Eds. Culture theory: Essays on mind, self, and emotion (pp. 88-119). Cambridge University Press.

Deci, E. L. & Ryan, R. M. 1980. The empirical exploration of intrinsic motivational processes. In L. Berkowitz (Ed.), Advances in experimental social psychology, Vol. 13 (pp. 39-80). New York: Academic Press.

De Lima, K. J. 1999. Organisational "C4Q" (the culture and climate for Total Quality): Consequences and antecedents. Unpublished doctoral dissertation, Lincoln University, Canterbury, New Zealand.

Deming, W. E. 1986. Out of the crisis. Cambridge, MA: MIT, Center for Advanced Engineering.

Denison, D. R. 1996. What IS the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. Academy of Management Review, 21: 619-654.

Estes, R. 1996. Tyranny and the bottom line: Why corporations make good people do bad things. San Francisco: Berrett-Koehler.

Exterbille, K. 1996. TQM can be DOA without a proper communications plan. Journal for Quality and Participation, 19 (2): 32-35.

Fishman, N. & Kavanaugh, L. 1989. Searching for your missing quality link. Journal for Quality & Participation, December, 28-32.

Fiske, S. T., & Taylor, S. E. 1991. Social cognition. New York: McGraw-Hill.

Flynn, B. 1998, February. Keynote presentation to the Conference on Quality and Management: Quality Now and Direction for the 21st Century. Sponsored by the Academy of Management, the Arizona State College of Business, and the Arizona State University Department of Management, Tempe, AZ.

Gardner, H. 1995. Leading minds. An anatomy of leadership. New York: Basic Books.

Garvin, D. A. 1988. Managing quality: The strategic and competitive edge. New York: The Free Press.

Goodstein, L. D. and Burke, W. W. 1991. Creating successful organizational change. Organizational Dynamics, 19(4), 5-17.

Hackman, J. R., & Wageman, R. 1995. Total Quality Management: Empirical, conceptual, and practical issues. Administrative Science Quarterly, 40, 309-342.

Hildebrandt, E. 1988. Work, participation, and co-determination in computer-based manufacturing. In D. Knights & H. Willmott (Eds.), New technology and the labour process (pp. 50-65). London: Macmillan.

James, L. R. 1982. Aggregation bias in estimates of perceptual agreement. Journal of Applied Psychology, 67: 219-229.

Jha, S.J., Michela, J.L., & Noori, H. 1996. The dynamics of Continuous Improvement: Aligning organizational attributes and activities for quality and productivity. International Journal of Quality Science, 1: 19-47.

Kanter, R. M. 1988. When a thousand flowers bloom: Structural, collective, and social conditions for innovation in organizations. In B. M. Staw & L. L. Cummings (Eds.), Research in organizational behavior (Vol. 10, pp. 169-211). Greenwich, CT: JAI Press.

Kasl, S. V. 1994. Stress and health. In L. Breslow, J. E. Fielding, & L. B. Lave (Eds.), Annual Review of Public Health (Vol. 5, pp. 319-341). Palo Alto, CA: Annual Reviews, Inc.

Kerr, S. 1995. An Academy classic: On the folly of rewarding A, while hoping for B. Academy of Management Executive, 9(1), 7-16

Kerr, J., & Slocum, J. W. 1987. Managing corporate culture through reward systems. Academy of Management Executive, 1 (2): 99-108.

Kilmann, R. H. 1995. A holistic program and critical success factors of corporate transformation. European Management Journal, 13 (2): 175-186.

Kilmann, R. H. 1998, August. Achieving corporate transformation: Integrating TQM, reengineering, and learning organizations. Presentation at the Annual Meeting of the Academy of Management, San Diego.

Kilmann, R. H., Covin, T. J., & Associates. (Eds.). 1988. Corporate transformation: Revitalizing organizations for a competitive world. San Francisco: Jossey-Bass.

Kipnis, D. 1996. Trust and technology. In R. M. Kramer & T. R. Tyler, Eds. Trust in organizations: Frontiers of theory and research (pp. 39-50). Thousand Oaks, CA: Sage Publications.

Klein, K. J., & Sorra, J. S. 1996. The challenge of innovation implementation. Academy of Management Review, 21: 1055-1080.

Kober, K., & Knowles, R. 1996. Measurement in self-organizing systems. Journal for Quality and Participation, 19 (1): 38-41.

Korten, D. C. 1995. When corporations rule the world. West Hartford, CT: Kumarian Press.

Kotter, J. P. 1996. Kill complacency. Fortune, 134(3, August 5): 168-170.

Litwin, G. H., & Stringer, R. A. 1968. Motivation and organizational climate. Boston: Harvard Business School Press.

Michela, J.L. 1996. Social psychology and organizations. In G. Semin & K. Fiedler (Eds.), Applied Social Psychology (pp. 227-256). London, UK: Sage Publications.

Michela, J. L., Clark, A., Jha, S., & Noori, H. 1998. You CAN get there from here: Mapping one route to a quality culture. IIQP Technical Reports (RR-98-08). Institute for Improvement of Quality and Productivity, University of Waterloo, Onatario, Canada.

Michela, J. L., Jha, S., Noori, H., Weitzman, E. A., & Eickmeier, B. E. 1997, August. The nature of Continuous Improvement as revealed by bibliographic citation analysis. Paper presented at the Annual Meeting of the Academy of Management, Boston.

Michela, J.L., Lukaszewski, M.P., & Allegrante, J.A. 1995. Organizational climate and work stress: A general model applied to inner-city schoolteachers. In S. L. Sauter & L. R. Murphy (Eds.), Organizational risk factors for job stress (pp. 61-80). Washington, D.C.: American Psychological Association.

Newman, V., & Chaharbaghi, K. 1998. The corporate culture myth. Long Range Planning, 31: 514-522.

Nystron, H. 1990. Organizational innovation. In M. A. West and J. L. Farr (Eds.), Innovation and creativity at work: Psychological and organizational strategies. Chichester: Wiley.

Olian, J. D., & Rynes, S. L. 1991. Making Total Quality work: Aligning organizational processes, performance measures, and stakeholders. Human Resource Management, 30: 303-333.

Pratkanis, A. R., & Greenwald, A. G. 1989. A sociocognitive model of attitude structure and function. In L. Berkowitz, Ed., Advances in experimental social psychology (Vol. 22, pp. 245-285). New York: Academic Press.

Reger, R. K., Gustafson, L. T., DeMarie, S. M., & Mullane, J. V. 1994. Reframing the organization: Why implementing Total Quality is easier said than done. Academy of Management Review, 19, 565-584

Rubin. I. & Inguagiato. R. 1991. Changing the work culture. Training and Development, 45 (7), 57-60.

Sathe. V. 1985. How to decipher and change corporate culture. In R. H. Kilmann, M. J. Saxton, & R. Serpa, Eds. Gaining control of the corporate culture (pp. 230-261). San Francisco: Jossey-Bass.

Schein. E. H. 1985. Organizational culture and leadership. San Francisco: Jossey-Bass.

Schneider. B. 1975. Organizational climates: An essay. Personnel Psychology, 40: 437-453.

Schneider. B. 1990. The climate for service: An application of the climate construct. In B. Schneider (Ed.), Organizational climate and culture (pp. 383-412). San Francisco: Jossey-Bass.

Schneider. B., Brief, A. P., & Guzzo, R. A. 1996. Creating a climate and culture for sustainable organizational change. Organizational Dynamics, 24(4): 6-19.

Scholtes. P., & Hacquebord, H. 1988. Beginning the quality transformation, Parts 1 & 2. Quality Progress, July: 28-33.

Schroeder. D. M. 1998, February. Keynote presentation to the Conference on Quality and Management: Quality Now and Direction for the 21st Century. Sponsored by the Academy of Management, the Arizona State College of Business, and the Arizona State University Department of Management, Tempe, AZ.

Schroeder. D. M., & Robinson, A. G. 1991. America's most successful export to Japan: Continuous improvement programs. Sloan Management Review, 32(3): 67-81.

Shweder. R. A. & LeVine. R. A., Eds. 1984. Culture theory: Essays on mind, self, and emotion. Cambridge University Press.

Sitkin. S. B. & Stickel. D. 1996. The road to hell: The dynamics of distrust in an era of quality. In R. M. Kramer & T. R. Tyler, Eds. Trust in organizations: Frontiers of theory and research (pp. 39-50). Thousand Oaks, CA: Sage Publications.

Spencer. B. A. 1994. Models of organization and total quality management: A comparison and critical evaluation. Academy of Management Review, 18: 446-471.

Suarez. J. G. 1994. Managing fear in the workplace. Journal for Quality and Participation, 17(7): 24-29.

Tichy. N. M. 1983. Managing strategic change. New York: Wiley.

Trahant. B. and Burke, W. W. 1996. Traveling through transitions. Training and Development, February, 37-41.

Tushman. M. L., & O'Reilly, C. A., III. 1997. Winning through innovation: A practical guide to leading organizational change and renewal. Boston: Harvard Business School Press.

Trice. H. M., & Beyer, J. M. 1993. The cultures of work organizations. Englewood Cliffs, NJ: Prentice-Hall.

von Meier, A. 1999. Occupational cultures as a challenge to technological innovation. IEEE Transactions on Engineering Management, 46 (1) 101-114.

Waldman. D. A., Lituchy, T., Gopalakrishnan, M., Laframboise, K., Galperin, B. & Kaltsounakis, Z. 1998. A qualitative analysis of leadership and quality improvement. Leadership Quarterly, 9 (2): 177-201.

Walton. R. E. 1989. Up and running: Integrating information technology and the organization. Boston: Harvard Business School Press.

Webster. J., Michela, J. L., Greenstein, A., King, R., Nolan, J. & Weiss, A. 1998. Diagnosing the design of a matrixed software development team. University of Waterloo, Ontario: Waterloo Organizational Research and Consulting Group.

West, M. A. 1990. The social psychology of innovation in groups. In M. A. West and J. L. Farr (Eds.), Innovation and creativity at work: Psychological and organizational strategies (pp. 309-333). Chichester: Wiley.

Woodruff, R. B. 1997. Customer value: The next source for competitive advantage. Journal of the Academy of Marketing Science, 25: (2) 139-153.

Woods, J. A. 1997. The six values of a quality culture. National Productivity Review, 16 (2): 49-55.

Zammuto, R. F., & O'Connor, E. J. 1992. Gaining advanced manufacturing technologies' benefits: The roles of organization design and culture. Academy of Management Review, 17: 701-728.