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# Culture and Organizational Learning

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*Traditionally, theories of organizational learning have taken one of two approaches that share a common characterization of learning but differ in focus. One approach focuses on learning by individuals in organizational contexts; the other, on individual learning as a model for organizational action. Both base their understanding of organizational learning on the cognitive activity of individual learning. However, there is something organizations do that may be called organizational learning, that is neither individuals learning in organizations nor organizations employing processes akin to learning by individuals. This form of organizational learning can be seen in the case of three small workshops that make "the finest flutes in the world." This essay proposes a perspective on organizational learning, drawing on the concept of organizational culture, that can be useful in understanding the case. This perspective provides a fruitful basis for exploring the above distinctions in both theory and practice.*

**T**wo questions underlie the phrase "organizational learning": Can organizations learn? What is the nature of learning when it is done by organizations? How these questions have been addressed in the organizational learning literature, directly and indirectly, reveals a particular orientation toward the topic. Our analysis of this orientation and discussion of another view are the subjects of this essay.

In writing on organizational learning, most authors (e.g., Argyris & Schön, 1978; Bolman, 1976; Duncan & Weiss, 1979; Etheredge & Short, 1983; Gahmberg, 1980; Hedberg, 1981; Herriott, Levinthal, & March, 1985; Lant & Mezias, 1990; Levitt & March, 1988; March & Olsen, 1976; Miles & Randolph, 1981; Shrivastava, 1983; Sims & Gioia, 1986; Sitkin, 1992; Weick, 1991; Weiss, 1980) have examined how individuals learn in organizational contexts or have explored ways that

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theories of individual learning can be applied to organizations or both. In the first instance, the typical argument is that organizational learning is a particular sort of learning done in organizations by key individuals whose learning is tied to subsequent organizational change. The second approach holds that organizations can learn because they possess capacities that are identical or equivalent to the capacities that individuals possess that enable them to learn—that is, with respect to learning, this approach treats organizations *as if* they were individuals. Despite their differences, both approaches tend to address the questions just mentioned from a common perspective: They typically base their account of the nature of *organizational* learning, explicitly or implicitly, on an understanding of what it means for an *individual* to learn. This grounding in learning by individuals suggests a link between discussions of organizational learning and theories of cognition. For this reason, we call this orientation the “cognitive perspective” on organizational learning.

Although the cognitive perspective has been and continues to be a wellspring of insight and utility, we have found it less useful in efforts to understand a phenomenon that we believe is central to the subject of organizational learning: specifically, where learning is understood to be done by the organization as a whole, not by individuals in it, and where the organization is not understood as if it were an individual (that is, as if it were in some way ontologically a cognitive entity). We hold that learning can indeed be done by organizations; that this phenomenon is neither conceptually nor empirically the same as either learning by individuals or individuals learning within organizations; and that to understand organizational learning as learning by organizations, theorists and practitioners need to see organizations not primarily as cognitive entities but as cultural ones.

Our intention here is to outline a “cultural perspective” on organizational learning (in keeping with recent attention to organizational culture; e.g., Frost, Moore, Louis, Lunderberg, & Martin, 1985, 1991; Schein, 1985). We see this perspective as a complement to, not a substitute for, the cognitive perspective. From the cultural perspective, we argue, the question, “Can organizations learn?” is not an epistemological one about cognitive capacities, but an empirical one about organizational actions—to which the answer is, yes. Further, we hope to show that the second question, “What is the nature of learning as done by organizations?” can be addressed from the cultural perspective

in a way that avoids some specific conceptual difficulties found in the cognitive perspective, while also suggesting some new avenues for exploration.

The theoretical argument presented here has grown out of our analysis of three small companies manufacturing flutes. In the sections that follow, we describe what we see as some of the conceptual difficulties inherent in the cognitive view, discuss the meanings of the concept of organizational learning, and outline a cultural perspective on organizational learning, which we illustrate through the case example of the flute companies.

### THE COGNITIVE PERSPECTIVE

Most of the literature on organizational learning has addressed the topic from a perspective that entails various concepts traditionally associated with cognition. Many authors, for example, have used the notion of learning from mistakes, a concept central to cognition, to address organizational learning both at the level of the organizational aggregate and at the level of key actors within an organizational setting. In this vein, Etheredge and Short (1983) see governmental learning as a reflection of increased intelligence and behavioral effectiveness: If government behaves more effectively, then we may say that it has learned, often from its own mistakes. Lant and Mezias (1990) hold that “an organizational learning model suggests that the impetus for organizational change is triggered by performance below aspiration level” (p. 149). Some theories of cognition are modeled on principles of systems theory; reflecting this, some authors have understood organizational learning to be tied to the detection and correction of errors linked to a change in course or improved performance. For Bolman (1976) and Argyris and Schön (1978), organizational learning is error detection and correction geared to improving the effectiveness of individual behavior in organizations. Similarly, Sitkin (1991) refers to “the action/failure/feedback/correction cycle” in making the provocative argument that organizations may learn more effectively through “strategic failure” than through a singularly success-oriented strategy of failure avoidance.

However, there are problems inherent in transferring to organizations concepts whose origin is cognition by individuals. These problems, which come both from the nature of cognition and from its application to organizations, are rarely acknowledged or ex-

plored. For example, the sorts of activities that we conventionally and unproblematically associate with cognition in individuals (acquiring knowledge of history, mastering skills useful in fixing machines, solving geometric problems, gaining facility at programming or sailing or singing, etc.) are neither conventionally nor unproblematically associated with organizations. Further, it is not readily apparent how the sort of organizational activities commonly described in discussions of organizational learning (e.g., the rearrangement of departmental structure, the adoption of new technologies or strategies, etc.) are in fact activities that can meaningfully be called learning, particularly learning on the part of the organization itself.<sup>1</sup>

A fundamental problem derives from the fact that it is impossible to *see* cognition taking place in the actions of organizations. This has led to the common assertion in the literature that organizational learning has taken place when actions by organizationally key individuals that are understood to entail learning are followed by observable changes in the organization's pattern of activities. In this vein, Miles and Randolph (1981), drawing on Simon's work, define organizational learning as individuals' insights reflected "in the structural elements and outcomes of the organization itself" (p. 50).

Having accepted generally the inference that organizational learning entails observable organizational change linked to individual cognition, the cognitive perspective splits into two major approaches. One approach has focused on individual learning in an organizational context. The other has used individual learning as a model for understanding certain types of collective organizational activity. Most authors have followed one approach or the other; a few have explored both.

The first approach treats organizational learning explicitly as learning by individuals within an organizational context. For example, March and Olsen (1976) focus on the experiential learning of individuals within organizations. Argyris and Schön (1978) examine the actions of members of organizations, whom they see as agents for the organization. Etheredge and Short (1983) treat governmental learning, in large part, as learning by individual politicians, officials, advisors, analysts, bureaucrats, and other decision makers within government agencies. Weiss (1980) similarly presents societal learning as the accretion over time of government officials' knowledge, which is transferred into the policy-making process. Simon (1991) aligns

himself with this approach quite definitively in stating, "All learning takes place inside individual human heads; an organization learns in only two ways: a) by the learning of its members, or b) by ingesting new members who have knowledge the organization didn't previously have" (p. 125).

Some authors state that they take organizational learning to be different in some sense from individual learning. Fiol and Lyles (1985), in a review of the literature, found this stance to be one of the points of consensus among theorists. Nonetheless, the accounts and illustrations offered by these authors typically describe episodes of individual learning that occur within organizational contexts. For example, Bolman (1976) treats organizational learning as "learning experiences for key decision makers." For Shrivastava (1983), organizational learning "occurs through the medium of individual members" and involves the development of better interpersonal skills. In a broader sense, for Sims and Gioia (1986), "organizational social cognition" within the "thinking organization" essentially concerns understanding "our own cognitive processes" and "how other people think" (p. x). Organizational learning as approached in such cases, although conceived of as different from individual learning, is nevertheless described as a form of learning by individuals; it is not treated as learning by organizations.<sup>2</sup>

The second approach develops theories of organizational action largely by applying to organizations concepts that are commonly found in models of individual learning. Hedberg (1981) and Gahmberg (1980), for example, extend stimulus-response models of individual learning to explain organizational selection of stimuli and choice of responses. For Weick (1991), the traditional "defining property of learning is the combination of same stimulus and different response," but the fact that this "is rare in organizations" leads him to consider how organizations might employ stimulus-response learning in "nontraditional ways" (p. 117). In a fashion that suggests the themes of adaptation and conditioned response from behaviorist psychology, Cyert and March (1963) see organizational learning as entailed in organizational adaptation that "uses individual members of the organization as instruments" in a way that constitutes "adaptation at the aggregate level of the organization" (p. 123). For them, organizational learning is understood to occur when an organization, in response to "an external source of disturbance or shock," selects "decision rules" that lead the organization "to a pre-



ferred state" (p. 99). Lant and Mezias (1991) add the notion of learning to the language of systemic adaptation in describing "an ecology of strategic learning" and arguing that "organizational change is governed by an experiential learning process" within which entrepreneurship is seen as a "search activity" that can bring about "change to the core dimensions of organizational activity" (p. 148). Duncan and Weiss (1979), meanwhile, present a cognitive model of the production of organizational knowledge: Individual decision makers possess specialized knowledge about the organization, which is shared through paradigmatic frameworks that generate a set of beliefs that provide a way of seeing the organizational world.<sup>3</sup> Similarly, in applying the notion of memory to organizations, Levitt and March (1988) argue that "organizational learning depends on features of individual memories . . . but our present concern is with organizational aspects of memory" (p. 326).

It is clear that individuals do indeed learn within the context of organizations, that this context influences the character of that learning and, in turn, that such learning can have operational consequences for the activities of the organization. Also, there is nothing inherently invalid in applying models of individual learning to organizations. A great deal of important work has come out of these efforts. It is not clear, however, either conceptually or empirically, that such instances of learning constitute learning by organizations. And because it is not obvious, a priori, that organizations are cognitive entities, in drawing on individual cognition as a way of understanding organizational phenomena, we must take care not to lose sense of the "as if" quality of the metaphor, forgetting that organizations and individuals are not the same sorts of entities. The nature of the difference, as we will argue later, bears on how each can be understood to learn.

In both approaches, the application to organizations of a model of learning based on cognition by individuals entails, in our view, at least three substantive problems. First, it raises a set of complex arguments concerning the ontological status of organizations as cognitive entities—specifically, arguments about how organizations exist and how the nature of their existence entails an ability to learn that is identical or akin to the human cognitive abilities associated with learning. In other words, because the cognitive perspective adopts its understanding of learning from theories about individuals, it follows that to discuss cognitive organizational learning, one

must first show how, in their capacity to learn, organizations are like individuals.

Further, because theories of cognition already carry with them an understanding of learning, many who have adopted the cognitive perspective on organizational learning have seen *organizations*, although not always *learning*, as the term calling for explanation. In this vein, Argyris and Schön (1978) begin their discussion of organizational learning with the section, "What is an organization that it may learn?" Others (e.g., Duncan & Weiss, 1979; Gahmberg, 1980) similarly begin with definitions and discussions of the concept of organization that, in part, constitute arguments concerning the ontological status of organizations with respect to learning. Morgan (1986) looks at how organizations can be understood to be brains (metaphorically at least) and how this might help us design organizations "so that they can learn and self-organize in the manner of a fully functioning brain" (p. 105). Sandelands and Stablein (1987), meanwhile, consider the existence of the "organizational mind" as a way of understanding an organization's ability to engage in "ideational processes" or a "commerce of ideas" (pp. 138-139). The idea of attributing an ontological status to organizations as cognitive entities, which has been fundamental to the views of the cognitive perspective, has often proven to be conceptually as problematic as it is provocative: What has been taken as self-evident in the case of individuals has proved a lightning rod for debate when applied to organizations. Although this debate has produced many challenging and useful insights, it remains fundamentally unresolved.

Second, the study of individual learning is itself complex, in flux, and bounded by its own theoretical constraints. Adopting the perspective (or the metaphor) of cognition for the study of organizational learning has yielded many insights; yet these insights are limited by what we understand about learning from the field of individual cognition. Although much work is being done that advances our understanding of individual cognition, the absence of an established, commonly accepted model of individual learning leaves its useful application to organizations inherently problematic. Linking our understanding of organizational learning to cognitive theory, at the very least, obligates us to account in organizational terms for developments in that theory or to explain why this is not necessary.

Apart from the problems posed by debates concerning organizational ontology and the nature of theories

of individual learning, the cognitive perspective presents a third difficulty: its proposition (often implicit) that learning for organizations is the same as learning for individuals. This is a difficulty for several reasons. In a fundamental sense, it does not follow from anything essential about organizations or about learning that learning must be the same for individuals and organizations. Nor is it clear how two things that are in so many ways so obviously different as individuals and organizations could nonetheless carry out identical or even equivalent activities. Further, even if it were shown that organizations and individuals are ontologically equivalent in the possession of cognitive capacities required for learning, it would not necessarily follow that they would both learn in the same fashion or, as Weick (1991) notes, that the results of their learning would be the same. Indeed, even among individuals, we can observe significantly different "learning styles."<sup>4</sup> This issue has been left largely unaddressed by theorists of organizational learning.

There is a further problematic point that is found in many parts of the literature that derives, we believe, in large measure from its systems origins. Although the idea is not inherent in the concept of cognition itself, organizational learning has typically been linked to organizational change and, particularly, to increased effectiveness. Many authors share the view (or assumption) that "learning will improve future performance" (Fiol & Lyles, 1985). Conversely, the absence of observable change has commonly been taken to mean that learning did not take place or, in fact, that learning was "impeded" (Jenkins-Smith, St. Clair, & James, 1988).

Although change is often associated with individual learning, it seems clear that some forms of learning entail little or no change that is meaningfully discernible, particularly in observable behavior. For example, maintaining the mastery of a technique may involve perceptual or kinesthetic learning that need not involve behavioral change or any observable change in ability—as when a dancer, accommodating an injury, learns new ways to perform the identical movements that were performed before the injury. Likewise, we can learn new knowledge that is not linked at all to behavioral change. One may, for example, learn a phone number and never use it or bring it to mind again. Nor does learning always produce increased effectiveness or improved performance, as the learning of faulty skills or self-destructive habits makes all too clear.

We infer from what has been written in the organizational learning literature a normative concern with learning as change and/or improvement, which typically ignores other notions of learning. The focus on overt behavioral change inherent in the experiments of cognitive psychology may in part account for this tendency to equate learning with change. We will argue, however, that change does not always accompany learning by organizations, and moreover, equating learning with change may leave out much of interest.<sup>5</sup> Here, we turn to an exploration of learning by organizations.

### KNOWING AND LEARNING BY ORGANIZATIONS

Organizations act. The Boston Celtics play basketball. The Concertgebouw Orchestra performs Mahler symphonies. These are activities done by groups; they are not and cannot be done by single individuals. A single basketball player cannot play a game of basketball by herself; only the several players, together as a team, are able to carry out the team's strategies, moves, and style of play. A violinist alone cannot perform Mahler's Third Symphony; the execution of the phrasing, dynamics, and tempi of the piece requires the collective actions of the orchestra as a group.

Further, the ability to play basketball games or perform symphonies, we argue, is only meaningfully attributed to a group, not to individual players. It is not meaningful to say that the ability to play Mahler symphonies is possessed by an individual musician, because no individual person can perform symphonies. An individual musician possesses the ability to carry out merely a portion of what only an orchestra can do. Moreover, musicians can act on that ability only in the context of the orchestra: They may each play their parts alone (to practice, say), but to perform the symphony they must participate in an activity of the orchestra.

Although it has become more common to attribute abilities to groups, there has been an equally common reluctance to attribute to them any form of knowledge or knowing associated with those abilities: Traditionally, it has been accepted, usually unquestioningly, that matters of knowing are exclusively matters about what or how individuals know. This reluctance is consistent with the cognitive perspective's origins in theories of individual cognition. From this perspective, therefore, it would typically be argued that it is

the knowledge of all the individuals in an orchestra taken together that constitutes the know-how behind the ability to perform symphonies—and thus it is not know-how possessed by a group. This argument has two shortcomings. First, it implies that the performance of a symphony is meaningfully reducible to the playing of 100 different parts by individuals. This is an implication that belies the experiential reports of musicians and their audiences, and it can never be meaningfully tested because the performance of symphonies is always a group activity. Second, it is conceptually unsound to attribute to individuals know-how that no individual can demonstrate. Just as the ability to perform symphonies is meaningfully attributed only to a group, so is possession of the know-how necessary to do so. Removed from the traditional assumptions of the cognitive perspective, the same reasoning that supports the concept of group abilities would also suggest the concept of group know-how.

In this sense, the statement, "The Celtics know how to play basketball" is meaningful as a statement about organizational knowing. Other "ensembles" that are more commonly thought of as organizations, such as IBM or Saab or the U.S. Environmental Protection Agency, similarly know how to do what they do. The know-how entailed in producing a computer, a Saab 9000, or a set of standards for air quality resides in the organization as a whole, not in individual members of the organization.<sup>6</sup> These are propositions about organizational knowing.

Learning is related to knowing; in one sense, it is the act of acquiring knowledge. Thus the knowledge demonstrated by the Concertgebouw when it plays a symphony or by Saab when it produces a car can be understood as having been learned. The individuals in the organization were not born with the ability to perform their parts of these activities, nor has the organization always possessed these abilities. What can be said of the abilities can be said of the know-how associated with them: It has to be acquired; it has to be learned. The statement, "The Celtics know how to play basketball" suggests something about organizational learning as well as organizational knowing. Organizational learning, then, describes a category of activity that can only be done by a group. It cannot be done by an individual.

In this respect, organizational learning, as we use the term, refers to the capacity of an organization to learn how to do what it does, where what it learns is possessed not by individual members of the organiza-

tion but by the aggregate itself. That is, when a group acquires the know-how associated with its ability to carry out its collective activities, that constitutes organizational learning.<sup>7</sup>

From the perspective of this understanding, the foregoing examples of organizational activities are descriptions of things that organizations as collectives actually do that can be meaningfully understood as learning. The answer to our initial question is, yes, organizations do indeed learn. We acknowledge that the term *learning* is borrowed from the realm of individual behavior: When individuals demonstrate a new ability, it is meaningful to assert that they have acquired the know-how associated with that ability. However, we believe that the similarity between individual and organizational learning ends there. We do not infer that because there is an apparent likeness in activity, the underlying processes are necessarily alike. In particular, we argue that what organizations do when they learn is necessarily different from what individuals do when they learn. Specifically, we believe that organizational learning is not essentially a cognitive activity, because, at the very least, organizations lack the typical wherewithal for undertaking cognition: They do not possess what people possess and use in knowing and learning—that is, actual bodies, perceptive organs, brains, and so forth. To understand organizational learning, we must look for attributes that organizations can be meaningfully understood to possess and use, that can be seen to give rise to the sorts of activities outlined in the organizational learning examples above. This is a central concern of the arguments that follow.<sup>8</sup>

At this juncture, three additional points can be raised. First, in our view, organizational learning, like individual learning, does not necessarily imply change, particularly observable change. An organization can, for example, learn something in order *not* to change. Second, organizational learning need not, as the systems notion of feedback would suggest, be a response to an environmental stimulus (such as error detection). The impetus for learning can also come from within the organization itself. Third, in a significant measure, organizational knowledge or know-how is unique to each organization. That is, two organizations performing the same task do not necessarily perform it identically. Even two very similar organizations know how to do somewhat different things. The Celtics do not play basketball in the same way as do the 76ers. The Concertgebouw and the New York Philharmonic perform the same Mahler Sym-



phony differently. IBM and Apple have different management styles, although both manufacture computers. Organizational knowing and learning are always in some part intimately bound to a particular organization.

In the case analysis that follows, we examine in greater detail how understanding organizational learning in terms of organizational culture helps address the issues we have identified so far. Organizational culture has been defined and treated in many ways (see, for example, Frost et al., 1985, 1991; Ouchi & Wilkins, 1985; Schein, 1985; Smircich, 1983). For our purposes at hand, we define culture in application to organizations as a set of values, beliefs, and feelings, together with the artifacts of their expression and transmission (such as myths, symbols, metaphors, rituals), that are created, inherited, shared, and transmitted within one group of people and that, in part, distinguish that group from others. This definition is in keeping with an interpretive approach to human action and social reality (see, for example, Berger & Luckmann, 1966; Mead, 1934; Taylor, 1979).<sup>9</sup>

Such an approach to organizational learning builds on the following. Human action includes the ability to act in groups. Over time and in the course of joint action or practice, a group of people creates a set of intersubjective meanings that are expressed in and through their artifacts (objects, language, and acts). Such artifacts include the symbols, metaphors, ceremonies, myths, and so forth with which organizations and groups transmit their values, beliefs, and feelings to new and existing members, as well as in part to strangers. As new members join the group, each acquires a sense of these meanings through the everyday practices in which the organization's artifacts are engaged. Through such "artifactual interactions," shared meanings are continually maintained or modified; these are acts that create, sustain, or modify the organization's culture.<sup>10</sup>

The concept of culture, because it takes human groups as its subject, allows us to begin with the empirical observation that a group of people can and does act collectively—and can do so in ways that suggest learning. The concept of organizational learning, then, is not encountered as a theoretical hypothesis (Can organizations learn?) to be tested and proved. Rather, the concept is addressed through empirical observations that call to be understood. The ontological problem of the existence of an organization as a cognitive entity is, thus, not encountered. The focus of the cultural theorist concerned with organizational learning shifts to the second question, "What

is the nature of learning when it is done by organizations?" and the task is to develop concepts with which to describe how a group of individuals acting collectively, as an organization, does those things that might meaningfully and usefully be understood as learning.

### THE FINEST FLUTES IN THE WORLD: ORGANIZING CRAFTSMANSHIP

Most of the finest flutes produced in this century have been made in a style reminiscent of old world craftsmanship by three small workshops in and around Boston, Massachusetts: the Wm. S. Haynes Company; Verne Q. Powell Flutes, Inc.; and Brannen Brothers—Flutemakers, Inc. Haynes, the oldest of the three, was founded in 1900. In 1927, Verne Q. Powell, who was shop foreman for Haynes, left the company to make flutes on his own. Two of Powell's mastercraftsmen, Bickford and Robert Brannen, founded Brannen Brothers in 1977.<sup>11</sup>

Instruments made by these three companies have been regarded by flutists internationally as the "best flutes in the world." The idea of excellence has been central to the identities of all three companies. Until the early 1980s, when changing economics and a growing challenge by large-scale, highly tooled Japanese flute manufacturers affected demand, it was common for the Boston companies to have a 5-year backlog of orders.

The companies themselves are rather small, each having begun with 1 or 2 people and expanding slowly to typically about 25. Apart from a secretary or a bookkeeper, all people in the companies work on the instruments. In each workshop, the owners and/or managers (3 to 4 people in each) may have offices and administrative work to do, but each also spends time, in some cases the bulk of it, at a workbench.

The companies are also similar in terms of physical layout. There are areas where work is done with die machines or casting equipment and other areas for cleaning and polishing or storage. But the central area of activity at each shop consists of rows of workbenches stocked mostly with hand tools where flutemakers sit side by side doing the delicate mechanical and aesthetic work that makes the instruments what they are.

The flutemakers themselves are in many ways a varied lot. The range of ages has been wide, yet most of the flutemakers have been in their 20s or 30s. Until recently, they were almost exclusively men; now, at



Brannen Brothers, for example, about 40% are women. Some flutemakers are musicians; very few have ever been flutists. A growing number have been to college. Many have hobbies or previous professions that complement the detail and finesse of their work with the flutes (silversmithing, fine woodworking, a "fanatical interest" in high-end stereo equipment, or specialty car engines). Many—for reasons unknown—are astigmatic.

In all three shops, flutes have been made following similar procedures and organization of production. The tube that becomes the body of the flute is made outside the shop to each company's precise specifications. Screws and steel rods for the key mechanism and strips of silver for various parts are also brought in. The parts are collected, carefully inspected, and given an initial polishing. Next, the body is formed. Tone holes are put into the tube, and the structure that holds the key mechanism is soldered on. The key mechanism is assembled and precisely fit to the body. Then, pads are put into the keys and the mechanism adjusted by hand to remarkably fine tolerances. Meanwhile, the head joint and embouchure hole are put together and delicately hand finished. Finally, the flute is polished, packed up, and shipped to its new owner.

At Powell (which we will use here as the primary example), it would take about 2 weeks to make an instrument from start to finish. At all times there would be several flutes at each step of manufacture. Typically, each flute would be worked on by several flutemakers in succession. Each individual craftsman, typically skilled in only a few aspects of the process, would work on his part of a flute (or a small batch) until that work was finished, whereupon the flute (or batch) would be handed on to the next craftsman. The second flutemaker would base her work on the former's. And so on down the line. If at any point a flutemaker felt that earlier work was not right, that person would return the piece to the appropriate prior flutemaker to be reworked to their mutual satisfaction.

In describing why a piece might need to be reworked, a flutemaker would typically make only cryptic remarks, such as, "It doesn't feel right" or "This bit doesn't look quite right." The first flutemaker would then rework the piece until both were in agreement that it had "the right feel" or "the right look." In working on a portion of the key mechanism, say, one flutemaker might tell the previous one that a key "doesn't feel right; it's cranky." This would lead the other to check the key over until he got a sense of how the feel was off. Ultimately he would trace the problem down, for example, to a need for adjusting the way the

key fit into the mechanism or, perhaps, to a need to reset the tension on the spring that operates the key. The language in such interchanges is inexact in no small part because many of the actual physical dimensions and tolerances of the flutes have never been made explicit; and many that have been are not commonly referred to in explicit terms by the flutemakers in daily practice. Yet the extremely precise standards of the instruments, on which the flute's ultimate style and quality depend, have been maintained through just these sorts of individual and mutual judgments of hand and eye.

This process has resulted in two very important things. First, it has made sure that at any one step of manufacture not only had work been done properly with respect to the work each flutemaker needed to accomplish, but it was also done properly from the perspective of the next flutemaker who needed to base her work on that of the former. The second result has been that when a flute reached the final inspection at the end of manufacture, almost without exception, it required no further work. The hand-to-hand checking of the flutes has amounted to a very successful, informal quality control system.

Apprentices have typically been trained by sitting at a workbench to do one of the steps of manufacture as would any other flutemaker. As an apprentice finished each piece of work, he would show it to a mastercraftsman who would judge it, just as she would judge the work of any other flutemaker: If it did not feel right or look right, it would be handed back to the apprentice to be reworked until it did. Eventually, the apprentice would become a judge of his own work (this would be a mark of the end of his apprenticeship). Similarly, he would become able to judge work by other flutemakers on flutes coming to him for work and be able to recognize when they needed to be taken back because the look or feel was "not right." In this way, at one and the same time, an apprentice would both acquire a set of skills in flutemaking and become a member of the informal quality control system that has unflinchingly maintained the style and quality of these instruments.

No two Powell flutes are exactly alike. Each has its own strengths and quirks, its own personality. Yet a knowledgeable fluteplayer would never fail to recognize a Powell by the way it feels and plays, nor would she confuse a Powell with a Haynes or a Brannen Brothers. Each Powell flute, although unique, shares an unambiguous family resemblance with all other Powells. This family resemblance is the essence of Powell

style and quality. And although each Powell has its own personality and aspects of the flute's physical design have been changed from time to time, the Powell style has been maintained. In this sense, a Powell flute made 50 years ago plays and feels the same as one made recently.

This principle is equally true of Haynes and Brannen Brothers flutes. Each company has developed a distinctly recognizable product, transcending individual variations among flutes and design changes over time. Further, this constancy of style and quality has been maintained through the years, even though each instrument has typically been the product of several flutemakers and the workshops have passed through several generations of flutemakers.

### ORGANIZATIONAL LEARNING IN THE FLUTE WORKSHOP

Like playing basketball or a symphony, the knowledge needed to make these flutes of the finest quality resides not in any one individual, but in the organization as a whole. The organization was not "born" with that knowledge; it had to learn it.

We may say that each of the Boston companies, as an organization, knows how to make flutes. Indeed, the know-how required to make one of their instruments from start to finish rarely has been known by a single flutemaker; typically, producing a flute has been a group effort.

Each organization has learned how to produce a flute. The knowledge has been learned collectively, not individually. It is true that each flutemaker knows how to perform his or her individual tasks; but the know-how required to make the flute as a whole resides with the organization, not with the individual flutemaker because only the workshop as a whole can make the flute. This is demonstrated in the fact that when flutemakers have left one of the workshops, the know-how needed to make the flute has not been lost to the organization, as evidenced in the sameness of play and feel of instruments produced by that workshop over the years. The workshop has continued to make flutes of the same quality and style as before because it—the organization, not the individual—possesses the know-how and the ability to make its own particular style of instrument. Typically, neither the flutes nor the way they are made have changed when flutemakers have left one of the workshops.

Moreover, the organizational know-how entailed in flutemaking at each workshop is, in a significant measure, different from that at the others. Although all three know how to make flutes and all follow similar production operations, each makes its own particular flute, one with a unique, unambiguously recognizable style. Thus part of what each workshop knows is unique to it.

Further, such organizational know-how is not meaningfully transferable from one shop to the next; it is deeply embedded in the practices of each workshop. A Haynes flutemaker, for example, could not walk into the Powell workshop, sit down at a bench, and begin making Powell flutes. Over the years, several flutemakers have, in fact, moved from one company to another, and in every instance they have had to be partially retrained, even to do the same jobs they were doing at the other company. They have had to learn a new "feel," a different way of "handling the pieces." Overall, this know-how has been learned not by being given explicit measurements and tolerances, but tacitly, in the hand-to-hand judgments of feel and eye, by working on flutes and having that work judged by the other flutemakers. These judgments are typically expressed in terms of the right look or right feel that are unique to that workshop.

What such a flutemaker knows can be learned only within the context of a specific workshop and only by joining in the collective activity of the workshop as a whole, making its particular instrument. The knowledge of how a finished mechanism, say, should feel can be used only in that workshop. Although each individual possesses the know-how needed to do her portion of the work on the flute, she cannot use that knowledge to produce an entire flute on her own, nor could she produce quality work in the style of a particular workshop except in that particular organizational context.

In this lies an example of organizational learning that does not require overt change on the part of the organization. As a new member, for example, is socialized or acculturated into the organization, learning by the organization takes place: The organization learns how to maintain the style and quality of its flutes through the particular skills, character, and quirks of a new individual. The organization engages in a dynamic process of maintaining the norms and practices that assure the constancy of its product. This is learning in a sense quite different from change-oriented learning: It is the active reaffirmation or maintenance

of the know-how that the organization already possesses. We argue that such organizational learning is better explained from a cultural perspective that assumes the group and group attributes as its unit of analysis than from an individually oriented cognitive perspective. We will expand on this reasoning shortly, after considering an example of explicit change at Powell.

### POWELL AND THE COOPER SCALE

Along with more routine changes in personnel, one exceptional episode at Powell reflects how an innovation in product design was also a means of maintaining the organization's identity.

In 1974, Powell became aware of a new scale (the particular arrangement and size of a flute's tone holes that determines the way the flute plays "in tune"). Albert Cooper, an independent English flutemaker, had begun making flutes with a scale he had developed himself. Although he produced only a few flutes a year, several flutists had come to favor his scale over any other. Word of the Cooper scale soon came to Powell's attention, and Powell got in touch with Mr. Cooper. Powell's assessment of the Cooper scale led them to consider the possibility of making a Cooper-scale Powell flute.

For Powell, this possibility was not only a matter of the design of the instrument; it also meant that the workshop would have to accommodate something "new and foreign" within what it knew of itself and of flutemaking. What made this possibility challenging for Powell was that the design of the existing flute—already "the best damned flute in the world," as Powell's president at the time put it—was an integral part of the workshop's identity. Its scale had been developed by Mr. Powell himself and was felt to be an intimate part of the Powell flute. The flutemakers were concerned that in changing the scale, they could be changing the style of the Powell flute, and that would be, in their words, "totally unthinkable."

Their concern seems to have been that adopting a different scale would amount to changing the identity of the company. Yet they had been impressed with the Cooper scale, as had a growing number of flutists. The dilemma was summed up when one flutemaker asked, "If the Powell flute is the best there is, and we want to keep it that way, does that mean we need to change when something new and maybe better comes along?"

The debate continued for some weeks. A prototype Powell flute with a Cooper scale was made. Questions were raised and concerns discussed: Is a Powell flute with a Cooper scale still a Powell flute? Can we make a new scale and still be the same company? Can we change and not let go of quality?

The physical changes in design that the adoption of the Cooper scale would entail were actually quite small. In fact, to the eye, the flute with the new scale and those with the old were very hard to tell apart. Nor would the change be any great threat or challenge to the day-to-day aspects of craftsmanship: Virtually every bit of work could be done without noticing which scale a particular flute was built to. Even with respect to tooling, the change would be a minor matter. For example, once dies were made for the new scale, they could be used in place of the old dies, and work could proceed as usual.

Finally, Powell adopted the Cooper scale. By unanimous vote, the company decided to offer its customers the Powell flute with the new scale. But only as a special option: They would continue to make the Powell flute with the original scale, "and we will do so," Powell's president said, "until we die."

Within a few months, Powell, having brought the Cooper scale to the broad attention of the flute world, saw over 90% of its incoming orders opt for the new scale, and most of the orders on the waiting list were changed by customers to the new option. This soon became the normal pattern, with only a few flutists maintaining their preference for the original Powell scale. The workshop viewed Powell flutes with either scale to be consistent with Powell's standards of quality and style and felt that the Powell flute was "still the best there is."

### ORGANIZATIONAL LEARNING AND THE COOPER SCALE

The Cooper scale episode reflects learning by Powell that in some ways entailed observable change and in others did not. Powell became aware of and assessed the new scale and ultimately made new tooling and offered a new product. All of these are observable changes in a meaningful sense. But Powell also learned in other ways that were equally significant but that did not entail overt change, nor was it a matter of change solely through the vehicle of organizationally key individuals. The workshop succeeded in making an innovation that came to constitute an impor-



tant shift in the history of flutemaking; yet it did so while leaving unchanged the essential style of the Powell flute and the unique culture of the Powell workshop, in particular, its tacit mode of manufacturing know-how.

The flutes that were made with the Cooper scale were accepted by the flutemakers and by fluteplayers as "Powell flutes." No one ever claimed that the style of the Powell flute had been altered by the change. As one flutemaker observed, "We have only made the best, better."

This particular case of technological change did not involve any essential changes in daily work activities. The only explicit changes were some new tooling that produced the nearly imperceptible changes in the physical dimensions of the instrument necessary for the new scale.

In an important sense, the impetus for change was internal, not external: It did not arise out of a need to improve effectiveness or efficiency or to meet any perceived external challenge to market share or to correct an error. At root, Powell adopted a new technology to maintain and reaffirm its own self-image as makers of "the best"—that is, to sustain what the group felt, believed, and valued.

The decision to produce Powell flutes with both scales was not the resolution of a company conflict: There were no warring camps within the organization over which scale was better, nor was there a feeling that the original scale was in error. Offering both scales was Powell's way of accommodating something new while sustaining the organization's image of itself.

The central issue was the question of organizational identity: Could the organization make a flute with a Cooper scale and still be the Powell organization? For Powell flutemakers specifically, this question focused on their product: Could the organization absorb a new scale into its existing image or sense of "the Powell style"? Would the instrument still be "a Powell"? As organizational members put it, "Can we make a Powell flute with the Cooper scale without it ceasing to be the Powell flute?"

In a very real way, this set of questions can be interpreted to mean, Can we change without changing? Can we make a very deliberate design change and manage it organizationally (strategize about it, implement it, incorporate it into company policy, develop new tooling, etc.) without changing the Powell product and organization into different entities?

This suggests a relationship between change and learning that is different from the customary focus of

the cognitive approach. In learning how to make the Cooper scale, Powell mostly learned how to build a flute that was subtly but significantly different without changing the style or identity of their product. Powell's primary concern was as much preservative as it was innovative: learning how to do and make something different without becoming a new and different company; learning how to produce a new scale without changing the essence of the Powell flute.

This concern is reflected both in the making of the instrument and in the deliberations about choosing to go with the Cooper scale. Evaluating the possibility of making a Cooper scale at Powell was both an explicit and implicit exercise. A prototype instrument was made, so some things were necessarily explicit: measurements had to be taken, dies had to be cut, and so forth. Yet this was not done to test the Cooper scale: Mr. Cooper had already made flutes with the Cooper scale, which Powell had seen and tested earlier. Making the prototype enabled Powell, almost ceremonially, to go through the motions of making a Cooper-scale Powell flute and in doing so, to assure itself that the flutes and the company's style would be preserved through the Cooper innovation. Powell was not so much learning a new technology as learning—collectively, as an organization—how to maintain its identity in the face of a new undertaking.

Essentially, the exercise of making the prototype and the discussions about being "the Powell style" were actions aimed at preserving the organization's particular identity. The learning accomplished by Powell involved no reorganization, restructuring of tasks, or recasting criteria for effectiveness; it entailed neither explicit reflections on the practice of flutemaking nor the redrawing of organizational maps.

## REFLECTIONS ON CULTURAL LEARNING

Several aspects of the cultural perspective on organizational learning can be noted at this point. First, intuitively it is a much shorter conceptual leap to see organizations as cultural entities than it is to see them as cognitive ones. Organizations, being human groups, are more readily understood as being like tribes than they are as being like individuals or brains. Second, because organizational learning here is understood to involve shared meanings associated with and carried out through cultural artifacts, it is understood as an activity of the organization, that is, an activity at the level of the group, not at the level of the individual.



Accordingly, it is seen as conceptually and empirically distinct from learning by individuals in the organization. Third, it is also, then, unnecessary to argue that organizations learn in a way that is fundamentally the same as or similar to individual learning. The cultural perspective makes it possible to explore the meaning of organizational learning by beginning with empirical observations of group action rather than relying on conceptual arguments about likenesses between theories of individual cognition and theories of organizations. Fourth, it allows us to view organizational learning as both an innovative and a preservative activity, thus incorporating into the discussion of organizational learning the rather considerable amount of effort that organizations, like all human groups, put into maintaining the patterns of activity that are unique to each organization.

The cultural perspective and the cognitive perspective both include the study of the activities of individuals. The difference is one of focus: The cognitive perspective takes individual action as its primary point of reference; the cultural perspective focuses on a group of individuals moving within a "net of expectations" ranging from the organization's "explicit constitution to the most subtle mutual understandings between its members" (Vickers, 1976, p. 6). Within the cultural perspective, organizational knowledge is not held by an individual, nor do we see it as the aggregated knowledge of many individuals. What is known is known and made operational only by several individuals acting "in congregate."

The case analysis presented here exemplifies organizational learning as a collective activity rather than an individual one and, quite importantly, as an activity of preservation as well as one of innovation. From this analysis we derive a definition of organizational learning as *the acquiring, sustaining, or changing of intersubjective meanings through the artifactual vehicles of their expression and transmission and the collective actions of the group.*

These meanings, whether they are acquired by new members or created by existing ones, come about and are maintained through interactions among members of the organization. They need not be face-to-face verbal interactions: meaning-making and meaning-sustaining interactions take place just as importantly through the medium of the artifacts of the organization's culture—its symbolic objects, symbolic language, and symbolic acts. Such "artifactual interaction" happens not only in exceptional circumstances of disruption or change but also routinely as part of

"normal" day-to-day work (whether that be production, management, marketing, etc.). Such was the case at Powell.

This means that much of organizational learning, in our view, is tacit, occasioned through experiences of the artifacts of the organization's culture that are part of its daily work. No one says during the course of a typical working day, for example, "Powell values its identity as producer of the flutes with a particular feel to the mechanism." Rather, that part of Powell's culture is incorporated into the artifacts of daily life in the organization. It is reflected, for example, in the company's stories and myths, in the daily judgments of feel and eye, and in the ceremony of making a prototype Powell with a Cooper scale. Through such largely tacit practice and interpretation of artifactual interaction, the members of each workshop sustain their shared "web of meanings" and the group's expectations concerning the quality of workmanship and the style of its product. This sense of artifactual interaction follows Polanyi's formulation (Polanyi & Prosch, 1975) for tacit knowledge: something learned while focusing on something else.<sup>12</sup> Similarly, we argue, organizations learn tacitly, while focusing on "normal" work.

This incorporation of tacit expression and communication is a further point of distinction from the cognitive perspective, which typically requires that those things essential to organizational learning be made explicit, so that they can be communicated. What is to be learned must be "*capable of being stated* [italics added] in terms that are in principle understandable to other members of the organization" (Duncan & Weiss, 1979, p. 86). By contrast, the cultural perspective we propose here argues that what the organization learns may be, and often is, tacitly known, communicated, and understood. In the flute case, not only do the daily hand-to-hand judgments constitute tacit expressions of organizational know-how, but learning and knowing how to recognize the right feel are also transmitted tacitly—for example, in the mastercraftsman's judgments of an apprentice's work. Indeed, in large measure, it was such tacit knowledge that guided the decision making around the adoption of the Cooper scale.

A central concern of organizational learning from this cultural perspective is how an organization constitutes and reconstitutes itself. We have described organizational learning as the acquiring, sustaining, and changing, through collective actions, of the meanings embedded in the organization's cultural artifacts.

Following this, organizational activities, from ordinary daily tasks to major innovations, can be seen to entail the ongoing reconstitution of what is essential to the organization's identity and its ability to do what it does.

One way in which organizations reconstitute themselves is through the acquisition of new members. As new members are successfully integrated into an organization, their actions increasingly exhibit aspects of the group's or organization's culture. Accordingly, the meanings embedded in a new member's actions become compatible with—indeed, become part of—the “web of meaning” embedded in the actions of the group. This is what happens, for example, when an apprentice at one of the workshops begins to use that workshop's metaphors successfully in interactions with other flutemakers or when he becomes able to work within the informal quality control system by judging his own work and that of others as having the right feel, without checking with a mastercraftsman. When a new member's actions “fit in” to group activity, the organization's concerns are thereby confirmed and sustained; that is to say, the organization has reconstituted itself. Organizations also reconstitute themselves through the ordinary day-to-day activities of veteran members. Such activities and their underlying web of meaning mutually confirm and sustain each other.

The flute workshops have engaged in a form of organizational learning that amounts to organizational reconstitution over time as they have passed through successive generations of flutemakers. The personnel have undergone a complete turnover (in some cases more than once), whereas the form of workmanship and the style and quality of the products have remained constant. A provocative parallel can be found in Weick's (1979) example of the Duke Ellington Orchestra continuing long after the Duke had been replaced by his son. Weick reasons that this has been possible because the concept of that orchestra has been continually recreated by the perceptions of its audiences. We suggest that another likely factor is that the orchestra has sustained its identity through long-term organizational learning. Specifically, the ongoing maintenance of the patterns of collective action among the players, intimately bound up with performance itself, has enabled the organization to survive over the years and through a change in personnel (indeed, its leadership!) because the orchestra continued to learn what it needed to do—how it needed to play—to be the Duke Ellington Orchestra.<sup>13</sup>

The focus here is less on what goes on inside the heads of individuals and more on what goes on in the practices of the group (including how those practices are manifested, in part, in individual action). To paraphrase Douglas (1986), rather than seeing the organization as the individual writ large, we would do well to see the individual as the group writ small, each individual carrying those parts of the collective knowledge that make possible individual action with respect to organizational concerns.<sup>14</sup>

Further, organizational reconstitution can be seen as an important feature of organizational change. As the Cooper innovation at Powell suggests, preservation of organizational identity can be a central concern in organizational innovation. Typically, the aim of innovation is for the organization to take on a new situation, not a new identity. Accordingly, a significant part of the effort put into mastering what is new is often concerned with keeping stable what is old. Asking, as the Powell flutemakers did, “Can we undergo this innovation and still remain who we are?” suggests that a major concern of such innovations is the reconstitution of what makes up the identity of the organization, of what it does and how it does it.

In a somewhat similar fashion, Duncan and Weiss (1979), in considering a social basis for organizational learning, focus on shared cognitive frameworks particular to specific organizations. However, echoing the systems view, they maintain that organizational learning involving such frameworks takes place through the detection of a “performance gap” and its closing by the acquisition of organizational knowledge. In contrast, the cultural perspective we have proposed would not limit organizational learning to the closing of performance gaps (although we would certainly wish to include them). The maintenance of patterns of organizational activity (i.e., the reconstitution of the organization) is ongoing, is not dependent on error detection and corrective change, and does not necessarily entail responses to external stimuli. In our view, the dynamic, ongoing preservation of organizational identity is as compelling as an exclusive focus on learning new things and unlearning outlived ones.<sup>15</sup>

#### CULTURE AND ORGANIZATIONAL LEARNING: CONCLUSION

We began this article by focusing on two questions: Can organizations learn? What is the nature of learning when it is done by organization? It is our view that

in addressing these questions, most authors have adopted a cognitive perspective. They have taken as their common point of reference learning by individuals and have seen organizational learning either as learning by individuals in organizational contexts or as activities of organizations that are akin to learning by individuals. We have argued that the first position tends to blur the useful distinction between learning *in* organizations and learning *by* organizations. The second, we have maintained, raises the conceptually problematic notion that organizations learn the same way people do, which itself entails an unresolved debate about the ontological status of organizations as cognitive entities (an assertion that the cognitive perspective nonetheless seems to require in order to claim that organizations learn). We have noted that, in ways rarely addressed, the cognitive perspective and its insights are dependent on or conceptually linked to theories of individual cognition that are themselves controversial, complex, multiple, and changing. Finally, we have argued that the cognitive perspective's tendency to associate learning with behavioral change derives perhaps as much from its own conceptual predilections as from the realities of organizational life.

By comparison, from a cultural perspective, we have argued (a) that one aspect of the human capacity to act is the ability to act in groups; (b) that a group of people with a history of joint action or practice is meaningfully understood as a culture; (c) that a culture is constituted, at least in part, from the intersubjective meanings that its members express in their common practice through objects, language, and acts; (d) that such meaning-bearing objects, language, and acts are cultural artifacts through which an organization's collective knowledge or know-how is transmitted, expressed, and put to use; and (e) that organizations are constantly involved in activities of modifying or maintaining those meanings and their embodiments—that is, of changing or preserving their cultural identity. Finally, it has been our position that such activities constitute organizational learning. That is, when organizations are seen as cultures, they are seen to learn through activities involving cultural artifacts, and that learning, in turn, is understood to entail organizations' acquiring, changing, or preserving their abilities to do what they know how to do.

This is not to suggest that an organization has only one culture—there is always the possibility that an organization will have multiple cultures, no one of which is dominant, or that there will be a dominant culture and one or more subcultures—nor does it in-

dicating that organizational cultures are created only by managers or founders (see Davis, 1985; Louis, 1985; Yanow, 1992, for discussions and examples of multiple cultures, including those not managerially created). Indeed, the flute case illustrates the role of members in sustaining an organization's culture, even when the original ones are long gone. Although we do not wish to minimize the potential for conflict within or across cultural groups, such is not present in this case. What cultural organizational learning might look like in the face of conflict is a subject for future research. What we have described here is the process of learning by a group that does share cultural meanings. In the flute case, the whole organization constituted such a group; in another context, this might not be so.

The cultural perspective we have proposed rests on a particular understanding of culture that is itself part of a debate in the field. Those who understand culture as an organization's artifacts alone may not find in this essay the sorts of stories, rituals, metaphors, and so forth that add up to culture for them.<sup>16</sup>

But because we see culture as the values, beliefs, and feelings of the organization's members along with their artifacts, we do find culture in the case. Powell identified itself, for example, as a maker of "the finest flutes in the world"; this belief, and the value the organization placed on it, ultimately meant for them that they had to learn how to accommodate the Cooper scale within their practice. And they had to learn this in the face of a paradox. They already made what they held to be the finest flute, and it had a Powell scale. This belief was unchallenged. They had to learn how to think of the Powell flute with the Cooper scale as *also* "the finest flute"—in the face of what might appear as a logical and historical impossibility that there could be two different finest Powell flutes at once. This required them to learn to change not just their beliefs—what Gagliardi (1991, p. 13) calls the "logos" or cognitive part of culture—but also their values and feelings—the "ethos" (the moral experience) and the "pathos" (the sensuous experience) of culture. To see culture in the Powell case, one has to have a theory of culture that includes values, beliefs, and feelings along with their artifactual embodiments. Although calling on the study of organizational learning to include organizational culture as well as cognition, we are also joining those who would like to see the field of organizational culture make its work more inclusive of the noncognitive aspects of human action.

In addition to the above, we find a cultural understanding of organizational learning to be a fruitful



approach that suggests further areas of exploration. We would like to speculate on some of these.

Organizations commonly acquire new members. As we noted above, such occasions present an opportunity for an organization to learn, where that learning can be understood to constitute the maintenance or preservation of the know-how associated with an organization's activities and abilities. There is a need for a fuller understanding of how the group and the individual come to hold the shared intersubjective meanings that constitute organizational cultures, as well as of processes by which both "agree to disagree." This cultural perspective suggests that organizational socialization is not simply a question of "How do you socialize Smith into IBM?" (because that constitutes learning by Smith, the individual, not IBM, the organization) but rather the fuller question, "How does IBM renourish itself with new members, yet ensure its continuity?" Socialization typically suggests movement in a single direction: IBM socializes Smith, where Smith is relatively passive, a receptive vessel. From the cultural perspective, for Smith to become a member of IBM (or of a unit within IBM), she must form an understanding of the meaning of those elements of IBM's culture that enable her to carry out her role effectively within it (a point where individual cognition may properly and profitably enter the discussion). IBM, meanwhile, must learn how to make Smith's actions compatible with the actions (and underlying meanings) of other members of its culture and to do so in a way that fosters its own continuity, flourishing, and survival. Cultural organizational learning would focus on the *mutual* creation of compatible and shared meanings.

Would one find the same tacit, artifactual interaction in a larger, more highly differentiated organization? We agree with Ed Schein (personal communication, June 1988) that the theoretical premises remain the same, regardless of differences in size and structure. We suggest, however, that cultural learning as we have described it may be more easily seen when size is small and structure is simple. Such would be the case with subunits of large organizations.

Similarly, our presentation of culture as an organization-wide phenomenon may be an artifact of Powell's relatively small size. We do not mean to suggest that organizations have only single cultures. It does seem to us, however, that cultural learning across subcultures within a single organization, even in the presence of differences, disagreements, perhaps hostility, will take place—if at all—through the tacit

processes of artifactual interaction we have discussed. The question indeed is whether learning will take place under such circumstances, whether it will be preservative or not, and if so, of what. How and whether it happens is likely to be context specific; that it might be preservative learning is a possibility to entertain in any context. As the field of organizational culture itself develops theories of power, our understanding of cultural learning will benefit.

Finally, from the emphasis on error detection and correction inherited from the systems view, it has been a logical step for the cognitive perspective to develop the normative position that organizations *ought* to have the ability to detect and correct errors. This, in turn, has supported the claim that when organizations detect and correct errors, they have "learned." In this fashion, the cognitive perspective has evolved a substantially problem-oriented and problem-solving understanding of organizational learning: If learning is about correcting errors, then learning is about things that have gone wrong.

But, as Vickers (personal communication, January 1981) has pointed out, an orientation toward what goes wrong does not necessarily yield the sum total of what is interesting or vital about organizational life. What goes right can also be of interest, and is so, we would argue, for the very reason that it accounts for much of what organizations do. We hold that a cultural theory of organizational learning enables one to focus as much on the right as on the wrong and as much on continuity and preservation as on change. We believe this to be a fruitful area for further exploration.

Vickers (1976) intended his focus on the cultural nature of institutional change "to challenge some widely held beliefs about the role and dominance of cognition" (p. 7). We do not assume for ourselves the whole of this challenge, but we would be pleased if our observations were to further the current explorations of the role that culture plays in our lives, particularly that growing portion that is spent in maintaining and changing our institutions.

## NOTES

1. This discussion of organizational learning as individual learning has a parallel in organizational behavior that has at times been a source of confusion—specifically, whether "organizational behavior" refers to the behavior of individuals within organizations or to the collective behaviors of organizations themselves. The use of the individual as a model for the group, and vice versa, has a long history.



It may be found in philosophy and social science in discussions that trace their lineage, in one sense, to Mead (1934) or, in another sense, to Hobbes (1651/1958). Indeed, it can be found as far back as Plato (Hamilton & Cairns, 1961) when, for example, Socrates suggests that just as large letters can be easier to read than small ones, we should not look first to discover justice in the individual but rather in the state, where the "letters exist . . . larger," and only after finding it there should we look for it in individuals, recognizing then "the likeness of the greater in the form of the less."

2. Duncan and Weiss (1979) develop a similar critique in their finding that individual learning within an organizational setting, as presented by March and Olsen (1976) and Argyris and Schön (1978), has limitations for producing understanding of "systematic organization action."

3. In other respects, however, their work is an exception to the following discussion.

4. For that matter, even within research on individual cognition there is a great deal of attention given to variations in how learning occurs across individuals and within one individual over time (see, for example, Gardner, 1983).

5. It seems to us that the concept of organizational learning began to attract attention in the mid-1970s, in part in response to theories of organizational change from the previous decade that called for radical changes in the social, political, and corporate worlds. The concept of organizational *learning* provided a noncontroversial, conservative, yet dynamic, alternative for addressing the issue of change because, traditionally, learning is not seen as a controversial or radical activity. It also provided a tool for intervention. Its psychological origins made it a manageable tool, in that it targeted problems in single individuals, who could be helped to learn, in contrast with radical change theories rooted in analyses of the sociopolitical structure that demanded change in "the system."

We also note that a learning approach to organizational change addresses implicitly one of the problems that arose in early T-group change efforts. Practitioners using T-groups came to note that although T-groups produced learning and change in individuals, those changes were often challenged when these individuals returned from the training to the organization, and, as a consequence, what those individuals learned was sometimes lost. Seeing organizational change as the result of learning by key individuals within an organization conceptually avoids the problem of translating individual learning into organizational learning.

6. Although inventions and innovations are often the products of single individuals, part of the process of building an organization is a matter of embedding the know-how required for the ongoing production and adaptation of these products into the organization itself. Karl Weick has called to our attention a series of social psychological experiments that modeled cultural transmission within a group, similar to our discussion here, as subjects are replaced over successive generations of the experiment. The research found that the small group's simple strategy survived changes in membership. This research is reported in Weick and Gilfillan (1971).

7. Bateson (1958) was perhaps the first to analyze the problem of learning by a group, in his 1936 study of how the

Iatmul culture learned to accommodate change. In his epilogue to the later edition of the book, he elaborated on the concept of "schismogenesis" to describe this process. Much influenced by his interim studies in psychology, Bateson introduced the concept of "deutero-learning"—"learning to learn"—as the way in which groups and individuals manage a changing environment.

8. We are, of course, limited by the English language to describing organizational actions using verbs appropriate to individual action, thereby appearing ourselves to anthropomorphize organizations. This conceptualization of organizational activity is further promoted by the use of a singular verb for group action—for example, the organization *knows*—mandated by accepted rules of English usage. On the other hand, such usage bolsters our conceptualization of the organization as an entity that can take action that is other than the sum of its parts.

9. There is no single definition or theory of culture in either the interdisciplinary field of organizational culture studies or in its disciplinary "homes" of anthropology or sociology. Ouchi and Wilkins (1985) noted this quite thoroughly in their review of the several literatures whose theories and debates underlie and inform work in organizationally oriented culture studies. We place ourselves in the school that considers both meanings and their artifactual expressions to be necessary components of culture. When we refer to a cultural perspective in this essay, we have in mind one informed by such an interpretive theoretical position. We cannot in this article explore the ways in which cultural learning might look different according to one's theoretical position regarding the nature of culture, but we wish to acknowledge that this might be the case and might be a useful area for further research.

10. Properly speaking, symbols, rituals, myths, and so forth are *not* the artifacts of an organization's culture; annual reports, statements of corporate philosophy, award celebrations, daily talk about the specifics of work, and so forth are the artifacts. The former terms are analytic vocabulary that characterize and categorize the actual artifacts. As tools of research, these terms draw attention to certain features of organizational life; in fact, they incorporate the rules and conventions by which such categories are formed. This point is germane to a central methodological issue in the study of organizational cultures: Because the analytic categories are essentially constructs of the observer, care must be taken not to confuse them with organizational experience itself.

11. This case is based on extensive observation and interviewing over a period of several years, including numerous visits to all three workshops, detailed interviews with all key personnel, and "shop floor" interviews with flutemakers and apprentices at all levels. The case as presented here draws, as well, on Cook (1982). Our theoretical interest in culture as an approach to organizational learning initially grew out of our considerations of the flute case. Since then, we have moved back and forth between theory building and exploration of the case in developing the view presented here. In this sense, both our experience and the form of this essay reflect a recursive interpretive, or hermeneutic, circle.

12. One of Polanyi's examples is of bicycle riding, where balance is learned tacitly while focusing on pedaling or

steering or some other target of attention. On a related subject, Brown and Duguid (1991) have explored ways that practitioners communicate and learn skills tacitly in daily practice.

13. We have had this point further confirmed in a personal conversation with a member of the Juilliard String Quartet. Over more than two decades the quartet has replaced all but one of its original members. One of the newest members reports that his experience of learning to play in the style of the Juilliard and his contributions to the evolution of that style were never a subject of explicit conversation but were carried out through the playing of the music itself in rehearsal and performance.

14. For Douglas (1986), such concerns in a societal context include classification systems, institutional memory and forgetfulness, and group identity. She addresses the issue of attributing emotions, behaviors, or thought to institutions, and argues that thinking itself forms the social bond among individuals and binds them in a corporate entity. In a similar sense, Bougon, Weick, and Binkhorst (1977) held that "what ties an organization together is what ties thought together" (p. 626). What we are suggesting is an approach that adds to thinking what Vickers (1973) called "appreciating," that would include values and feelings along with artifacts and practices as the organizational glue.

15. It is possible that we have been disposed to find ongoing conservation, preservation, and reconstitution at work in seeing learning as an aspect of culture. As anthropologists Marcus and Fischer (1986) noted about work in their field, "The drive remains strong . . . to show repeatedly how the tradition and the deep structures of cultures shine through despite change" (p. 181). One of the criticisms levied at phenomenological analyses of human reality is that they are concerned with societal stability and order to the exclusion of change. We hope we have sufficiently illustrated our concern with change as a part of human action. The exception that we take with the cognitive approach to organizational learning is its nearly exclusive concern with change.

16. Related to this, we differ with those who see culture as one of several elements of an organization. Levitt and March (1988), for example, in arguing that organizations learn "by encoding inferences from history into routines that guide behavior," use the term *routines* to include "forms, rules, procedures, conventions, strategies and technologies" along with "beliefs, frameworks, paradigms, codes, cultures and knowledge" (p. 320). Because we understand culture not as something that an organization possesses, but as something constitutive of it, we would not see culture as one of several avenues for carrying out routines, but rather would see routines, as well as many of the other items on their list, as elements or artifacts of an organizational culture.

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