

WHEN AND HOW TEAM LEADERS MATTER

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ABSTRACT

Team leaders tend to be viewed both by lay observers and by scholars as more influential in shaping team performance than is warranted by research evidence. This chapter identifies the technological, organizational, and contextual constraints that can attenuate the impact of team leader behavior, and explores the behavioral options that remain available to leaders under constraining circumstances. We then address three decisions team leaders make that can spell the difference between team success and failure: (a) what kind of team to create; (b) how to structure the team; and (c) how and when to actively coach the team as it proceeds with its work. We propose that team leaders' decisions about such matters often are made implicitly rather than deliberately, and therefore are suboptimal. Finally, we explore the implications of our analyses for team leader training and development, with emphasis on developmental activities that can make the implicit explicit and promote continuous learning by team leaders and members.

Traditionally, leaders' behaviors and decisions – if not necessarily their personalities and styles – have been viewed as highly consequential for the effectiveness of teams, organizations, and nations (e.g. Barnard, 1938; Child, 1972; Fiedler, 1967; Homans, 1964). What is done by the person at the helm, it has been argued, directly and significantly affects both the performance of collectives and

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the well-being of their members. As Hogan, Curphy and Hogan (1994) concluded in their comprehensive review of leadership research: “leadership matters” (p. 494).

As plausible and consistent with lay observations as that assertion is, serious questions have been raised in recent years about its validity, especially by scholars in the population ecology tradition such as Hannan and Freeman (1989; see also Pfeffer, 1977). In this view, which is a contemporary reprise of the structuralist position articulated over a century ago by scholars such as Durkheim (1895/1982), leaders may indeed do all manner of organizing, planning, and directing. But the fates of their collectives actually are determined by forces over which they have little or no control.

The long-standing debate between leader-centric and structural or situationalist explanations of collective performance has never been resolved and, as Wasserman, Nohria and Anand (2001) suggest in a conceptual and empirical analysis of the impact of CEOs on corporate performance, probably cannot be. The reason is that the debate is about the wrong question. The right question, these authors propose, is not whether leaders make a difference, but *when* leaders make a difference (see also Chan & Brief, 2005). What are the circumstances when leaders’ actions are highly consequential for performance, and when do leaders’ behaviors and decisions make essentially no difference?

Wasserman and his colleagues focus specifically on CEOs, and offer a highly insightful conceptual and empirical analysis of the “when” question (which, in brief, shows that CEOs have the greatest impact when organizational opportunities are scarce but slack resources are available). Their arguments about CEOs apply just as forcefully to the leaders of purposive teams – the focus of this chapter.

Team leaders, like CEOs, also tend to be viewed by lay observers, as well as by not a few scholars, as highly influential in shaping the performance of their teams. But are team leaders really a main, or *the* main, influence on performance? Or does our tendency to view them that way merely reflect what Meindl (1990; Meindl, Erlich & Dukerich, 1985) has called the “romance” of leadership? Consider, for example, an industrial team that regularly sets new plant production records. It is the team leader who receives an award and subsequently is promoted. Or an airline crew that finds a way to work around serious mechanical problems encountered in flight. It is the Captain whom all applaud. Or an orchestra that turns in an outstanding musical performance. It is the conductor who turns from the orchestra to the audience to accept the ovation. In each of these cases, observers experience a strong impulse to take the romantic view and credit the team leader for collective outcomes. Indeed, this impulse is so strong that we risk adding to the conceptual clutter of our field by giving it a name – the leader attribution error (Hackman, 2002, Chap. 7).

The leader attribution error (LAE) is understandable, pervasive, and quite powerful. It is *understandable* in part because of the high visibility and salience of the team leader (of the 101 people who are performing a piece of symphonic music, only one is standing on the podium) and because of the relative invisibility to observers of structural or contextual factors that may be powerfully shaping performance (for example, the quality of the string players' sound being compromised by the heat and humidity in the concert hall). Moreover, as scholars in the psychoanalytic tradition have documented, people have a strong, if unconscious, tendency to invest in group leaders their (unrealistic) hopes and fantasies for the success of the collective (Bion, 1961; Goethals, 2005; Rioch, 1975).

The LAE also is *pervasive*, occurring for unfavorable as well as favorable outcomes. The standard remedy for an athletic team that experiences a string of losses, for example, is to replace the coach, and it is the conductor who is excoriated in reviews of a poor orchestral performance. Moreover, it is not just outside observers or managers who make the error. Team members themselves, the people who work together to generate the collective product, also are vulnerable. Corn (2000) asked members of a diverse set of teams, ranging from community health groups to a mutual fund company to military units, to identify the "root cause" of their team performance. For teams that were performing well, over 60% of the explanations had something to do with someone's personality or behavior – and that someone frequently was the team leader. For teams that were performing poorly, 40% of the initial attributions were about personality or behavior. Similarly, Naquin and Tynan (2003) identified what they call a "team halo effect," in which individuals are far more likely to be identified as the cause of team failures than the team as a collective.¹

Finally, the LAE is *powerful*, sometimes extending even to inaction by, rather than actions actually taken by, team leaders. For example, members of self-analytic groups (that is, groups whose purpose is to help members learn from analysis of their own group experiences) generally hold the leader responsible for the rocky start that such groups invariably experience. Typically, the leader of a self-analytic group remains silent for the first few moments to ensure that all behaviors that occur are spontaneously generated by – and therefore owned by – group members themselves. The LAE is so strong that the leader's silence itself often is viewed by members as the main cause of what transpires; only gradually do they come to accept and explore their own responsibility for the behaviors they have generated.

Even highly trained and experienced professionals, people who perform demanding team tasks as part of their daily work, are vulnerable to the LAE. A player in a top symphony orchestra, describing to one of us an extraordinary performance by the orchestra, reported that the conductor had "pulled out of us

a performance I didn't know we had in us." A player in a different orchestra, explaining an unsatisfactory concert, complained that the conductor "just couldn't get us to play beyond the notes on the page." Only when there is significant ambiguity about whether a team's performance was a success or a failure is the leader attribution error muted (Meindl, Ehrlich & Dukerich, 1985).

Under some conditions, of course, the leader's actions really *do* spell the difference between team success and failure. And when they do, the choices leaders make about how to deal with their teams can powerfully affect how well those teams perform. In this chapter, we first address the organizational circumstances under which leaders' actions vis-à-vis their teams are consequential for team performance, as contrasted with those when they are unlikely to make much difference. Then we turn to the decisions team leaders make about the kind of team to create, how to structure the team, and how to coach the team as it proceeds with its work.

We will see that team leaders' decisions about such matters often are made implicitly or habitually rather than deliberately, and that they often are suboptimal. The chapter closes with an exploration of the implications of these facts for the training and development of team leaders – especially developmental activities that can help make the implicit explicit and do so in a way that promotes leaders' ongoing learning in real time.

WHEN TEAM LEADERS MAKE A DIFFERENCE – AND WHEN THEY CANNOT

If one considers only negative effects of team leader actions, then it is of course true that team leaders always can make a difference. A grossly incompetent or willfully destructive leader can undermine the performance even of what otherwise would be a beautifully functioning team (see Hogan, Curphy & Hogan, 1994, p. 493; Kellerman, 2004, for analyses of the dynamics and effects of "bad" leadership). But the reverse is not always true. There are circumstances under which even the best efforts of a superb team leader cannot help a team succeed. Specifically, when essential team processes are constrained or are controlled by factors the team leader cannot affect, there is little that a leader can do to promote team effectiveness through his or her direct work with the team.

Key Performance Processes

To analyze the conditions under which team leaders can make a difference first requires identification of those processes that are, in fact, key to team performance.

We posit that team performance effectiveness is a joint function of: (a) the level of *effort* group members collectively expend carrying out task work; (b) the appropriateness to the task of the *performance strategies* the group uses in its work;² and (c) the amount of *knowledge and skill* members bring to bear on the task (Hackman & Morris, 1975; Hackman & Wageman, in press).³ Any team that expends sufficient effort on its work, deploys a performance strategy that is well-aligned with task requirements, and brings ample talent to bear on the work is quite likely to perform well. By contrast, teams that operate in ways that compromise their standing on these three performance processes are likely to underutilize their collective resources and turn in suboptimal performances.

One way a leader can facilitate team effectiveness, then, is to help members work together in ways that enhance their level of effort, the appropriateness of their task performance strategies, and the utilization of members' knowledge and skill. This help can involve minimizing a group's vulnerability to what Steiner (1972) has called "process losses," or helping a group create positive process gains, or both. That is, the leader can help the team avoid patterns of interaction that invite social loafing, the use of inappropriate performance strategies, and/or under-utilization of member talent; also, the leader can promote interactions that enhance collective effort, generate strategies uniquely suited to task requirements, and/or actively develop member knowledge and skills.

For some tasks, however, the amount of help a leader can give a team in improving its performance processes is limited because one or more of those three processes is constrained or controlled by external factors over which the leader has no direct control. And if there is nothing a leader can do to help members improve how they manage their effort, their performance strategies, or their talents, then his or her direct work with the team can make little constructive difference in team performance.

We examine two sets of external factors that constrain team performance processes and therefore team leaders' leverage in helping a team. The first set of constraints operates at the level of the team itself – specifically, aspects of its technological and organizational context. The second set operates at the level of the broader institutional context.

Team Level Constraints

Three different aspects of a team's immediate work context can constrain or control each of the three key performance processes. Specifically, a leader's ability to help a team improve its performance by managing the level of effort members expend on the task is constrained by the degree to which work *inputs* are under external

control. When the arrival of the materials that a team is to process is externally controlled (for example, by customer demand or machine pacing) a team can only respond to whatever it receives, and will be unable to increase its output by working especially hard. In such circumstances, the relationship between team effort and performance is severely restricted and effort-focused interventions by a team leader would be futile.

A leader's ability to help a team improve its task performance strategy is constrained by the degree to which performance *operations* are externally determined. When work procedures are completely pre-specified (for example, by mechanical requirements or by a manual that dictates exactly how the work is to be done) a team has no latitude to develop a new or better strategy. In such circumstances, the relationship between team performance strategies and performance outcomes is severely restricted, and strategy-focused leadership interventions would be ineffectual.

Finally, a leader's ability to help a team improve the utilization of member knowledge and skill is constrained by the degree to which work activities are *simple and predictable* (versus complex and unpredictable). When the work requires the use of skills that are common in the general population on tasks that are well-understood, a team is unable to improve its performance by bringing additional knowledge or skill to bear on the work. In such circumstances, the relationship between the team's utilization of member talent and team performance is severely restricted, and leadership interventions that seek to improve how the team applies member talents to the task would make no appreciable difference.

For some teams, all three of the key performance processes are unconstrained, and all three therefore are salient in affecting performance outcomes. Consider, for example, the work of a product development team. The pace of the work is largely at the discretion of the team, performance procedures are mostly unprogrammed, and the work requires use of complex skills to deal with considerable uncertainty in the environment. Any competently provided interventions by the team leader that assist the team in better managing the key performance processes would help improve its performance.

In other circumstances, some performance processes are constrained and others are not. Surgical teams are one example (Edmondson, Bohmer & Pisano, 2001). There is little constraint regarding the use of knowledge and skill by team members, but moderate constraint on both strategy (some, but not all, procedures are programmed) and effort (some, but not all, task inputs derive from the nature of the surgical procedure and the response of the patient as the operation progresses). Finally, there are some circumstances in which all three performance processes are constrained, as for a team working on a mechanized assembly line where inputs are machine paced, assembly procedures are completely programmed, and

performance operations are simple and predictable. A team assigned such a task would be a team in name only, since performance would depend so little on how members interact.

Contextual Constraints

The constraints just described are located at the team level of analysis. Team work processes, and therefore the capability of team leaders to make a constructive difference by working with members to improve them, also can be constrained by more distal factors. We discuss next three aspects of the organizational and environmental context that can limit a team's ability to perform better by working harder, by developing a better performance strategy, and/or by better utilizing members' knowledge and skills.

A leader's ability to help a team succeed by encouraging greater collective effort is constrained when the ultimate *purposes* of an organization are of extraordinary importance. In such circumstances, members of teams that contribute directly to the achievement of the organization's noble purposes are likely to have a level of motivation – and exhibit a level of effort – near the ceiling of what is possible. Imagine, for example, an organization whose main purpose were the rescue of victims from accidents and other life-threatening mishaps. It surely is true that members of a rescue team trying to extract injured passengers from a bus accident would be about as motivated as it is possible to be. In this and similar cases, members could not improve their performance by working harder because they already are working as hard as they can. And, for the same reason, any intervention by the team leader to foster even greater effort by the team would have little or no constructive effect. Nobility of purpose, then, can provide such a strong incentive for hard work that any additional effort-focussed interventions by the team leader would be superfluous.

Strong *institutional forces* that specify how an organization's work should be (or must be) organized and executed can significantly constrain the impact of leader interventions intended to help a team devise task performance strategies that are uniquely suited to the team task. Examples of institutional constraints include legal or regulatory requirements that dictate how work is to be executed, or quality programs such as ISO 9000 that generate detailed documentation of work processes that subsequently must be followed exactly. Such constraints tend to diffuse across organizations and to persist over time. Institutional theory posits that organizations situated in similar environments tend over time to become isomorphic with those environments and with one another (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Scott, 1987).⁴ Moreover, once institutional elements

have been incorporated, they become self-sustaining and persistent (Stinchcombe, 1965, pp. 168–169). The result can be a set of generally accepted operating routines that are difficult to alter because they gradually become valued in their own right. For a work team, then, the net effect of strong institutional forces is to provide a set of predefined “right answers” for how members should proceed with the work – that is, the team’s task performance strategy. When institutional forces are strong, team leaders have little opportunity to help their teams generate a strategy that is uncommon but potentially more appropriate for the team’s work.

The *labor market* from which team members are drawn can significantly constrain the impact of leader interventions intended to help members use their knowledge and skills more effectively in the service of the task. Specifically, when the labor market provides an abundance of team members who are fully qualified or overqualified for the work to be performed, the team is likely to have more than sufficient talent for routine task demands. To further foster talent-related processes among members – for example, by providing occasions for them to learn from one another – would make little or no difference in performance because, for those team members, the work activities would not require knowledge or skill that exceeded their existing capabilities.

Summary and Application

Teams can be helped to perform better by leadership interventions that focus specifically on reducing process losses and/or on fostering process gains only for those aspects of team performance processes that are relatively unconstrained by either team-level or contextual factors. The main team-level and contextual constraints on the three main performance processes are summarized in Table 1. Leader interventions that address team processes that *are* substantially constrained by the factors listed in the table will be ineffectual since they seek to improve team processes that are not salient in determining team performance. Indeed, such interventions can even compromise performance because they consume members’ time and direct their attention away from more consequential aspects of their interaction. In effect, the exogenous factors serve as substitutes for the leadership that the team leader otherwise could provide (Kerr & Jermier, 1978; see also Peterson & Behfar, 2005).

To illustrate the above proposition, we describe some empirical findings about teams that operate on the flightdeck of commercial aircraft, where both team-level and contextual factors do constrain team processes to a considerable extent and, therefore, limit what the team leader, the Captain, can accomplish. Then we

Table 1. External Constraints on Team Leader Impact.

Performance Process	Team-Level Constraints	Contextual Constraints
Effort	Work <i>inputs</i> are under external control	Noble collective <i>purposes</i>
Performance strategy	Performance <i>operations</i> are organizationally or technologically determined	Strong <i>institutional forces</i>
Knowledge and skill	Work <i>activities</i> are simple and predictable	Skewed <i>labor market</i>

examine the kinds of leadership strategies that remain available to team leaders when they are operating in highly constraining contexts such as that of airline flight operations.

The airline research sought to identify the conditions that help crews develop into self-correcting units – teams that are adept at heading off potential problems, at correcting unanticipated difficulties before they become serious, and at learning from their experiences (Ginnett, 1993; Hackman, 1993). The study involved some 300 crews who flew nine different types of aircraft at seven different airlines in the U.S., Europe, and Asia.

The conceptual model that guided the research posited that two structural features, the design of the flying task and the design of the crew itself, shape how members work together, which in turn determine the degree to which the crew develops into a self-correcting performing unit. The researchers assessed these variables, as well as a number of others, using multiple methods that included cockpit observations as well as surveys and interviews of pilots. Analysis of training and procedure manuals provided data about the technical aspects of the work, and interviews with airline managers and government officials provided an overview of the organizational and regulatory contexts within which crews worked.

The dominant finding of the research was that there was extremely little variation in precisely those crew-level variables that were expected to be most consequential for performance. For example, between-airline differences, on average, accounted only for 3% of the variation in the measures of team structure and process, and the seven carriers' means were, for each of the focal variables, all clustered within half a point on our seven-point scale. Even the measure of Captains' espoused leadership style, confirmed by in-flight observations, also did not vary much across airlines: Between-airline differences accounted for only 4% of the variation in leadership and, once again, means for the seven carriers all clustered within half a point of one another. There were significant cross-airline differences only for measures of the munificence of the organizational context, with pilots at the more economically successful airlines reporting significantly greater job satisfaction than those at

struggling carriers. There was, however, no indication that more satisfied pilots performed better as teams.

In fact, team processes were significantly constrained by three exogenous factors: (a) the standard technology of airline cockpits; (b) government-enforced regulatory procedures and standards; and (c) the individualistic culture of flying. Cockpit technologies have evolved and been refined over the years by designers and engineers at just three (and now two) corporations: Airbus, Boeing, and Douglas. Over time, a generally accepted approach to cockpit design has emerged, which provides the technological platform upon which airline operating practices are erected. The commonalities in that platform overwhelm the differences associated with particular aircraft types and airline organizations.

A second constraint on crew processes is the set of regulatory procedures and standards that have been developed over the years by the U.S. Federal Aviation Administration in cooperation with aircraft manufacturers and airline flight operations departments. The worldwide diffusion of well-considered procedures and standards is both sensible and efficient, but the result has been extraordinary commonality in required operating practices and procedures across airlines and nations.

The third constraint on crew dynamics is the culture of flying that pervades aviation worldwide. That culture, which can be traced back to the earliest days of flying, is highly individualistic in character. This orientation is reinforced throughout a pilot's career — formally (in proficiency checks, in detailed specification of the roles and responsibilities of each member of the flight crew, and in seniority-based bidding and promotion systems), informally (through a status system that accords the highest respect to great stick-and-rudder pilots), and even in the media (which celebrates pilots who show that they have the "right stuff").

Because the cockpit technology, the regulatory environment, and the culture of flying so significantly constrain crew processes, the latitude Captains have to develop their crews into superb performing units is quite limited, and for the reasons previously discussed.⁵ During normal operations (that is, when there are not unexpected weather, mechanical, or air traffic problems) all three of the key performance processes are mostly constrained by external factors. Increased effort by team members could not improve team performance because the crew is constantly responding to inputs from others (gate staff, ground personnel, and ground and air traffic controllers) rather than managing its own work pace. Nor could team-devised improvements in performance strategy help, because almost all operational procedures are driven by strong institutional forces, instantiated in company practices and federal regulations, that specify in detail the actions to be taken by each individual crew member during each phase of flight.⁶ A crew that might wish to develop an operating strategy tailored to

members' special preferences or circumstances would open itself to serious risk of enforcement action. And, finally, knowledge and skill has low salience for team performance because flying procedures are so standardized and technologically controlled that the work itself, during normal operations, is both predictable and routine.⁷

The time when Captains' leadership makes a big difference in crew performance is when things go wrong – for example, a nonroutine mechanical problem, the need to divert to an unfamiliar airport in deteriorating weather, and so on. Under such circumstances, effort, strategy, and member talents all immediately become highly salient for team performance – and therefore, the quality of the leadership provided by the Captain becomes pivotal for how the team performs. Although the standard model of the airline cockpit crew is so deeply rooted in technology, policy, regulation, and the culture of flying that it severely limits Captains' latitude to provide superb team leadership in routine day-to-day flying, it is precisely the quality of that leadership that can spell the difference between success and disaster when things go badly wrong. The same opening of leadership opportunities surely occurs as well for other types of teams when unanticipated events remove or mute the impact of external factors that, under normal circumstances, control team processes and constrain leaders' latitude to make a difference.

Leading Under Constraints

What do team leaders do when they must operate under the kind of constraints that limit the leverage of airline Captains during normal operations? One possibility, of course, is simply to stay on the sidelines and let the team go about its work. Given that most leaders no doubt believe that they are expected to do some actual *leading*, a perhaps more likely possibility is that they will take initiatives intended to help the team perform better, even though there is little likelihood that such interventions will help – and some chance that their behaviors will serve mainly to frustrate both the team and themselves.

There are, however, other options. Research on teams that operate in externally constrained circumstances has identified two different strategies for leading in constraining contexts: (a) elaborating the existing “shell” of the team; and (b) exercising influence upwards and laterally to alter the constraining factors and, thereby, to expand leaders' opportunities to make a difference.

Elaborating the shell. For most teams, there exists a preexisting “shell” for the team – that is, the basic task, roles, and norms that will guide member behavior. For flightdeck crews, the shell includes the properties of the aircraft to be flown, where it is to be flown, the roles of each crew member, basic work procedures such

as checklists, and more. These all are both pre-specified and well-understood by each crew member.

Ginnett (1993) hypothesized that how Captains brought the preexisting shell to life when they first met with their crews might have enduring effects on crew dynamics. He found that what happened in the first few minutes of crewmembers' time together did, in fact, carry forward throughout a crew's life (Ginnett, 1990, 1993). Crews led by Captains who merely took the time in their preflight briefings to affirm the positive features of the crew shell – for example, by reviewing crewmembers' roles, the organizational supports available to the crew, and so on – fared better than those that received no briefing at all or one that undermined the standard shell. Best of all were crews whose Captains went beyond mere affirmation and actively elaborated the shell – identifying, commenting upon, and engaging their crews in discussion of the unique circumstances of the trip that was about to begin. These Captains transformed a highly competent set of individual pilots into an actual flying team. Elaborating the shell does not in itself expand subsequent opportunities for on-line leadership. Yet it can engender a positive collective mood among team members that can foster smooth execution of prescribed work processes (Barsade, 2002), and it can increase the likelihood that the team will be prepared to take action quickly and competently should an unanticipated, abnormal work challenge arise.

Ginnett's findings also demonstrated that the initial meeting of the crew is an especially good time to elaborate the team shell. And, although most work teams do not have structures as detailed and specific as those of cockpit crews, the leader's behavior at the launch of any work team can serve essentially the same function as that of the Captains – namely, to breathe life into the team's structural shell, no matter how rudimentary it may be, and thereby help the team start functioning on its own. If the launch meeting is successful, the team leader will have helped the team move from being just a list of names to a real, bounded social system. The official task that the team was assigned will have been examined, assessed, and then redefined to become the slightly different task that members actually work on (Hackman, 1987). And the norms of conduct specified by those who created the team will have been assessed, tried out (sometimes explicitly but more often implicitly through members' behaviors), and gradually revised and made the team's own.

Exercising influence upwards and laterally. There are, of course, some occasions when a team leader can establish essentially all of the conditions under which a team will work – who is on the team, the design of its task and the technologies with which it will work, norms about team procedures and processes, and so on. A manager who creates a temporary task force to address an immediate organizational problem, for example, would be able to set up and support the task force however

he or she wished. More commonly, however, work teams operate in already-established organizational and technological contexts. And only rarely do front-line team leaders have sufficient authority to alter autonomously any technologies or organizational policies and practices that may be constraining team processes and therefore their own ability to help team members work together well.

Perhaps the most common response of team leaders to constraints on their latitude to lead is simply to soldier on, doing whatever they can under the circumstances. A somewhat more proactive strategy is to elaborate the existing shell, as discussed above, to increase the chances that the team will operate as smoothly and effectively as possible within existing constraints. More proactive still would be to take initiatives to remove or redesign the constraining structures and systems. Doing so, however, requires preparation, patience, and usually a considerable level of political acumen as well.

Preparation and patience. Only the most naive of team leaders would imagine that one can negotiate the relaxation of organizational structures or systems that constrain their teams merely by sending a memo or hosting a meeting with some person in authority. Instead, it takes careful preparation to develop and exploit opportunities for change (Kanter, Stein & Jick, 1992). Preparation is real work. It involves doing whatever can be done to expand and deepen one's knowledge of the kinds of changes that are needed, sharing that vision with others, building a coalition that is ready to provide support, and taking initiatives to align the interests of powerful and potentially skeptical others whose cooperation will be necessary to achieve the changes (see for example, Yorks & Whitsett, 1989).

Preparation almost always must be accompanied by a good measure of patience. Both inertia and emotional resistance are powerful forces inhibiting fundamental organizational change (Jensen, 1993; Miller & Friesen, 1980), and attempts to negotiate change during periods of business-as-usual are unlikely to succeed. Yet it rarely is a long wait for *something* to happen that destabilizes organizational systems and, thereby, makes change possible. A senior manager may leave, for example, or an organizational unit may enter a period of rapid growth or belt-tightening, or a new technology may be introduced that requires abandonment of standard ways of operating. All of these, and more, offer opportunities for change: In effect, the balls go up in the air, providing the prepared team leader an opening for bringing them back down in another, better configuration.

Fundamental change almost never occurs gradually and continuously, with each small step followed by yet another small forward step. Instead, consistent with the idea of punctuated equilibrium, an extended period when nothing much seems to be happening is followed by a period of rapid and multidimensional change, and then by yet another period during which no visible changes are occurring (Gersick, 1991; Romanelli & Tushman, 1994). Wise team leaders, recognizing that change

initiatives during periods of equilibrium have little chance of making much of a difference, watch for the times of punctuation and take initiatives only then.

Political acumen. Even when a team leader is well-prepared and the time is right to initiate change, success depends heavily on the leader's political skills (Kotter, 1985). To illustrate, we draw upon an analysis, reported in detail elsewhere, of how one production manager effectively used political skills to alter organizational systems that were constraining the work processes and performance of his teams (Hackman, 2002, Chap. 5). This team leader, who we will call Hank, was responsible for teams that carried out one phase of a multi-step semiconductor manufacturing process. Hank did have the authority to redesign the work itself, and he did so: He delegated to the teams semi-autonomous responsibility for a reasonably large and meaningful portion of the overall task. But the teams' work processes were impeded both by plant maintenance procedures (which required the team to wait, sometimes for a long time, for a maintenance engineer to appear when a piece of production equipment malfunctioned), and by the relationship between his teams and plant process engineers who designed and fine-tuned the technical aspects of the production process (engineers occasionally would appear unannounced and instruct the team to stop production so they could fine-tune the process, which both frustrated team members and disrupted their production plans).

Hank wanted to do something about both matters, but he did not have sufficient status or power to do so: both maintenance and engineering managers were far better educated and better paid than Hank, and there was no way he could simply tell them to change the way their staff members related to his production teams. Moreover, the production teams ranked low in the plant's status system; the technically trained maintenance staff ranked considerably higher, and the process engineers, with their master's or doctoral diplomas, were the plant's high priests.

But Hank did have a different kind of resource to use to break through the constraints that were troubling his teams. It happened that managers at the plant regularly went into the nearby back country to hunt game, and Hank was perhaps the best-outfitted manager of them all; in the status hierarchy of the outdoors, Hank ranked much higher than did his managerial colleagues. So, early in the deer season one year, he invited the heads of maintenance and engineering to join him on the mountain for a couple of days of hunting. Around the campfire on that trip began a series of conversations that extended over most of a year and that eventually resulted in a fundamental alteration of the relationship between Hank's groups and theirs.

Although the plant status system did not change, both the maintenance and the engineering groups gradually came to understand that a major aspect of their work

was to serve the teams that actually made the products the company sold. Each maintenance staff member became an “associate member” of a small number of production teams (the teams did not require a fully dedicated maintenance person). That person was the first one called when a problem developed with the equipment, was invited to team meetings and social events, and in many instances even tutored team members so they could handle routine technical problems themselves. Some of the engineers also changed how they related to the teams. They did not develop special relationships with any one team, but did refrain from descending unannounced upon a team and stopping production so they could do their own work. That, too, was a fundamental change.

Hank remained within the bounds of ethical conduct (he did not lie or deceive) but exhibited considerable political skill in working with his colleagues to arrange for his teams to have the supports they needed for their work. What he accomplished could not have been achieved merely using his own managerial authority, nor through regular organizational channels. Politically savvy leaders, such as Hank, exhibit persistence and initiative to engage and align the interests of other people who are in a position to provide needed resources or to remove external constraints on team processes and performance (Pfeffer, 1992; Porter, Angle & Allen, 2003; Whetten & Cameron, 1993). And, if one strategy is not working, they already are thinking about what others might be tried, or about a better time to take an initiative, or about other persons or groups who might be able to lend a hand. Team leaders who have such skills and use them well in negotiations with their peers and with senior managers can do much to free their teams from the constraints that may be impeding their performance.

Summary

As previously noted, it is far easier for a leader to undermine team performance than it is to facilitate it, especially when, as is not infrequently the case, both team processes and the leader’s own latitude to lead are constrained by technological and/or organizational factors over which the leader has no direct control. Perversely, it is precisely under such constraints that leaders tend to engage in behaviors such as micro-management, asserting their (limited) authority to direct or dictate aspects of the work that properly should be the team’s own responsibility (Kanter, 1976). Far more constructive in such circumstances is for the leader to launch the team as well as possible (in our terms, to “elaborate the shell”) and/or to turn his or her attention upward and outward, using political skills constructively to redress those aspects of the situation that are making it hard for the team to work well and the leader to lead well.

HOW TEAM LEADERS' DECISIONS SHAPE TEAM PERFORMANCE

Thus far, we have focussed on limitations on team leaders' actions and impact. When there *is* room for the leader to maneuver, then his or her response to three questions strongly shape performance outcomes: (1) what *kind* of team to create; (2) how to *structure* the team; and (3) how and when to actively *coach* the team as it proceeds with its work.

A leader's answers to these questions always is determined in major part by his or her personal mental model of how teams work – that is, what factors most strongly affect how teams behave and what interventions are most likely to help them succeed (Hackman & Walton, 1996; Stockton, Morran & Clark, 2004). Leaders' mental models almost always are of the input-process-output variety, in that they specify the factors that causally shape the group interactions that then drive performance outcomes (Hackman, 1987, pp. 319–322). An example would be a model that identifies homogeneity of membership as causal of harmonious group interaction which, in turn, fosters group productivity. There are at least three problems with these kinds of cause-effect models.

One problem is that the models used by team leaders often are more wrong than right (as in the brief example just above) in that they are inconsistent with research findings about the factors that most powerfully and constructively shape group interaction and performance. Other commonly held but wrong (or at least highly misleading) models include: (a) one should make a team as large as possible, because large teams have more resources to draw upon in carrying out the work, and that helps performance; or (b) team membership should be changed frequently because if it is not members get careless and too forgiving of one another's mistakes, which hurts performance; or even (c) a leader should be careful to use the proper behavioral style, because leadership style is one of the most powerful determinants of how members act and how well they perform.

A second problem is that leaders' mental models often are more implicit than explicit. That is, they are learned relatively early in the leader's life, become habitual, and eventually drop from consciousness. Because they are not subject to deliberate scrutiny, they tend not to be open to correction by data (Argyris, 1993). If, for example, a leader holds the well-learned, implicit view that a team leader must watch a group carefully or members are likely to loaf, and then notes that members are finding creative ways to loaf, the response may well be to watch them even *more* carefully. The possibility that it was the watching that prompted the creative loafing is unlikely even to be considered.

The third problem derives from the conventional cause-effect character of the mental models that guide human behavior, including that of team leaders. In such

models, causes are things that are done by the team leader, and those causes are cognitively linked directly and tightly to hoped-for effects. The action strategies that derive from such models, then, tend to involve attempts to manage team processes more or less continuously in real time. The long-established fact that leader behavior may itself be as much an *effect* of how members are interacting and performing as its cause is not considered (Farris & Lim, 1969; Lowin & Craig, 1968). Nor do such models acknowledge the possibility that one strategy for helping a team succeed is first to get in place the basic structural and organizational conditions that increase the chances that the team will develop autonomously into an effective performing unit, then to launch the team well, and then essentially to get out of the way. Dealing with emergent team problems and opportunities is manyfold easier – and far more likely to be successful – if conditions favorable to team performance are in place than if they are not (Wageman, 2001).

In the pages that follow, we review research and theory that bear on three key decisions that all team leaders must make when they use teams to perform work. Specifically, we explore how existing knowledge can be used to inform models of team leader behavior that are more right than wrong, more explicit than implicit, and more focussed on enabling conditions than on causes and effects.

WHAT KIND OF TEAM TO CREATE?

Although we are aware of no specific research on the question, we suspect that managers significantly overuse teams as a device for accomplishing organizational work. If that is true, it is ironic: managers, not to mention academics, complain at length about the amount of time they waste in committees and other meetings and often are heard to assert that they personally could have accomplished in a few hours, and much better, what a committee on which they served took a month to finish. But when there is a piece of work to be done, managers, again like we academics, quite frequently appoint a group of people to take it on.

The tendency to form teams of various kinds without deliberate thought about whether a team actually is the best design choice is probably multiply determined. For example, managers may hold an implicit but incorrect mental model that “teams produce higher quality output,” in effect endorsing all of the potential benefits of teamwork prominent in the popular managerial literature. Or they may appoint a team to accomplish work in order to share with others accountability for whatever is produced. Or they may use a team to foster the engagement of team members and thereby increase the chances that they will be personally committed to whatever the team produces. All of these, and more, are understandable reasons for using teams to perform work.

There are, to be sure, many potential advantages to team work (for a summary of the positive case for teams, see Leavitt, 1975; for the contrary view, see Locke et al., 2001). The task can be larger in scope, more meaningful, and more consequential than would be the case for any individual performer, and these attributes have been shown to foster high work motivation (Hackman & Oldham, 1980). Moreover, since the work is not parceled out in small pieces among multiple performers, it is easier to establish direct two way communication with the clients of the work which, in turn, can provide performers with regular, meaningful feedback about their performance. Finally, a large team task often requires that the team be composed of individuals with different expertise and specialties, which can foster the kinds of cross-functional exchanges that, occasionally, result in unanticipated insights and syntheses.

Some kinds of tasks, however, should *never* be given to a team. Creative writing, for example, is a task often assigned to a team that should not be. Writing involves bringing to the surface, organizing, and expressing thoughts and ideas that are but partially formed in one's mind (or, in some cases, that lie deep in one's unconscious), and such work is inherently more suitable for individual than for collective performance (Shore, 2002). Even committee reports – mundane products compared to novels, poems, and musical scores – invariably turn out better when written by one talented individual on behalf of a group than by the group as a whole writing in lockstep. The person who does the writing can be helped greatly by the suggestions and criticisms of other team members, to be sure, but the writing itself is better done by one individual. Similarly, the most engaging and powerful statements of corporate vision invariably are the product of a single intelligence rather than a group, set forth by a leader who, after appropriate consultations, is willing to take the risk of establishing collective purposes that lie just beyond what others believe to be the limits of the organization's capability.

One of the first decisions that a leader must make in creating a work team, then, is to make sure that the work to be done actually is appropriate to be performed by a team and, if it is not, to find alternative means of accomplishing it. Leaders who are not trapped by implicit cognitive models or emotional imperatives that are biased toward teamwork weigh carefully the advantages and disadvantages of creating work teams, and take care not to assign to a team work that actually would be better performed by an individual.

If a leader's decision is that a piece of work should, in fact, be assigned to a team, the next set of choices have to do with the *kind* of team that is formed. The choice most likely to be made by leaders who do not explicitly explore alternatives is the face-to-face interacting group. But there are others, each of which is appropriate in some circumstances but not in others. As is seen in Table 2, the kinds of teams most

Table 2. Common Types of Organizational Work Teams.

Level of synchronicity	Responsibility/accountability for outcomes	
	Individual Members	Team As a Whole
Real-time interaction	"Surgical" teams	Face-to-face teams
Asynchronous interaction	Coacting groups	Virtual teams

commonly used for organizational work can be placed in a four-cell table defined by two axes: (a) the degree to which responsibility and accountability for work outcomes lie primarily with the group as a whole versus with individual members; and (b) the degree to which members interact synchronously in real time versus asynchronously at their own pace.

Teams in the upper-left quadrant are what Frederick Brooks (1995) has termed "surgical teams." Responsibility and accountability for outcomes lies primarily with one person, the surgeon, but accomplishing that work requires coordinated interaction among all members in real time as the work unfolds. Brooks, who managed IBM's System 360 programming effort many years ago, argued that programming teams should be structured like a surgical team, with members working closely together but with one individual having primary responsibility for the quality of the output. In surgical teams, the focus of the team work is to ensure that the lead person has all the information and assistance that members can provide. This kind of team is indicated when the work requires an extremely high level of individual insight, expertise, and/or creativity – metaphorically, the writing of a play rather than its performance.

Responsibility for outcomes for teams in the lower-left quadrant, which are known as "coacting groups," also lies primarily with individual members. Each member's work does not depend upon what the others do, and the output of the group is simply the aggregation or assembly of the individual contributions. Because members are performing independently there is no particular reason for them to coordinate their activities in real time. Members of coacting groups typically have the same supervisor, and may or may not work in proximity to one another. A great deal of organizational work is performed by sets of people who are called "teams" but that really are coacting groups – perhaps because managers hope the touted benefits of teamwork can be obtained while continuing to directly manage the work behavior of individuals. Coacting groups are indicated when there is minimal need for interdependent work by group members who can, in effect, operate in parallel.

In what we call "face-to-face teams" members are co-located and work together interdependently in real time to generate an outcome for which they are collectively

responsible and accountable. Face-to-face teams are what leaders usually have in mind when they use the term work team, and most of the existing research literature on team behavior and performance is about such teams. Face-to-face teams are indicated when a high quality product requires coordinated contributions in real time from a diversity of members who have complementary expertise, experience, and perspectives.

In the lower right-hand quadrant of the matrix are “virtual teams,” whose members share responsibility and accountability for the team output but whose members need be neither co-located nor interacting with one another in real time. With the rapid recent advances in information and communication technologies, members are able to interact mainly, and sometimes exclusively, electronically and on their own schedules. Because there is no requirement for co-location, virtual teams can be larger, more diverse, and collectively more knowledgeable than those whose members interact face-to-face. When they work well, such teams can bring widely dispersed information and expertise to bear on the team’s work quickly and efficiently (Townsend, DeMarie & Hendrickson, 1998). Virtual teams are of course indicated when interdependent work is required but it would be difficult or impossible for team members to meet regularly – perhaps because they are located in widely dispersed time zones. As increasing numbers of organizations have logged experience with virtual teams, however, it has become clear that electronic means of communication among members is not a panacea. Researchers are now working to identify the special conditions, beyond the mere availability of sophisticated communication capabilities, that are required for such teams to function well (Baltes, Dickson, Sherman, Bauer & LaGanke, 2002; Gibson & Cohen, 2003; Olson, Malone & Smith, 2001).

Not included in Table 2 is a special kind of team that is not in any traditional sense a bounded work team at all. We refer to such teams as “sand dune teams,” because they are dynamic social systems that have fluid rather than fixed composition and boundaries. Just as sand dunes change in number and shape as winds change, teams of various sizes and kinds form and re-form within a larger organizational unit as external demands and requirements change. Sand dune teams may be especially well suited for managerial and professional work that does not lend itself to the formation of single teams whose members work only on those teams for extended periods. A small analytic unit in the federal government that conducted economic analyses for senior policy makers was organized in this way (Davis-Sacks, 1990a, b). Some unit tasks required research that extended over many months; others required members to track legislation making its way through Congress in real time; and still others were one-shot analyses for clients that had to be completed in a matter of hours by teams created on the fly. Teams in the unit were continuously forming and re-forming as task requirements changed, with

different individuals serving simultaneously on multiple teams that had different tasks, clients, and expected life spans. As was the case for this government agency, the organizational units within which sand dune teams operate are relatively small (perhaps less than 30 members) and have relatively stable membership, which makes possible the development of norms and routines that allow teams to form and re-form smoothly and efficiently. Dynamic teams of this type appear to have great potential, but considerable research is needed to identify the conditions required to support them.

In sum, the term “team” is something of a projective test, used by both scholars and practitioners to refer to a wide variety of different social forms for accomplishing collective work. Additional conceptual and empirical work is required to establish the defining properties of each of these entities, to identify the organizational circumstances in which each one is most appropriate, and to establish the conditions under which each type of team is most likely to function well and perform effectively. In the pages that follow, we address the last of those questions for the work teams on the right-hand side of the Table 2 matrix – namely, teams whose members share responsibility and accountability for collective outcomes.

HOW SHOULD THE TEAM BE SET UP?

In the main, team leaders give insufficient attention to the design of the teams they create, and they are not as thoughtful as they could be about their strategies for coaching those teams. This pattern of behavior is far more optimistic about team dynamics than research evidence warrants, and may reflect an implicit mental model that getting a good design in place does not matter all that much, because, as one manager told us, “the team will work out the details.”

Our research has identified a small number of structural features that do appear to be key to team effectiveness (for details, see Hackman, 2002). In brief, we posit that the chances for team effectiveness are higher when the following conditions are in place: (a) the people responsible for the work are a real team rather than a team in name only; (b) the team has a compelling direction for its work; (c) the team’s structure facilitates rather than impedes collective work; and (d) the organizational context within which the team operates provides support for task activities.

Our findings suggest that one of the most powerful and constructive ways for leaders to help their teams succeed is to get those basic conditions in place, since their presence increases the probability that a team will evolve naturally into an effective performing unit (Hackman & O’Connor, 2004; Wageman, 2001). We

identify below the actions that leaders can take to create the four conditions, and we briefly discuss the research on which those conditions are based. Then, in the following section, we turn to what is known about a fifth condition – namely, how leaders' decisions about hands-on team coaching can help teams take the greatest possible advantage of their structural conditions.

Create a Real Team

Real work teams have three features. First, they have clear boundaries that reliably distinguish members from nonmembers (Alderfer, 1980). Second, team members are interdependent for some common purpose, producing a potentially assessable outcome for which members bear collective responsibility (Wageman, 1999; Wageman & Gordon, 2004). And third, they have at least moderate stability of membership, which gives members time and opportunity to learn how to work together well (Hackman, 2002, pp. 54–59).

Real work teams are intact social systems whose members work together to achieve a common purpose, not teams in name only. They can be small or large, can have wide-ranging or restricted authority, can be temporary or long-lived, can have members who are geographically co-located or dispersed, and can perform many different kinds of work. But if a team is so large, or its life is so short, or its members are so dispersed and out of touch with one another that they cannot work together interdependently, then prospects for team effectiveness are dim.

Articulate a Compelling Direction

A team's direction is the specification of its overall purposes. Direction is critical in energizing the team, in getting it properly oriented toward its major objectives, and in engaging the full range of members' talents. Our research suggests that a compelling direction for a team is simultaneously challenging, clear, and consequential.

Challenging. A well-chosen performance target for a team is neither too demanding (and therefore beyond the team's reach) nor too easy (and therefore not a challenge). Research by Atkinson (1958) and others has shown that individual motivation is greatest when the person has about a 50/50 chance of succeeding on a task, and there is no reason to doubt that the same is true for work teams.

The most energizing statements of direction are those that are insistent about the *end-states* the team is to achieve but that leave open the *means* the team is

to use in pursuing those ends. Those who create work teams should be insistent and unapologetic about exercising their authority to specify end-states, but equally insistent about not specifying the details of the means by which the team is to pursue those ends (Hackman, 2002). That state of affairs fosters energetic, task-focused work (in the jargon of the day, team “empowerment”). Specifying both ends and means mitigates the challenge to team members and, moreover, under-employs the full complement of team members’ resources; specifying neither invites anarchy rather than focused, purposive team work; and specifying means but not ends is the worst of all possible cases.

Clear. Clarity of direction orients a team toward its objective and therefore is invaluable to members as they weigh alternative strategies for proceeding with the work. There are numerous choices to be made in the course of work on almost any task, and decision-making about such matters almost always is facilitated by a clear and concrete statement of direction. Purposes such as “serving customers” or “creating value for the firm,” for example, are so vague and general as to provide little help to a team in developing its performance strategy. Even so, statements of direction also can be *too* clear. When a team’s purposes are spelled out explicitly and completely, there is little room for members to add their own shades of meaning to those purposes, to make sense of them in their own, idiosyncratic ways (Weick, 1993). Sense-making processes are an essential part of coming to “own” a piece of work, and an overly explicit statement of direction can preempt them. Good direction for a work team is clear, it is palpable – and it is incomplete.

Consequential. When a piece of work has clear consequences for team members or for the well-being of other people, members are more likely to engage the full range of their talents in executing the work than they are when group purposes are viewed as of little real consequence (Hackman & Oldham, 1980). For consequential work, there is little likelihood that a team will fall victim to the “free rider” problem in using member talents (that is, people not contributing what they know, or what they know how to do). Also, the chances increase that the team will weight members’ contributions in accord with their actual expertise rather than use some task-irrelevant criterion such as status, gender, or equality of workload in deciding how to deploy member talents.

In sum, a compelling direction for a work team is challenging (which *energizes* members), it is clear (which *orients* them to their main purposes) and it is consequential (which *engages* the full range of their talents). Direction comes first, because everything else depends upon it – how the team is structured, the kinds of organizational supports that are provided, and the kinds of hands-on coaching by team leaders that will be most helpful. Moreover, leaders who create a compelling direction for their teams reduce considerably the amount of

attention that they must give to monitoring and managing team processes in real time.

Establish an Enabling Structure

Work teams often encounter difficulties that stem from not having been set up right. Sometimes a team's structure is over-elaborate (which can create obstacles in getting things done); other times it is under-specified (a common problem for self-managing teams whose creators assume that teams should work everything out on their own); still other times the problem is that the *wrong* structures are put in place. Our research has identified the following three structural features as key in fostering competent teamwork.

Task design. Well-designed team tasks are those that are both well-aligned with the team's purpose and have a high standing on what Hackman and Oldham (1980) call "motivating potential." This means that the team task: (a) is a whole and meaningful piece of work; (b) for which members have autonomy to exercise judgment about work procedures; and that (c) provides members regular and trustworthy data about how well the team is doing. Well-designed group tasks foster high, task-focused effort by team members.

Core norms of conduct. Clear and explicit specification of the basic norms of conduct for member behavior helps members work together in an orderly fashion in pursuing collective objectives. Expectations about acceptable behavior tend either to be "imported" to the group by members or established very early in its life (Bettenhausen & Murnighan, 1985; Gersick, 1988). Moreover, core norms tend to remain in place until and unless something fairly dramatic occurs to force a rethinking about what behaviors are and are not appropriate (Gersick & Hackman, 1990).

Team norms that foster good performance processes actively promote continuous scanning of the performance situation and proactive planning of group performance strategies. Moreover, they clearly identify those behaviors that are "out of bounds" for the team. Clear specification of core norms of conduct, therefore, frees members from spending excessive time discussing the kinds of behavior that are acceptable in the group, and facilitates the development of task performance strategies that are appropriate to the team's task and situation.

Team composition. Well-composed teams are as small as possible given the work to be accomplished, include members with ample task and interpersonal skills, and consist of a good *mix* of members – people who are neither so similar to one another that they duplicate one another's resources nor so different that they

are unable to communicate or coordinate well. A well-composed team ensures that the team has the full complement of knowledge and skills required to achieve its purposes, and makes it possible for members to apply their complementary talents to the collective work.

Provide Contextual Supports

Work teams sometimes find it difficult or impossible to obtain the kinds of organizational supports that are needed for effective performance, especially in established organizations where human resource systems have been professionally designed and fine-tuned over the years to support work performed by *individual* employees. Our research suggests that team performance is enhanced when, in addition to the mundane material resources needed for actually carrying out the work, teams are supported by the following three features of the organizational context.

The *reward system* provides positive consequences for excellent team performance. It is important that performance-contingent recognition be provided to the team as a whole, not to individual members that the leader believes made the greatest contribution to the team product. To do the latter risks introducing disincentives for task-oriented collaboration among team members, which is a common (if unintended) feature of traditional, individual-focused appraisal and compensation systems. The *information system* provides the team with whatever data and projections members need to select or invent strategies for carrying out the work that are fully appropriate for the team's task and situation. The *educational system* makes available to the team, at the team's initiative, technical or educational assistance for any aspects of the work for which members are not already knowledgeable, skilled, or experienced – including, if necessary, the honing of members' skills in working together on collective tasks.

It can be a considerable challenge for leaders to arrange these supports for their teams in established, traditionally managed organizations. State-of-the-art performance appraisal systems, for example, may provide reliable and valid measures of individual contributions but be wholly inappropriate for assessing and rewarding work done by teams. Compensation policies may make no provision for rewarding excellent collective performance and, indeed, may explicitly prohibit financial awards to teams. Human resource departments may be expert in identifying individuals' training needs and in providing courses to meet those needs, but training in team skills may not be available at all. As noted earlier in this chapter, to align existing organizational systems with the needs of task-performing teams can require sophisticated use of a team leader's political skills in

negotiating changes both upward in the organization and laterally across functional boundaries.

HOW AND WHEN SHOULD A TEAM BE COACHED?

Once a team is underway with its work, team leaders must decide – again, whether explicitly or implicitly – how much coaching to provide the team, what kind of coaching to provide, who will provide it, and when it should be provided. Coaching that is well-focused, well-timed, and competently delivered can help a team take the best possible advantage of its performance circumstances (Hackman & Wageman, *in press*; Wageman, 2001).

Focus of Coaching

The role of the coach is not, of course, to dictate to group members the one best way to proceed with the team's work. It is, instead, to help the team minimize its exposure to process losses, and to maximize its chances of capturing synergistic process gains.

The specific kinds of help that coaches can provide for each of the three key performance processes are as follows. For *effort*: helping members: (a) minimize coordination and motivation problems; and (b) build commitment to the group and its task. For *performance strategy*: helping members: (a) avoid relying on habitual routines that may be inappropriate for the task or situation; and (b) develop innovative ways of proceeding with the work that are well-tuned to task requirements. For *knowledge and skill*: helping members: (a) avoid inappropriate weighting of individuals' ideas and contributions; and (b) share their expertise to build the team's repertory of skills. Coaching activities that focus on these task processes have been shown to be significantly more helpful to team performance than those that focus mainly on the quality of members' interpersonal relationships (Woolley, 1998).

Coaching that focuses on the three key performance processes reinforces the impact of the structural and contextual features discussed in the previous section on those same three processes. As is seen in Table 3, specific components of direction, structure, and context also contribute to the level of effort a team exhibits, to the appropriateness of its performance strategy, and to the depth of knowledge and skill members apply to the work.

Challenging, clear, and consequential direction energizes team members, promoting collective effort. It orients members' attention and action, which

Table 3. Structural, Contextual, and Coaching Contributions to Team Performance Processes.

Performance Process	Contribution From			
	Direction	Structure	Context	Coaching
Effort	Challenging	Task design	Reward system	Minimize social loafing, build team commitment
Performance strategy	Clear	Team norms	Information system	Minimize habitual behavior, invent uniquely appropriate strategies
Knowledge and skill	Consequential	Team composition	Educational system	Minimize poor weighting, build pool of talent

provides the basis for making good choices among alternative performance strategies – or for inventing an entirely new one that is uniquely attuned to task requirements and opportunities. And it engages members' full complement of talents as they pursue consequential collective aspirations that are of great consequence for the team or those it serves.

The three components of an enabling structure – task design, core norms of conduct, and team composition – enable a team to take advantage of good direction. A well-designed task promotes member motivation and effort. Norms of conduct that explicitly promote active environment scanning and strategy planning increase the chances that the team will develop and implement a performance strategy appropriate to the task being performed. A well-composed team is small enough, and diverse enough, to facilitate the development and efficient use of member talents.

Finally, a supportive organizational context smooths a team's path to effectiveness. A reward system that recognizes and reinforces excellent group performance fosters high and sustained team effort. An information system that keeps the members up to date about environmental demands and opportunities increases the chance that the team will develop and deploy performance strategies that are both efficient and appropriate. And an educational system

that provides timely training and technical consultation increases the likelihood that the team will bring to the task the maximum possible level of task-relevant talent.

In sum, having a compelling direction, an enabling structure, and a supportive organizational context facilitates good coaching because it permits the team leader to focus mainly on strengthening and reinforcing the impact of the performance-enhancing conditions. When these conditions are *not* present, however, even well-focussed, competently provided coaching is likely to be futile. In a field study of service teams at Xerox, Wageman (2001) found that the team design features just described controlled significantly more variance both in the level of team self-management and in performance effectiveness than did team leaders' coaching behaviors. For team self-management, design features controlled 42% of the variance, compared to less than 10% for measures that assessed the quality of leaders' coaching activities; for team performance, design controlled 37% of the variance, compared to less than 1% for coaching. These findings are consistent with other evidence showing that even highly competent process-focussed coaching by team leaders or consultants cannot prevail when team processes are controlled or constrained by strong structural or contextual forces (Cohen, Ledford & Spreitzer, 1996; Hackman, 1987). It is nearly impossible to coach a team to greatness in performance situations that undermine rather than support teamwork.

Timing of Coaching

The efficacy of coaching interventions depends not just on their focus, discussed above, but also upon the time in the group's life cycle when the team leader chooses to provide them. In recent years there has been an outpouring of research findings on temporal aspects of group behavior, much of which bears directly on team leader decision-making about coaching interventions (see for example, Ancona & Chong, 1999; Gersick, 1988; Ginnett, 1993; McGrath & Tschan, 2004; Moreland & Levine, 1988; Orlikowski & Yates, 2002).

Gersick's findings are particularly relevant for present purposes (Gersick, 1988). In a field study of the life histories of a number of project teams whose performance periods ranged from several days to several months, she found that each of the groups she tracked developed a distinctive approach toward its task as soon as it commenced work, and stayed with that approach until precisely half way between its first meeting and its project deadline. At the midpoint of their lives, almost all teams underwent a major transition. In a concentrated burst of changes, they dropped old patterns of behavior, re-engaged with outside supervisors, and adopted new perspectives on their work. Following the midpoint transition, groups entered

a period of focussed task execution, which persisted until very near the project deadline, at which time a new set of issues having to do with termination processes arose and captured members' attention.

Although Gersick (1989) subsequently replicated these findings in the experimental laboratory for groups that all had same amount of time to complete their task, it remained unclear until recently whether the midpoint transition was prompted externally (i.e. by reference to a clock or calendar) or internally (i.e. by members' sense that about half their allotted time had elapsed). Mann (2001) investigated this question experimentally by having groups perform a one-hour task in a room with a wall clock that ran normally, or one-third faster than normal (i.e. when 30 minutes had passed, the clock showed that 40 minutes had elapsed), or one-third slower than normal (i.e. at the 30-minute mark, it showed 20 minutes). Groups with the normal clock experienced a single midpoint transition, replicating earlier findings. But groups with the faster and slower clocks exhibited *two* such transitions, one at the midpoint indicated by the clock and the other at the actual midpoint of the allotted time, showing that groups pace their work in response to both internal and external cues about elapsed time.

The findings of Gersick and others raise the possibility that the *readiness* of work teams for coaching interventions changes systematically across their life cycles. By readiness for coaching, we mean: (a) the degree to which the issues to be addressed are among those naturally on team members' minds at the time of the intervention; coupled with (b) the degree to which the team as a whole is not at that time preoccupied with more pressing or compelling matters. We posit that coaching interventions made at a time of high readiness have greater constructive impact than those made at other times in the team life cycle. Even competently administered interventions are unlikely to be helpful if they are provided at a time in the life cycle when the team is not ready for them. Indeed, ill-timed interventions may actually do more harm than good by distracting or diverting a team from other issues that *do* require members' attention at that time.

Specifically, there are three times in a team's life when members are especially open to coaching interventions that address each of the three key performance processes: (a) at the beginning, when a team is just starting its work, it is especially open to interventions that focus on the *effort* members will apply to their work; (b) at the midpoint, when the team has completed about half its work (or half the allotted time has elapsed), it is especially open to interventions that help members reflect on their *task performance strategy*; and (c) at the end, when the work is finished, the team is ready to entertain interventions aimed at helping members draw on their experiences to build the team's complement of *knowledge and skill* (for details, see Hackman & Wageman, in press).

Summary

We have seen that the efficacy of coaching interventions depends both on the focus of those interventions (that is, on the key performance processes) and on their being provided at a time when the team is ready to receive and take advantage of them (that is, at the proper time in the team life cycle). Just as important as a team's readiness to receive coaching, however, is the team leader's own readiness to provide it – that is, to take actions that are appropriate to the team's circumstances, to execute those actions competently, and more generally to lead in a way that helps all parties, both the team and the leader, learn from their experiences. We conclude by reviewing the key competencies that are required for excellent team leadership, and with some reflections on the kinds of experiences that can help leaders obtain and develop them.

CONCLUSION: DEVELOPING TEAM LEADERS

There is no one best way to lead a team. Instead, consistent with the principle of equifinality (Katz & Kahn, 1978), team leadership can be accomplished in many different ways, depending in part on the leader's own style, preferences, and skills. That fact does not imply, however, that individual differences among team leaders are irrelevant to their leadership effectiveness (Salas, Kosarzycki, Tannenbaum & Carnegie, 2004). To the contrary, the quality of the team leadership provided depends heavily on: (a) the accuracy and completeness of the leader's mental model of what it takes to help a team succeed; (b) the leader's skill in executing the behaviors required by his or her mental model; and (c) the leader's ability to harvest the lessons of experience to expand and deepen his or her knowledge base and skill set. We address each of these imperatives below.

Leaders' Mental Models

As noted earlier in this chapter, all leaders have mental models that guide their actions. Because these models are abstracted gradually over time from observations, experience, and trial-and-error, they are likely to over-focus on salient features of the leadership situation. For example, the behavior of another leader one has observed, or especially vivid aspects of group interaction processes, or the dispositions of particularly difficult team members, may become more central in a team leader's mental model than is warranted.

In this chapter, we have identified several choices and tradeoffs that may provide a more solid foundation for a mental model of team leadership than do

abstractions from lay observations and experiences. Specifically, we have discussed leaders' choices about when teams are and are not an appropriate design choice for accomplishing work, about the different types of teams that can be created, about the structural and contextual conditions that increase the likelihood of team effectiveness, and about the focus and timing of leaders' coaching interventions.

What has been learned from research on such matters can be taught, and when taught well can deepen and enrich the mental models team leaders use to guide their actions (Gist & McDonald-Mann, 2000). For example, a training course could help team leaders understand the importance for team effectiveness of having a challenging, clear, and consequential direction by using case analyses of effective and ineffective teams, or could teach them about the importance of timing in coaching interventions by analysis of videotapes of team coaches in action. Similar pedagogical devices could be used to teach team leaders about the other choices and tradeoffs we have discussed. If a team leader does not already know what it takes to lead teams well, she or he can learn it – although the learning process is likely also to involve *unlearning* some long-standing implicit views about the features of good team leadership. That unlearning may, in fact, be the harder of the two requirements for developing more accurate mental models, in part because leaders are unlikely to recognize their own areas of incompetence (Dunning, Johnson, Ehrlinger & Kruger, 2003). Moreover, just as institutionalized task strategies come over time to be valued in their own right, leaders' theories of influences on team effectiveness can come to be deeply held and vigorously defended against correction. Helping leaders develop more accurate mental models, then, first requires “unfreezing” their often long-standing convictions through demonstration of the ineffectiveness of those convictions. Working through any subsequent defensiveness and other emotional resistances to new ways of thinking about team leadership can be a far more difficult pedagogical challenge than the teaching of the new concepts themselves.

Skill in Execution

It is not sufficient for those who lead work teams merely to have a reasonably complete and accurate leadership model; they also need ample skill in behaving in accord with the dictates of their model (Gist & McDonald-Mann, 2000). Two kinds of skills are critical to effective team leadership: diagnostic skills and behavioral skills.

Effective team leaders carefully target their interventions, aiming them at those aspects of a team's interaction, its structure, or its context where the contemplated action is both feasible and likely to make a substantial and constructive difference. To choose those intervention targets wisely requires *diagnostic skills*. Effective

leaders are able to extract from the complexity of the performance situation those themes that are diagnostically significant (as opposed to those that are merely transient noise or that are of little consequence for team effectiveness). These themes, which summarize what *is* happening in the group or its context, are then compared to what the leader believes *should be* happening to identify interaction patterns or organizational features that are not what they could be. Only then is the leader in a position to craft interventions that have a reasonable chance of narrowing the gap between the real and the ideal (McGrath, 1962, pp. 13–14).

Beyond their excellence in diagnosing work situations and team dynamics, effective team leaders also are skilled in executing actions that narrow the gap between a team's present reality and what could be. Leaders who have a rich and diverse portfolio of *behavioral skills* are better able to do this than leaders who have but a few things they can do well (for a discussion of the execution skills that may be especially germane for team leadership, see Hackman & Walton, 1986).

Much is known about training procedures that can help people develop new skills or hone existing ones, and one of the things that is known is that skills cannot be mastered by reading books, listening to lectures, or doing case analyses (Campbell, 1988; Goldstein, 1991; Goldstein & Sorcher, 1974). Instead, skill training involves intensive practice, detailed feedback, and reiteration. Training in team diagnostic skills, like training in medical diagnosis, must offer considerable practice in applying conceptual frameworks to specific cases, systematic testing of those cases against the frameworks, and inductive conceptualization from the specific back to the general. Behavioral skills are especially enhanced by the presentation of positive models – that is, people whose behavior illustrates highly competent execution of that which is being taught – adaptive imitation of those models by the learner, and specific behavioral feedback (Decker, 1986). The teaching of diagnostic and behavioral skills is therefore necessarily personalized and for that reason is labor intensive, time consuming, and expensive. But it is a critical ingredient in the mix that makes for effective team leadership.

Learning from Experience

Ideally, a team leader would behave in ways that foster continuous learning – both his or her own, and that of the team – thereby helping the team become ever more capable as a performing unit over time. To accomplish continuous learning, however, requires that leaders overcome the inherently self-limiting character of their existing mental models. Such models can become so well learned and automatic that leaders do not realize the ways or the extent to which an implicit model is guiding their behavior. Moreover, any model is certain to be flawed or

incomplete in some significant way all theories are), and therefore will lead at times to error or failure. Since *implicit* models are not recognized as having contributed to the failure, however, a leader's response is far more likely to be defensive (for example, blaming chance or others for what has happened) than to be learning-oriented (for example, inspecting the assumptions that guided the behavior that generated the failure).

In fact, error and failure provide far more opportunities for learning than do success and achievement, precisely because failures generate data that can be mined for insight into how one's assumptions or mental model of action could be improved. Indeed, the bigger the failure, the bigger the learning opportunity. Overcoming the impulse to reason defensively and thereby to exploit the opportunities for learning that error and failure bring is a significant emotional challenge for team leaders and members alike. To learn from failure requires asking questions that are inherently anxiety arousing (for example, about the validity of deeply-held assumptions or about personal flaws in diagnosis or execution), gathering data that can help answer those questions, and then adapting one's mental models and one's behavior. As Argyris (1991) has noted, such activities are not natural or comfortable acts, and are especially not so for very successful people who have limited experience in learning how to learn from error and failure.

Leading a team well thus requires a considerable degree of emotional maturity in dealing with one's own and others' anxieties. Emotionally mature leaders are willing and able to move toward anxiety-arousing states of affairs in the interest of learning about them rather than moving away to get anxieties reduced as quickly as possible. Moreover, such leaders are able to inhibit impulses to act (for example, to correct an emerging problem or to exploit a suddenly appearing opportunity) until more data have appeared or until the team has reached a point in its life cycle when members are likely to be open to the contemplated intervention. Sometimes it even is necessary for a team leader to engage in actions that temporarily *raise* anxieties, including his or her own, to lay the groundwork for subsequent interventions that seek to foster team learning or change. The impulse to get things taken care of sooner rather than later (for example, when conflicts about how best to proceed with the work become intense) can be almost irresistible. It takes a good measure of emotional maturity for a leader to resist such impulses, and to find ways to deal with one's anxieties and emotions that neither deny their reality and legitimacy nor allow them to dominate one's behavior.

Unlike the more cognitive and behavioral requirements we addressed above, emotional maturity may be better viewed as a long-term developmental task for a leader's life than something that can be systematically taught. Such learning cannot take place in the abstract, or by analyzing a case of someone else's failure. Instead, it involves working on real problems in safe environments with the explicit

encouragement and support of others who themselves also are learning how to deal with emotions effectively. Only to the extent that leader development programs take on the considerable challenge of providing such settings are they likely to be helpful to team leaders both in developing their own habits of continuous learning and in providing a model for members of their teams to pursue continuous learning as well.

NOTES

1. The findings of Lee, Hallahan and Herzog (1996) suggest that the tendency to make dispositional attributions for collective successes and failures may be culturally bound to some extent. These researchers found the frequency of dispositional attributions for sports team outcomes in published newspaper stories to be significantly lower in Hong Kong than in the United States.

2. A team's strategy is the set of choices members make about how to carry out the work. For example, a manufacturing team might decide to divide itself into three subgroups, each of which would produce one subassembly, with the final product to be assembled later. Or a basketball team might decide to use modified zone defense, with one player assigned to guard the opposing team's best shooter. Or a team performing a creative task might choose to free associate about possible solutions in the first meeting, reflect for a week about the ideas that came up, and then reconvene to draft the product. All of these are choices about task performance strategy.

3. These three team-level processes are roughly analogous to the factors that have long been established as the main determinants of work performance at the individual level: effort, ability, and role perceptions (Porter & Lawler, 1968).

4. Specifically, DiMaggio and Powell (1983) identify three processes that foster and sustain institutional isomorphism. Mimetic processes involve organizations turning to others of the same general type, especially those that are viewed as successful, as guides for how their own enterprise should be structured. Normative processes involve the cross-organization diffusion of socially defined "correct" ways of operating. Coercive processes involve agents with legitimate authority (such as government representatives) specifying how certain things *must* be done.

5. It also is true, however, that unconstrained variation in team processes can compromise team or organizational purposes in settings where high operational reliability is essential (Weick & Sutcliffe, 2001). In such cases, constraints on leaders' latitude and impact may yield more benefits than liabilities for collective performance.

6. In the years since this research was completed, airlines around the world have increasingly recognized the importance of team dynamics for safe, efficient flying, and have instituted training in team skills for crewmembers. The culture of flying, however, continues to have a strong individualistic character, and inflight duties continue to be specified mainly at the level of the individual crewmember.

7. One pilot told the researchers "I'm just a bus driver. They tell me where they want the bus to go, and as long as it doesn't break down we get there just fine." In fact, real bus drivers may have more discretion for on-line decision-making about their work processes than do members of airline cockpit crews.

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