Organizational Routines as a Source of Continuous Change

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Abstract

In this paper I claim that organizational routines have a great potential for change even though they are often perceived, even defined, as unchanging. I present descriptions of routines that change as participants respond to outcomes of previous iterations of a routine. Based on the changes in these routines I propose a performative model of organizational routines. This model suggests that there is an internal dynamic to routines that can promote continuous change. The internal dynamic is based on the inclusion of routine participants as agents. When we do not separate the people who are doing the routines from the routine, we can see routines as a richer phenomenon. Change occurs as a result of participants' reflections on and reactions to various outcomes of previous iterations of the routine. This perspective introduces agency into the notion of routine. Agency is important for understanding the role of organizational routines in learning and in processes of institutionalization.

(*Routines*; *Learning*; *Change*; *Performative*; *Structure*; *Agency*)

Introduction

Routines are temporal structures that are often used as a way of accomplishing organizational work. Students of organization have long recognized routines as an important element of organizational behavior. Routines are important in organizations, in part because a lot of the work in organizations is performed through routines (Cyert and March 1963, March and Simon 1958). Researchers have considered routines as they relate to organizational structure (Jennergren 1981, Blau and Schoenherr 1971), technology (Galbraith 1973, Gerwin 1981, Nelson and Winter 1982, Stinchcombe 1960, Thompson 1967), innovation (Beyer and Trice 1978, Hedberg et al. 1976), socialization (Beyer 1981, Kanter 1977, Kaufman 1967, Sproull 1981), and decision making (Allison and Zelikow 1999, Cyert

and March 1963, Lindblom 1959, March and Simon 1958, Selznick 1957, Steinbruner 1974).

Despite this considerable attention, I claim that organizational routines are still underappreciated because their potential for change has not been sufficiently explored. In this paper I present observations of routines that altered my understanding of their potential for change. I began my fieldwork in a student housing department of a large state university with the idea that organizational routines are *repeated patterns of behavior that are bound by rules and customs and that do not change very much from one iteration to another*. Because stability is often used as a defining characteristic of routines, I intended to study what factors contribute to this stability. The definition I used is consistent with the work of Cyert and March (1963) on standard operating procedures and Nelson and Winter (1982) on routines. While this definition helped me to identify several routines that I could follow, it did not help me pursue my original objective. Indeed, I found that most of the routines I was studying were undergoing substantial change. This discrepancy between the concept and the observations raises questions. People have asked me how there can be such a thing as a routine that changes. Isn't that, by definition, not a routine? They certainly do not fit Webster's first definition of "a regular, more or less unvarying procedure," though they come much closer to fitting the fourth definition: "a series of steps for a dance" (1984, p. 1241, see also Feldman and Rafaeli 2000 on routines as dance).

The routines I studied were hiring, training, budgeting, moving students into residence halls at the beginning of the year, and closing up residence halls at the end of the year. These routines fall into the category of task performance standard operating procedures identified by Cyert and March (1963). They also fit well Nelson's and Winter's definition "that range from well-specified technical routines for producing things through procedures for hiring and firing. . ." (1982, p. 14) and with the definition proposed by a group of scholars meeting at the Santa Fe

Institute who defined routine as "an executable capability for repeated performance in some context that has been learned by an organization in response to selective pressures" (Cohen et al. 1996, p. 684).

A hiring routine provides a good example of how a routine can change and still be the same routine. The hiring routine I observed has standard features that most of us would expect. People submit applications, they are screened and interviewed, they are given letters of rejection or job offers. These standard sequential elements of the hiring routine continued to be included in the routine. These are the aspects of the routine that did not change. However, at the beginning of my observations, an applicant for a job in this organization would have to submit applications to every residence hall he or she wanted to work in, would go through a separate screening and interviewing process in each hall, and may receive multiple rejections and/or offers. During the observation period, the routine was changed so that applicants submit only one application, are screened in a centralized process, then interviewed in each of the halls they are interested in working for. They receive only one offer of a job at the end of the process. In this case, the elements of the routine have not changed, but how they are accomplished has. I show later in the paper that how these elements are accomplished has implications for what elements are in the routine as well as for the outcome of the task of hiring.

The preponderance of attention to organizational routines has focused on them as stable and unchanging (Gersick and Hackman 1990, Ashforth and Fried 1988, Weiss and Ilgen 1985). Though Cyert and March specifically acknowledge change in standard operating procedures (which they refer to as adaptation), they also state that "because many of the rules change slowly, it is possible to construct models of organizational behavior that postulate only modest changes in decision rules" (1963, p. 101). Nelson and Winter also acknowledge the possibility of change, which they refer to as mutation (1982, p. 18), but their definition of routine focuses on the lack of change: "Our general term for all regular and predictable behavioral patterns of firms is 'routine' " (1982, p. 14). Recent experimental research has suggested that the stability of organizational routines is attributable, at least in part, to their being stored as distributed procedural memory that is not readily available for discursive processing (Cohen and Bacdayan 1994).

Though change is not generally seen as a dominant aspect of organizational routines, scholars from a number of different perspectives have acknowledged it. One way of thinking about change in routines is change that is provoked by a crisis or an external shock. Gersick and Hackman list five reasons for change in habitual routines

of groups: "(a) encountering a novel state of affairs, (b) experiencing a failure, (c) reaching a milestone in the life or work of the group, (d) receiving an intervention that calls members' attention to their group norms, and (e) having to cope with a change in the structure of the group itself" (1990, p. 83). Financial crises or new ideas in the industry, for instance, cause routines to change. Technology is one explicit impetus that has been shown to bring about changes in the way an organization structures the accomplishment of work (Barley 1986, 1990; Orlikowski 1992). This is similar to the view that change in routines is associated with their origins, and that after a period of flux, an equilibrium is established that does not entail change (Cohen et al. 1996). There is no doubt that new beginnings and major transitions are powerful incentives to change the way work is accomplished, but our understanding is limited if we think of this as the only way that organizational routines change. We specifically omit the possibility that routines are continuously changing.

An evolutionary or ecological perspective on routines also suggests a role for change in routines (Nelson and Winter 1982). Baum and Singh, for instance, categorize routines as genealogical entities that "pass on their information largely intact in successive replications" and that are "concerned with the conservation and transfer of production and organizing skills and knowledge" (1994, p. 4). Nonetheless, these entities are influenced by a variety of factors in the organizational context. Baum and Singh, for instance, suggest that routines are influenced not only by changes in jobs, but also by changes in the incumbents of these jobs and by the ideas and mistakes of these incumbents (1994). Miner and Estler (1985) show how responsibility accrual by individuals can be a vehicle for or a reflection of organizational change through the redefinition of jobs. They also show that such changes are influenced by factors at the individual, organizational, and environmental levels. Miner (1991) argues that these evolved jobs are routines and that their survival depends on features of the organizational context, features of the jobs and features of the individuals who made the initial change in the jobs. Burgelman (1994) presents a different source of change in organizational routines when he shows how the product mix for Intel evolved as a result of mid-level managers following internal rules rather than as a result of decisions by top management. The perspective presented in this paper adds to this picture of routines by focusing on the role of agency in the process of routine change.

Pentland (1995) and Pentland and Rueter (1994) come closest to the perspective that I develop here. They have pointed out that routines have qualities of both stability

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and change. Their use of a grammatical analogy for understanding routines produced the following insight: "An organizational routine is not a single pattern but, rather, a set of possible patterns—enabled and constrained by a variety of organizational, social, physical and cognitive structures—from which organizational members enact particular performances" (1994, p. 491). They suggest that organizational participants have a repertoire of actions they can take. The choice from among the repertoire varies according to preceding actions and is guided, though not determined, by the grammar or "rules" about what actions go together. This work claims that the unvarying qualities of routines are the rules about how to put parts of the repertoire together and the repertoire itself. These two elements constitute the structure that enables and constrains the actions that take place.

My observation of organizational routines extends this understanding of change in organizational routines. Like Pentland and Rueter, I find that variation is a common part of organizational routines in large part because they are not mindless but "effortful accomplishments" (1994, p. 488). I also find, however, that change is more than choosing from among a repertoire of responses, and that the repertoire itself, and the rules that govern choice within a repertoire can also change. In addition, the changes in the repertoire and the rules have implications for what it means to accomplish a particular task. My observations suggest that work practices such as organizational routines are not only effortful but also *emergent* accomplishments. They are often works in progress rather than finished products.

Naming routines emergent accomplishments, however, does not help us understand where new repertoires and rules come from. Previous observations that exogenous change in the form of a change in the context of the organization or of the introduction of new technology are surely important motivations to changing rules and repertoire. My research, however, points to the internal dynamic of a routine as another source of change. This perspective moves away from viewing routines as either behavioral or cognitive and toward thinking about routines as something that includes both of these aspects. One can think of routines as flows of connected ideas, actions, and outcomes. Ideas produce actions, actions produce outcomes, and outcomes produce new ideas. It is the relationship between these elements that generates change. The fit between the ideas, actions, and outcomes is not always tight. Ideas can generate actions that do not, in fact, execute the ideas. Actions can generate outcomes that make new and different actions possible or necessary. The outcome could, for instance, be a disaster that encourages one to try something different next time. Outcomes, in turn, can generate new ideas.

Some of these changes have the potential to be continuous. I have identified two kinds of outcomes that are implicated in continuous change: outcomes that fall short of ideals and outcomes that present new opportunities. Outcomes that fall short of ideals can, in the right circumstances, motivate continued striving. Outcomes that present new opportunities suggest an expanding notion of what is possible and worth trying. Outcomes can open up new possibilities by, for instance, creating new resources (Feldman 2000). New ideas may be required to deal with these outcomes. The adjustment process that results from either of these sources has the potential to be continuous. People who engage in routines adjust their actions as they develop new understandings of what they can do and of the consequences of their actions. This adjustment does not necessarily constitute movement to a new equilibrium.

This perspective on routines fits with an understanding of organization (or organizing) as an ongoing accomplishment. This perspective has been an established part of organization theory at least since Weick transformed the famous title of the Katz and Kahn (1966) book, *The Social Psychology of Organizations* (Katz and Kahn 1966) into *The Social Psychology of Organizing* (Weick 1979). It shifts focus from what an organization or structure is to how it is accomplished. There has been much interest among both social and organizational theorists in structuring as a process rather than structure as a thing. Theorists have suggested that structure consists of patterned actions (Manning 1977, 1982; Weick 1979) and of recursive relations between actions and the residue of past actions (Giddens 1979, 1984; Sewell 1992; Barley 1986, 1990; Orlikowski 1992). As we move toward a notion of organization (or organizing) as an ongoing accomplishment we need a notion of routine to match. The performative model of routines that I propose in this paper provides an image of routine as an ongoing accomplishment.

The change process described here is similar to the teleological change model described by Van de Ven and Poole (1995). They describe teleological change as incorporating a "constructive mode of development" in which "the process is emergent as new goals are enacted" (1995:523). One difference between the change in routines that I have observed and Van de Ven's and Poole's notion of teleological change is the idea that change is based on consensus. As illustrated by one of the routines I describe, conflict as well as consensus can be an important part of the process of routine change.

Agency is an important aspect of this perspective on routines. When we do not separate the people who are doing the routines from the routine, we can see routines

as a richer phenomenon. Routines are performed by people who think and feel and care. Their reactions are situated in institutional, organizational and personal contexts. Their actions are motivated by will and intention. They create, resist, engage in conflict, acquiesce to domination. All of these forces influence the enactment of organizational routines and create in them a tremendous potential for change. In this paper I show only a small part of the effects of agency on routines. I focus on the effects of agency on what I call the internal dynamic of routines, which involves participants' reactions to the outcome of previous iterations of the routine. I take into account certain, very general characteristics of the participants mostly having to do with role perceptions, but myriad specific characteristics of the situated individuals who brought about the changes are omitted.

In the following, I describe how routines changed in an organization I observed for four years. First I discuss the methods of study and the organizational context of the routines. Then, I present descriptions of these routines and how they changed over the course of the study. Following the descriptions, I discuss how the routines changed and propose that the internal dynamics of change in routines suggest a source of continuous change. In the conclusion I claim that this way of viewing change in organizational routines has some important implications for our understanding of learning and our understanding of processes of institutionalization in organizations.

Observations of Routines

In my fieldwork I focused on routines that are repeated annually and that involve many organizational participants. I focused on this kind of routine because I was at the time studying the barriers to change in organizational routines, and I thought that these would be the most likely not to change. I did not choose what Stinchcombe (1990) refers to as batch routines because I am more interested in operations in which the agents have discretion.

Organizational members identified five routines for me: (1) budgeting for maintenance and renovation of the buildings and operations within the buildings; (2) hiring; (3) training the student resident staff; (4) moving students into the residence halls in the beginning of the school year; and (5) closing the residence halls at the end of the school year. Within each of these routines there are multiple routines, and there is some variance in what is included in each of routines depending on who is describing them. Nonetheless, organizational participants would have a good understanding of the rules and actions implied if one were to say, "now we are doing budgeting" or "now we are doing hiring." In the following sections I describe how I gathered and analyzed information about these routines.

Methods

Data Gathering. I gathered data in stages. The first stage involved 20 formal but unstructured interviews with members of units throughout the Housing organization. In these interviews I simply asked people what their jobs were and how they performed them. I asked for examples and used much of the interview, which usually lasted about an hour, to gain more specific information for each example. These interviews gave me a feel for the work and the culture of the organization, for how units were organized and how they coordinated with other units.

Based on these interviews I focused on the five routines mentioned above. Each routine was broadly recognized within the organization. I viewed these routines primarily from the perspective of one unit. This unit was the only one involved in all of the routines. In addition, much of the coordination in this unit took place in regularly scheduled meetings, which facilitated observation. This unit also welcomed my examination of their operations.

The details of data gathering over the next four years take a very long time to describe and involve much knowledge of the specific routines. Suffice it to say that I attended every meeting relevant to these five routines (that I knew of and that my schedule allowed me to attend). I attended meetings of the upper-level supervisors as well as of their subordinates. I shadowed both supervisors (four people) and subordinates (three people) during times when they were particularly engaged in the routines. I often had lunch with members of the organization and had conversations as we walked to and from meetings. I also attended such things as birthday and employee of the month celebrations to get a sense of what it was like to be a member of this organization. In the last year I also engaged in participation. I consider this to be an important stage of the research that deepens the understanding of what organizational members know and feel. I participated in budget discussions, I taught a class associated with the hiring routine, and I participated in a committee that wrote a report on one of the positions that was involved in all of the routines. I spent approximately 1,750 hours in observation, participation and conversations of various sorts. Over the four years, this averages to between five and ten hours per week. There were some weeks when I spent much more time in the organization, and others when I spent much less time.

During all this time I kept field notes. I also kept artifacts such as agendas for meetings, budgets, newsletters, commemorative pins, and articles used for discussion in

meetings. I audiotaped discussions only during the last year and only when I thought that my taping would not be disruptive. During this last year, I also gathered 10,000 electronic messages from both supervisors and subordinates. Electronic mail had become a common form of communication over the period of observation, and increasingly coordination was taking place through this medium.

After the formal observation period, my interactions continued at a decreased rate. I did two consulting sessions with members of Residential Life that were probably more instructive for me than for them. I coauthored a chapter in a book with one of the central administrators. I continued to receive materials from mailing lists. I continued to meet with members of the organization from time to time. As a result, data gathering continued, but in a less formal and less systematic way. I tend not to put as much emphasis on information gained after the formal observation period ended, but I cannot completely discount what I learned during this time.

Data Analysis. It is always hard to say where data gathering stops and data analysis begins. Whether explicitly as proposed by Glaser and Strauss (1967) or implicitly, one is always trying to make sense of one's data and thinking about what more one can find out. My approach at this stage was to find out as much as I could about the organization, its members, and the routines they were engaged in. This is partly because my initial question of why routines do not change was replaced before long with a more general question about how to make sense of routines that do change. Conscious analysis of these data waited until the formal observation period ended.

Formal analysis involved three steps that took place roughly concurrently and over a period of several years. The first step was to write a manuscript that pulled together the information I had gained about both the organization in general, and the specific routines. This manuscript included detailed descriptions of organizational units and positions, organizational culture and attitudes, and dispositions of individuals as they pertained to the organizational routines I studied. It also contained detailed descriptions of each of the routines, who had participated in them, what they had done, and how the routines had changed over the years of observations.

The second step involved using several different metatheories to think about this information. The metatheories I used were ethnomethodology, semiotics, dramaturgy, and deconstruction (Feldman 1995). These metatheories all have assumptions that were consistent with the setting I was concerned with. They each allowed me to develop new understandings of the data I had gathered without going beyond what I had actually observed or been told.

The reason for this part of the analysis was consciously to break the order of information as it had been presented to me. I did not discount the original order, but sought to develop alternatives.

The third step took place once I had found some theories that helped me to think about both change and stability in organizational routines. The theories I found most useful were structuration theory (Giddens 1979, 1984, 1993) and the theory of practice as developed by Bourdieu (1977, 1990), Lave (1988) and Ortner (1984, 1989). As I read these theories, I used the concepts to organize my observations of the routines. This exercise led me to an appreciation of the relationship between action and structure through the medium of practice. This appreciation underlies much of what I understand about why and how organizational routines change.

A final step is ongoing as I write articles in which I try to explain what I have come to understand and why I believe it is important. The effort involves shaping the data in a way that will help people to understand the point I wish to make without violating the sense of the observations. The reason for this effort is that ethnographic research yields observations that are relevant to many points of theoretical interest, and these observations are tangled and interwoven in the fabric of everyday life. As I attempt to pull out and follow one strand, I must make decisions about what constitutes a "strand" and about what surrounding fabric needs to be explained in order to make sense of the "strand." During this process I find that questions arise that did not arise from any of the previous analytical efforts. I take this to be a function of the richness of the data rather than a failing of any of the earlier analytical efforts.

Organizational Setting

The organization I observed, among other things, provides housing for approximately 10,000 single students and 4,000 family members. One could say that this organization operates dormitories, and in some respects this is true. But it gives the wrong impression. The people in this organization are extremely committed to providing a living environment that helps students deal in a variety of ways with the stresses of university life. Saying that they run dormitories does not capture this commitment, which is part of why they refer to the halls as residence halls instead of dormitories. Their commitment is not only expressed in such surface manifestations, but also in the level of attention paid to the quality of the living environment and to the programs offered.

The Housing organization is quite complex, consisting of a broad range of professional and nonprofessional members. The three major functional units that are responsible for the day-to-day operations of the residence

halls are Facilities (responsible for maintenance and reno-
vation of the halls), Food Service (responsible for pro-
viding meals for residents) and Residential Life (respon-
sible for maintaining order and developing the potential
of the halls as communities in which students could make
a transition from life with parents to life on their own).
Most of my observations took place in Residential Life.
Residential Life consisted primarily of central adminis-
trators (an associate director who reported to the director
of housing and three assistant directors) who neither lived
nor worked in the residence halls, building directors who
worked in the residence halls but did not live there, and
student resident staff who both lived and worked in the
residence halls. There are also systemwide professionals
such as the head librarian who work in but do not live in
the residence halls. These professionals are different from
the building directors in that they have responsibilities in
all of the residence halls, whereas the building directors
were usually responsible for one hall. The systemwide
professionals had student staffs who usually, but not al-
ways, were residents. Figure 1 is an organizational chart
for Residential Life. My descriptions of routines involve
the central administrators, building directors and resident
staff members.

Descriptions of Routines

In the following I describe the changes that I observed in
four of the routines, and some of the implications of these
changes. The first vignette describes the routine of dam-
age assessment that was part of the closing routine. The
second vignette deals with the move-in routine. The third
vignette talks about changes in the hiring and training

Figure 1   Organization Chart of Residential Life

routines. I deal with the two routines in one vignette be-
cause the changes I discuss implicated both routines. I do
not describe the budget routine here because it is very
complex, takes a great deal of space to describe and even
more space to describe the ways that it did and did not
change. In all cases the changes that took place are much
more complex than I could ever describe in an article. I
have portrayed the essence of the most significant
changes for organizational members. The vignettes vary
in length because the complexity of the changes in the
routines and of the implications of the routine changes
varies. I have placed the vignettes in order of increasing
complexity and, therefore, length.

Who Broke this Mirror?   There are many aspects to
finishing the school year and closing the residence halls.
People who have been together for the year need to have
opportunities to say good-bye to each other. Students
need to pack up their belongings and move out. Facilities
needs to clean the rooms and make them ready for sum-
mer conferences and other uses. I focus on one aspect of
this process, which involved the inspection of rooms and
the assessment of fines.

The logistics of damage assessments are complicated
by several factors. The assessment needs to be made after
most possibility of incurring damage has passed. Student
schedules at the end of the term are both extremely con-
strained and unpredictable, influenced by finals sched-
ules, parents' demands, and the need to spend time with
good friends and lovers they will not be seeing for several
months. Unresolved roommate disputes often further
complicate the process of assessing damages. Add to all
this the fact that the assessments are done by resident staff
who are often experiencing many of the same pressures.

One consequence of these complications is that room
inventories for damage assessment often took place after
the students left. Building directors were unhappy with
this situation. When they talked to me about their con-
cerns about room damages, the problems they cited sur-
prised me. They were not that Housing had a hard time
getting parents to pay the bills or that there were disputes
about which roommate was responsible for the damage.
Instead, building directors related that they were paid too
easily, that they often dealt only with the parent's (usually
the father's) secretary, and that they did not have the
sense that the student was being held accountable in any
way for behavior that resulted in the damage. They felt
that learning how to take care of one's room was part of
the education about the transition from living with one's
parents to living on one's own that Housing was supposed
to provide.

One of the building directors developed a system for
checking people out of their rooms that resolved this
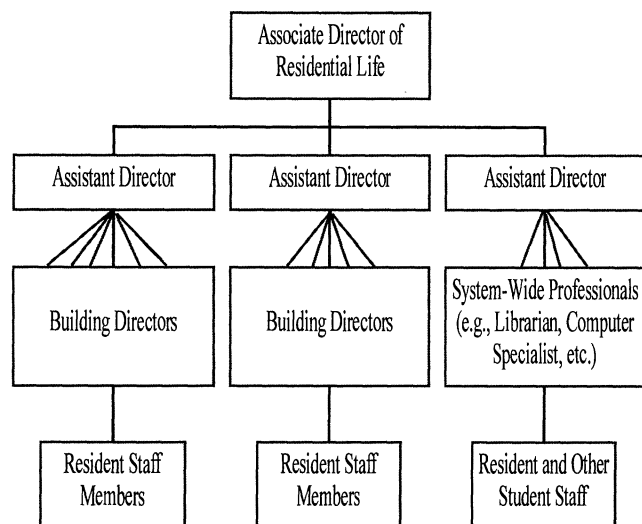
problem. It involved developing a room inventory that was filled out at the beginning of the year by the room residents and resident staff. This inventory listed the furniture in the room and its condition as well as the condition of the room itself. At the end of the year, resident staff members met with the room residents before they moved out to go over the inventory. Ideally, both room residents were there for the inventory. This allowed for a discussion of what deterioration had taken place in the room and for assignment of financial responsibility for the deterioration. This system provided good information about room damage, but more than that it confronted students with the damage that they had incurred and the fact that someone would need to take financial responsibility for the damage. Thus, it increased the likelihood that students would take personal responsibility for damages they make to the room, and enabled building directors to fulfill more of what they saw as their educational mission. This new system started to be adopted by building directors in the second year of my observations. Every building director used it by the end of the four years of observation.

Moving In and Moving On. "Smooth Move"—the local newspaper announced the first year of a new process for moving 10,000 students into a dozen residence halls over a three-day weekend.

> "Last year was hellish," said one student. "People were running every which way. People were stuck in traffic jams for over an hour."
>
> This year, however, when a traffic jam was imminent, parents would cooperate and avoid a potential bottleneck.

These excerpts are taken from the local newspaper during the first year of a change in the move-in routine. Before the change, Housing announced the three days of move-in to the students, and each of the residence halls handled the move in their own way. Despite various efforts to make the process go smoothly, there were invariably traffic jams and long waits as 10,000 students attempted to move in to a dozen residence halls. The result was angry parents and students and a residue of hostility that often lingered long after everyone was moved in. When the routine was changed, it was taken over by a central administrator who coordinated with the city police department to change the traffic flow so that streets in front of residence halls were all one-way and partially closed (i.e., traffic that did not need to go through these streets was diverted). Cars were allowed to pull up in front of a residence hall and were given thirty minutes to unload. Student welcoming committees with dollies helped to unload. Families could take their empty cars to satellite parking lots and could spend the rest of the day unpacking the student's belongings without causing a traffic jam.

This change all went very smoothly. Although move-in had been handled differently in the past, all those who were immediately involved were apprised of the change and supported it. The change did not disrupt existing relations among the relevant participants and it was consistent with widely held notions about what Housing should be doing. The change produced other changes, but none that were unwelcome. For instance, there were fewer angry parents to deal with as a result of the change. No one found that a bothersome outcome.

Once these changes were in place, organizational participants turned their attention to further refinements. For instance, students often bought carpets remnants for their rooms in the residence halls. Vendors had, over the years, started to sell their remnants in the lobbies and just outside the residence halls. This had a tendency to clog the main entries to the halls and to block the flow of traffic into the residence halls. A further refinement on the move-in routine was to establish a place for vendors to show their wares that was accessible but did not impede traffic. This sounds easy enough, but actually involved considerable interaction with the vendors to decide who would be allowed to sell their wares and what restrictions would be placed on their operations (Feldman and Levy 1994).

Refinements generated internally were not the only reasons that the move-in routine changed. Eventually the new routine ran up against a part of the university structure that no one had envisioned as relevant: the decision process in the athletic department. When the new move-in routine was established, the schedule was such that the students started moving in on the Saturday before Labor Day, a time when the city is typically empty and it is relatively easy to change traffic patterns. The two days after Labor Day were registration and classes started on Thursday. The first home football game was either the first or second weekend after Labor Day. Thus, the students had a short amount of time to adjust to their new homes before classes started and campus activities began.

One year, however, the athletic department (unbeknownst to Housing officials) scheduled the first home game for the Saturday before Labor Day. This caused several problems for Housing. Move-in would normally have started on the day of the football game. Large State University has one of the largest football stadiums in the country and it is always sold out. The increase in the population of the town is dramatic on game days. Game day would certainly not be a good day to change the traffic pattern and the city would certainly not approve it. Thus, the options were to open the residence halls either before the game or after. If students moved in before the game, they would have approximately a week before

classes start with nothing to do except attend one game. Ten thousand students with nothing to do for a week did not look good to housing officials. If students moved in after the game, they would have no time to adjust to their new surroundings or to register for classes before classes started, and would not be able to attend the first football game. Eventually, the housing division changed the move-in date so that move-in was virtually completed before the weekend began. They also provided activities for students to engage in between move-in and the beginning of classes. This was not an easy change to make on the fly; earlier knowledge of the athletic department's decision would have made the change easier.

The next stage in this routine change came to my attention after the observation period had ended, when I learned that the director of the athletic department was serving ice cream to the students who were moving in. Clearly, Housing had extended its outreach schema. The first outreach was to the city officials and had resulted in closed streets. This new outreach was to the athletic department, and we can assume involved increased communication with the athletic department about such things as football schedules. The participation of the athletic director in the move-in routine implies that the new outreach has resulted in his caring about the success of the move-in routine.

A Tale of Two Interpretations.   Every year, Residential Life hired approximately 350 students to live in the residence halls and maintain a 24-hour staff presence. The routine for hiring these people had been very decentralized. This decentralized process made it so that neither Residential Life nor the applicants were able to institute economies of scale which could have resulted from the fact that approximately 350 people were being hired at the same time and applicants were applying to more than one location. Virtually everyone involved with this routine believed that it needed to be accomplished in a more efficient manner. A central administrator organized redesigning the routine.

An idea important to the redesigned routine was that applicants could be screened centrally. The central administrator designed a screening process that used many of the ideas that the directors of the residence halls had developed over the years. The new hiring process started with an information meeting run by a central administrator with participation of building directors and current resident staff members. Anyone who wanted an application had to attend one of two meetings. Applicants were asked to visit three buildings that they were interested in working in and to list them in order of preference. Buildings were instructed to provide opportunities for applicants to visit. Then applicants were to attend two class

sessions that were facilitated by professional Residential Life staff (central administrators and building directors). The classes consisted of some lecture and some group exercises. During the group exercises applicants were observed and evaluated by resident staff. Afterwards, the staff of the central administrators tabulated scores, and applicants who scored above a certain level were sent on to the buildings they had listed as their preferences for further interviewing. From this point on the process took place in the residence halls, though certain constraints (e.g., on the amount of time spent with each interviewee, on types of questions asked, and on rationales for decisions) were established by the central administrators. After the resident staff and building director in each building had decided who they wanted to hire, the building directors all gathered to compare lists and resolve any conflicts over who would hire a particular person. Each applicant received only one offer. A central administrator facilitated this last meeting.

One of the outcomes of this centralized screening process, which everyone pretty much agreed about, was that the quality of the applicants who made it through the process was more uniform than had been true in the past. People were selected for their abilities to conceptualize and communicate, their capacity for group participation, their tolerance of others, their self-confidence and maturity, and potential for leadership, as well as their understanding of the staff role. All of these characteristics were universally valued, but the outcome of applying them to all resident staff was not. In fact, this outcome created a divide between the central administrators who thought that this was a great advantage of the process and many of the building directors who thought that this was a disadvantage.

The central administrators saw the staff as an opportunity to create a Housing-wide staff who could provide expertise about issues of relevance in the residence halls. This interpretation resulted in changes in the training routine, namely the creation of specialist groups. These are groups of resident staff members who would specialize in particular issues such as alcohol and drug abuse or eating disorders. These groups would consist of a person from each residence hall and would meet with a specialist in the issue so that they would have the best possible information. The group members would be able to communicate this information with staff members in the residence hall in which they worked, and would also be available in their residence hall as an expert. This specialist system requires that all resident staff have the ability to assimilate and communicate the information and to provide guidance with respect to their specialty. Thus, the

screening process that produced such a uniformly qualified staff was essential to the specialist system.

The building directors were not so pleased with the uniform outcome. They agreed that the qualities that were emphasized were good, but they saw the uniformity itself as bad. What was important to the building directors was to build a team of staff members that they could rely on to deal with issues that would arise over the next year in the residence halls. The resident staff are often the first people to deal with these issues. Building directors preferred teams that consisted of people with *complementary*, rather than uniform, skills and perspectives that could be said to represent the population of students in the residence halls. The idea here is that the resident staff as a whole should have the requisite variety[1] (Conant and Ashby 1970, Weick 1979) to approximate the variety in the resident population, and that they should be able to turn to one another for insights as to how to deal with particular problems arising in the hall.

This idea is illustrated by a hiring discussion that took place early in the field work. The person being considered had lived in the same residence hall where he wanted to work. He was known by the resident staff to be a "partyer." The discussion involved the fact that he would probably continue to party while being a resident staff member, and that would be a problem. On the other hand, people argued that his partying would help him relate better to people who lived in the hall with whom some of the other resident staff did not relate well. The ultimate decision in this case was to hire him. Uniformity was not what they were seeking to promote.

Thus, the hiring routine changed so as to produce much greater uniformity among resident staff members, and this enabled a change in the training routine that focused on the development of specialists who had expertise in particular issues that commonly arise in the residence halls. Though the changes in these routines may seem mundane, they produced some rather large changes in the way relationships were structured in this organization. In the old routines, the connections that resident staff had were to the building director and the other resident staff members within a particular residence hall. In the new routines, these connections continued to exist but were attenuated by the emphasis on a new set of connections outside of the residence hall in which they worked. Because of the specialist system, important connections for the resident staff member were to other resident staff who specialized in the same issue and to the expert in their specialization.

The changes in relationships produced a different way for resident staff to deal with problems that arose in the halls. Take, for example, the way two different situations involving residents who were thought to have bulimia

were treated. The first situation took place before the specialist system had been developed, the second after. In the first case, the building director was informed that there had been a lot of vomiting in public restrooms. She held several information meetings for the resident staff members so that they could supply information and support for each other and for residents who were affected by the situation. She alerted staff members about the situation and provided them with information about the disorder. Later, staff members received more information when the building director coordinated staff support for another resident who had recovered from bulimia but was suffering from "deja vu experiences." A few weeks later the building director discussed the disorder with senior staff members and talked about their need for information. They created an in-house expert and staff support system. The staff members coordinating this effort met with the building director "to discuss strategy, goals, and hoped-for outcomes, and to review the resource materials at hand."

The specialist system that was developed as part of the new training routine provided another way to deal with such incidents. In the second bulimia case the resident staff member suspected a person of bulimia and contacted the resident staff specialist on eating disorders. The resident staff specialist contacted the outside expert who provided information about bulimia. The resident staff specialist urged the suspected bulimic to get medical care. As in most cases, including the other case of bulimia discussed above, approaches to the bulimic showed no discernable effect.

In the first incident the appearance of bulimia was treated as something that would affect the entire community of residents and resident staff. The staff members, in particular, were provided with lots of information and support so that they could deal with their own feelings and the feelings of the residents who were affected by the bulimic behavior. In the second incident, the bulimia was treated as the domain of the eating disorder specialist within the residence hall, and the eating disorder experts outside of the residence hall. The incident was not treated as something that affected a community of residents and resident staff and, thus, was not an opportunity for building community within the residence hall.

In the second incident the building director did not find out about the suspected bulimia until the end of the year when the resident would not move out of the hall. At this point, he found out that the resident had been having problems throughout the year and that two of his resident staff members (the one who lived near the resident and the eating disorder specialist), as well as many residents

knew about at least some of the problems. This was frustrating for him because it put him in the position of "acting like an aggrieved landlord" rather than an educator. He was unable to have any effect on the suspected bulimic, but more than that, he was unable to use the incident as an opportunity to educate the rest of the community and to help them moderate their reactions toward the suspected bulimic. In assessing this situation it is important to know that because of the need to vomit privately and to dispose of the vomit, a considerable stench is often associated with bulimia in a residence hall. Residents living nearby are often quite upset by the smell and may be hostile to the resident. Indeed, in the case reported above, such hostility was a part of the community behavior. However, the building director did not have the resources he was used to having that allowed him to do his job in the way he thought he should do it, and he did not have a way of using the new resource (specialists and the specialist system) provided by the new routine.

Discussion

In this section I first present some of the dynamics of the routines I observed. I then formulate a performative model of routines that emphasizes that agency is an important element of routines and helps to explain how routines change. Finally, I discuss how understanding routines as important to change contributes to our understanding of organizational routines as grammar, of organizational learning and of the process of institutionalization.

Dynamics of Routines

Participants in routines sometimes change them. My observations of routines suggest that this occurs for several reasons. These reasons are related to different kinds of outcomes. One reason is that sometimes actions do not produce the intended outcomes. Another is that sometimes actions produce outcomes that create new problems that need to be solved: Actions produce unintended and undesirable outcomes. A third reason is that rather than producing problems, actions can result in outcomes that produce new resources, and therefore enable new opportunities (Feldman 2000). A fourth possibility is that the outcome produced is intended but that participants still see improvements that could be made. For the sake of brevity I refer to this as falling short of ideals. I use the term "ideals" for a broad category of normative influences that include values, goals, missions and expectations.

Each of these types of outcome is associated with a change response. When actions do not produce the intended outcome, or produce an unintended and undesirable outcome, participants can respond by *repairing* the routine so that it will produce the intended and desired outcome. The result may be to restore the routine to a stable equilibrium and may not be associated with continued change. When the outcomes enable new opportunities, participants have the option of *expanding*. They can change the routine to take advantage of the new possibilities. Finally, when outcomes fall short of ideals, they can respond by *striving*. Unlike repairing, striving is, by definition, attempting to attain something that is difficult, if not impossible, to attain. People engaged in the routine continue to alter the routine so that it allows them to do the job in a way that seems better to them. For instance, one may strive to be a better teacher, but having achieved this goal, one can strive to be a better teacher yet. Because the standard is continuously changing, it can never be achieved. Both *expanding* and *striving* have a high potential for continuous change because of their relation to what is desirable. Both affect routines in an ongoing way because they alter the standard for doing work.

These outcomes and the change responses may occur in relation to either the process of the routine or what the routine accomplishes. For example, one outcome could be that the routine itself wastes the time of organizational members, that if the routine were different they could be accomplishing the same tasks with less effort. Such an outcome played a role in the hiring routine where the very decentralized routine meant that there was a great deal of duplicated effort. Or, the hiring routine could inhibit or enhance the ability to make appropriate hires. These two types of outcome (the process of the routine or what the routine accomplishes) may interact as when the more efficient hiring routine altered which staff members were hired.

In the following I discuss the changes in each of the routines described earlier. This discussion is summarized in Table 1, in which each of the four categories of outcomes are illustrated with examples from each of the routines. In this discussion I do not distinguish between the process and what the routine accomplishes, as either of these may be a reason for changing what is done the next time the routine is performed.

The damage assessment routine is the simplest of the routines I studied. Change in this routine was related to building directors' discomfort because the routine placed them in the role of simply procuring funds and did not allow them to act as educators with respect to this one aspect of the job. The routine also allowed students to "get off easy," as many of them were never held responsible or even confronted with the damage they had

Table 1   Types of Change in Routines

Type of Outcome and Change Response	Damage Assessment Routine	Move-In Routine	Hiring and Training Routines
Intended outcomes not achieved **Repairing**		Athletic dept. decision disrupts smooth move.	New routines did not reduce time demand on building directors.
Unintended and undesirable outcomes produced **Repairing**	Old routine promotes business role of building directors at expense of educator role.	Old routine creates bad first impressions and increased the difficulty of building community.	Greater uniformity among resident staff members reduces variety below requisite level. Specialist system alters communication network.
Outcomes produce new possibilities **Expanding**	Increased communication creates opportunity for confrontation and education.		Greater uniformity among resident staff members creates opportunity to develop specialist system.
Outcomes (whether intended or not) fall short of ideals **Striving**	Students get off easy. Building directors do not play role of educators.	Move-in routine is inefficient and creates discord. Each year routine becomes more efficient and gains praise from many.	Hiring and training routines waste time of students and staff.

done to their rooms. Thus, the routine had the unintended and undesirable result of casting the building directors as business managers. It also fell short of their ideals by not allowing them to confront and educate the students. When one of their peers came up with an idea that would rectify these shortcomings, they quickly adopted it. The increased communication in the new routine did create an opportunity for increased confrontation and education. To my knowledge this has not been used except in the limited capacity for which it was originally adopted. The possibility is there. Over time there may be increased uses of this capacity.

The move-in routine is slightly more complex and provides an example of not only the potential but also the realization of continuous change. This is an excellent example of both *expanding* and *striving* and of how the two are related. One set of changes provided opportunities for additional changes. The first set of changes also expanded the notion of what was possible and, in turn, changed the standard or the ideal that people were striving to achieve. The move-in routine as it was at one point enacted was extremely frustrating for everyone involved, including people who worked in Housing, students who were moving in and their parents, and even the community. The process was inefficient and took more time than it needed to. In this sense it fell short of ideals. It also produced an unintended and undesirable outcome in the form of a bad

first impression that made community building more difficult. One major set of changes that included negotiations with the city and adopting a similar process at all the residence halls was followed each year by other changes. Some of the later changes, such as moving vendors out of the residence halls to a common site, involved more complications and were more time consuming for the central administration than earlier changes (Feldman and Levy 1994). Without the earlier changes, this effort would make no sense, but the earlier changes revealed these aspects of move-in as the next area that could be improved. In this sense the outcome of the routine changed the ideal. Further changes occurred when the athletic department made a decision that threatened to disrupt the smoother move-in process. The changes that had taken place in the routine had established a new level of expectation, and members of the organization acted to maintain the new standard.

Change in the hiring and training routines provides excellent examples of all four types of outcome. At one point change was motivated by a sense that they could do the job better by being more efficient, and the changes that were made in turn made possible and motivated other changes. The changes in hiring and training produced problems in the sense that intended outcomes were not achieved. The changes did not reduce the amount of time that the building directors spent on hiring or training, but

instead made it more difficult for building directors to accomplish the work they wanted the routine to do: the creation of representative and cohesive teams. The changes also produced outcomes unintended by the building directors and undesirable to them. Greater uniformity among resident staff members reduced the variety on staff teams so that they were less representative of the population of residents in the halls, and the specialist system altered the communication network so that problems were less likely to be shared with other staff members and with the building director. However, the changes also produced new resources and, therefore, new opportunities. Centralizing the screening process provided an outcome, the uniformly qualified resident staff, which was a very useful resource for developing the specialist system. It is possible that the specialist system would have been developed without the centralized screening process. The sequence of events is, however, important. If the hiring routine had not changed, it would have been much harder to change the training routine. The creation of a more uniformly qualified staff created a resource that the central administrators could use to staff their specialist system.

Ideals or values are important for understanding the hiring and training routines. In fact, they are particularly important here because the changes revealed a divergence in the ideals of the central administrators and the building directors. At one point, building directors and central administrators shared an ideal of increasing the efficiency of the hiring and training processes so that they were less time consuming for all involved. However, at the point that the system began to produce uniformly qualified staff members, the ideals diverged. Central administrators saw an opportunity to create a specialist system that fit their ideal of increasing expertise for dealing with specific problems of individuals. Building directors saw the erosion of their ability to create the kind of staff teams that they felt were necessary for the well-being of the residence halls. Each group acted on their interpretation of the outcome of uniformly qualified staff members in their successive actions. In particular, the central administrators created a training program for specialists, while the building directors started to bypass the official hiring process so that their staff would be less uniformly qualified.

This routine demonstrates not only *expanding* and *striving,* but also both of these combined with conflict. New possibilities are being created, and they interact with both existing and emerging ideals, values, and goals. The divergence of ideals, values, and goals, and the resulting divergence in actions, suggests a high potential for ongoing change in this and related routines.

Performative Routines

The routines (and the way they changed) described here invite reflection on the definition of routine. The introduction to this paper offers a definition, and also provides a description of how routines were identified for the purpose of this research. The definition was that organizational routines are *repeated patterns of behavior that are bound by rules and customs and that do not change very much from one iteration to another.* The approach I took to identifying routines in the field was an emic approach, allowing the participants in the organization to identify what fit within this definition.

Following an "emic" approach to identifying routines leads to different ideas about what a routine is than an "etic" approach.[2] The "natives" identified a broad range of ideals, values, actions, and behaviors as parts of routines. Some of these actions might be ruled out of an etic definition of routine as indicated by Egidi in the paper that resulted from a Santa Fe Institute workshop on routines (Cohen et al. 1996). He reasons from the notion that routines consist of rule-following behavior to the understanding that "purely routinized collective behaviors are rather difficult to realize because to cover any possible contingency, they require a huge set of rules governing the interactions among actors" (p. 690). Based in part on this reasoning, he concludes that "routinized behaviors should . . . be based on the absence or the reduction of active thinking" (p. 695).

Latour's use of the terms "ostensive" and "performative" (1986) captures some of the difference in perspective that results from the etic and the emic approaches. Latour uses these terms in describing power, but the concepts apply as well to routines. An ostensive definition of a concept is one that exists in principle (Sevon 1996). It is created through the process of objectification as it is studied. A performative definition is one that is created through practice. "Society is not the referent of an ostensive definition discovered by social scientists despite the ignorance of their informants. Rather it is performed through everyone's efforts to define it" (Latour 1986, p. 273). Ostensive routines may be devoid of active thinking, but routines enacted by people in organizations inevitably involve a range of actions, behaviors, thinking, and feeling.

Including these aspects of agency in our understanding of routines suggests that we should think about performative routines as a flow[3] that includes the broad range of thoughts, feelings and actions that people experience as they engage in work. The performative model of routines as depicted in Figure 2 captures this range in a schematic form[4] and proposes conceptualizing routines as a cycle of plans, actions, outcomes and ideals. Plans and

actions produce outcomes that influence in conjunction with ideals or values what makes sense to do next. Outcomes at the "end" of each "round" can be compared with ideals as well as with previous plans and can feed into the plans for the next iteration of the routine. Outcomes also influence ideals or values when they change what people see as the possibilities. The interactions between the elements in the performative model as well as the cyclical quality of the model support the actions of *repairing, expanding* and *striving* that change routines. This performative model of organizational routines is an important, and heretofore missing, part of theories of organizing as an ongoing accomplishment.

The simple introduction of agency does not explain why systems might continue to change. We might ask, for instance, why people do not simply want to repeat their previous actions. The first two types of outcome in Table 1 (intended outcomes not being achieved, and unintended and undesirable outcomes being produced) suggest reasons for change, but not for continued change. The process is simple trial and error (Levitt and March 1988). Once the intended and desirable outcome is produced, the system should achieve an equilibrium in which a stable and relatively unchanging pattern of behavior can be enacted. Indeed, many theorists interested in the relationship between agents and structures have discussed the internal logic of systems, but change has not been a major feature of their theories (Bourdieu 1977, 1990; Giddens 1984). Such theories have often suggested that change is quite unusual (Sewell, 1992 p. 14ff). "It is characteristic that many structural accounts of social transformation tend to introduce change from outside the system and then trace out the ensuing structurally shaped changes, rather than showing how change is generated by the operation of structures internal to a society" (1992, p. 16). Sewell claims that change occurs specifically because structures are "multiple, contingent and fractured"

(p. 16) rather than monolithic. Thus, he suggests several reasons for change: that structures are multiple and intersecting, that schemas are transposable, that resource accumulation is unpredictable, and that resources themselves have multiple meanings.

These features of structure can help us understand why we might not see a new equilibrium even once intended (or originally intended) outcomes are achieved. They help us to see why the last two outcomes listed in Table 1 (outcomes produce new possibilities, and outcomes—whether intended or not—fall short of ideals) might occur. The transposability of schema, for instance, means that people can transpose interpretations from one situation to another, thus producing sources of change in systems that might otherwise be inert. The outreach schema used in the move-in routine, through which people and organizations outside of Housing are connected to Housing routines and become invested in their success, provides a good example of this transposability. Once this schema was enacted in relation to coordinating with the city, it could be transposed to other parts of the move-in routine (as we saw in the outreach to the Athletic Department) and to other routines (as we saw in the use of outside experts to aid in developing specialists in the training routine). Sewell's argument helps us to see that people in a position to influence an organizational routine may have various ideas about what should be accomplished by the routine, they may have many interpretations of the effectiveness of the actions taken, and they may have many interpretations of whether the outcome of the actions is a problem or a resource and, in either case, what to do about it.

Routines as Grammar

This image of change in routines adds to the one presented by Pentland (1995) and Pentland and Reuter (1994). They use grammar as an analogy to explain variation in routines. "In the same way that English grammar allows speakers to produce a variety of sentences, an organizational routine allows members to produce a variety of performances" (Pentland and Reuter 1994, p. 490). A grammar consists of rules about how the elements of the language (the repertoire) can be connected to create sentences that make sense to others who know the grammar. The same can be said of organizational processes such as routines (Salancik and Leblebici 1988). They consist of rules that allow people to select elements of a repertoire in order to construct sequences of behavior that make sense to others in the organization. This work has pointed out the importance of syntax to organizational process. My work suggests that this syntax changes, and it calls attention to the motivated agentic processes behind grammar change. Organization members not only use different

Figure 2   A Performative Model of Routine
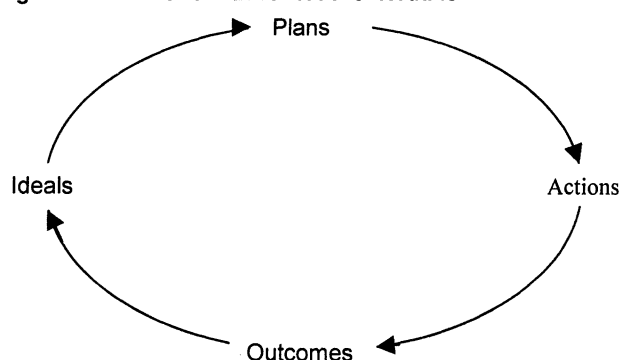
elements of a repertoire they have available, they also develop new repertoire or the equivalent of new words. And they develop new rules or new ways of putting elements together.

The new hiring and training routines added elements of repertoire such as class sessions for applicants, a "bid-matching" meeting to determine employment offers, training for specialists, and the inclusion of experts from outside Housing. The move-in routine added, among other elements, coordination with units outside of Housing, an element that was used twice. It also added help for people unloading their cars, and teams to keep track of how long cars are parked and to enforce the time limit. Eventually vendor stations were added. This addition of new elements continues, as indicated by the inclusion of the athletic director welcoming incoming students. The damage assessment routine changed the repertoire of actions taken by the resident staff both at the beginning of the year when they assessed the room before damage and at the end of the year when they assessed the subsequent damage. It changed the actions taken by the building directors, in that they did less damage assessment and had less contact with students' parents' secretaries.

The changes in these routines also involved new rules that affect the availability and choice of repertoire. Many of the rule or policy changes were about the distribution of authority. The central administrators became more responsible for hiring and training routines. They ran initial screening of applicants and much of the initial training of selected employees. They also established rules for parts of the hiring and training processes that were still run by the building directors. The new move-in routine altered the distribution of responsibility within Housing. Residential Life took on the task of move-in and would be responsible for it in the future. The central administration of Residential Life, likewise, took on the coordination tasks and thus established rules about who did what.

Discussion of new rules or policies suggests that new routines are being imposed on lower level organizational participants by upper level organizational participants. This is consistent with a rational perspective on organizational routines as Miner has shown in her discussion of the vacancy assumption (1987, p. 333). The work of Miner (1987, 1990, 1991) and Burgelman (1994), however, suggest that policy or rule changes may simply be the codification of changes that are already made. Just as words enter the dictionary only substantially after they have been used for some time, rules or policies may codify changes as much as they make them.

The changes in rules or policies in the Housing routines discussed in this paper play many different roles in the process of routine change. Sometimes they provided resources of both time and ideas that allowed lower-level employees to make desired changes. In the move-in routine the policy changes made possible ways of doing things that the lower levels could not bring about on their own, but were entirely consistent with their ideas about how the process should be run. In other instances, the relationship is more complicated. The hiring and training routine, as discussed above, illustrated conflict between the ideas of the hierarchical superiors and their subordinates. This conflict emerged after the decision to centralize authority was made with nearly total support of the building directors. This centralization, however, brought into view the difference in perspectives of the two levels. With central administrators making the rules, building directors sometimes happily followed them, sometimes reluctantly followed them, and sometimes did not follow them at all.

One can, of course, wonder whether it is appropriate to classify any of the rule and repertoire changes as new, or simply borrowed from another context. Levitt and March (1988) regard this form of appropriation under the heading of organizational search in which "an organization draws from a pool of alternative routines" (p. 321). March and Olsen (1989) give an example from the Norwegian oil fields. Having no prior experience with oil, the Norwegian authorities used their experience with shipping as a source of routines. Thus, for the purpose of ensuring the safety of an oil rig, it was considered to be "a somewhat peculiar ship" (March and Olsen 1989, p. 36). Other schema such as "good oil field practices" were also transposed from one setting to another. The question is whether saying that the changes in the routine are not entirely novel is the same as saying that one is just sampling from an existing repertoire.

Here the linguistic metaphor can help us think about what is integral to the existing structure and what is new. Let me paraphrase different perspectives in simple (perhaps simplistic) linguistic terms. Pentland (1995) and Pentland and Rueter (1994) are saying that within a particular structure there are many ways of saying the same thing. We can, for instance, indicate approval in a variety of different ways: good, ok, nice work, etc. Levitt and March (1988) and March and Olsen (1989) are saying that we can draw words from other structures to show approval. We can, for instance, draw on different languages and say bon, tres bien, bueno, etc. I am saying that we can make up new words within our own language structure for showing approval: rad, keen, bad, etc. Each of these are different processes for changing how we show approval, and there are strong similarities between

the three processes. In all cases, "the same thing" becomes a slightly different thing because it is said in a different way. The three processes, however, differ in their increased emphasis on the creativity of the agents as the performers of organizational routines.

Organizational Learning

Many scholars have been concerned recently with how organizations learn (Argote 1999, Argyris 1976, Argyris and Schon 1978, Levitt and March 1988, Glynn et al. 1994; Schein 1993, 1996; Senge, 1990). While some of these scholars have indicated that routines are a source of organizational learning (Levitt and March 1988, Miner 1990), the view has not been widely held. I think that has been due partly to the lack of understanding of the potential for organizational routines to change. In the following I pursue the suggestion that Glynn et al. (1994) make to interweave "learning through the fabric of the organizational literature, rather than delineating it further from other organizational concepts" (p. 44). Specifically, I show that the process of engaging in organizational routines can be a process of learning. From my observations, organizational routines involve people doing things, reflecting on what they are doing, and doing different things (or doing the same things differently) as a result of the reflection. Thus, organizational routines can include the "double loop learning" that Argyris (1976) and Argyris and Schon (1978) have identified.

This perspective on routines is consistent in several ways with the work of Nonaka and Takeuchi on knowledge creation (1995). They claim that "seen from the vantage point of organizational knowledge creation, double-loop learning is not a special, difficult task but a daily activity for organizations" (p. 46). They also argue that change in organizations does not simply consist of responses to the external environment, but also consists of internally generated knowledge. Finally, they argue that there are four modes of knowledge, and that the interconnection of these four modes in a continuous spiral represents the process of knowledge creation.

The four modes they propose are internalization, socialization, externalization and combination.[5] Each mode represents the conversion of knowledge between tacit and explicit forms at different ontological levels. Internalization represents the movement from explicit to tacit. Knowledge becomes embodied and becomes operational knowledge. Socialization represents the conversion from tacit at the individual level to tacit at the collective level. Embodied knowledge is shared and becomes sympathized knowledge. Externalization is the movement from tacit to explicit. This movement often takes place through the use of metaphor, analogy, and models.

Figure 3   A Performative Model of Learning in Routines
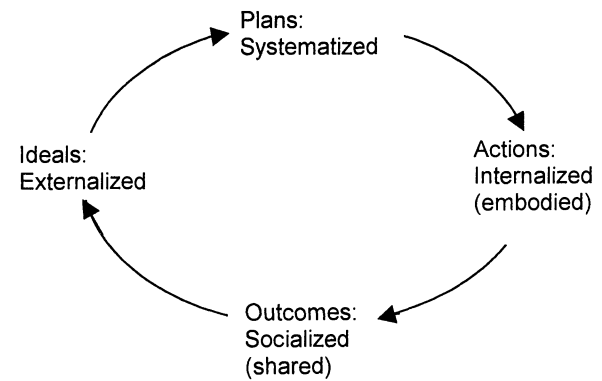
Through these means what has come to be known is conceptualized. Finally, combination is the conversion from explicit to explicit. In this conversion knowledge, held at a lower ontological level, becomes systematized at a higher level. These four modes readily map onto the flow diagram of routines as shown in Figure 3. Starting at the top of the diagram, plans become internalized or embodied into actions. This embodied knowledge becomes shared or socialized as the actions manifest themselves in outcomes. This shared knowledge is externalized as people compare it to models or ideals. These models or ideals then become systematized as plans that can be enacted in the next iteration of the routine.

An important difference between Nonaka's and Takeuchi's (1995) understanding of organizational learning and mine is that what they see as a process that takes place across levels of hierarchy within an organization, I see happening within organizational routines. Nonetheless their portrayal of the process of learning provides a useful perspective on the dynamics of organizational routines. It allows us to see that the process of change in organizational routines is also a process of organizational learning. Furthermore, we see that within this process of learning, there is movement between the level of the individual agent and the collectivities to which the individual belongs. While actions may be taken by individuals, the understandings of the outcomes and how they relate to ideals and values is often socially constructed. This is consistent with the findings of Brown and Duguid (1991) and Lave and Wenger (1991) on situated learning, with the theories of Glynn et al. (1994), and with March and Olsen's (1976) complete cycle of choice.

Senge defines a learning organization as "an organization that is continually expanding its capacity to create its future" (1990, p. 14). My research suggests that organizational routines play an important, if mundane, role in this continual expansion. Because the expansion is nei-

ther spectacular in itself nor caused by anything spectacular, it may be easy to overlook as a source of continuous change. My research suggests that would be a mistake.

Institutionalization

Emphasizing agency in organizational routines is important for understanding the role of routines in institutions and the creation or recreation of structure. In their article on institutionalization as structuration, Barley and Tolbert claim that, "If institutional theory is to fulfill its initial promise, it must devise more detailed models of institutional dynamics as well as a set of methods for more directly investigating the recursive relation between structure and action" (Barley and Tolbert 1995, p. 37). They precede this statement by noting that "In particular, as DiMaggio (1988) notes, researchers have yet to study agency's role in the creation and reproduction of institutions" (1995, p. 36).

The perspective on change in organizational routines that I have described sheds light on the role of agency in the way structures are transformed and modified through processes of everyday organizational life. Miner has described how evolving and idiosyncratic jobs change organizational routines (1991). In this case, we see the converse—changes in routines alter the meaning of jobs. As a result, the structure of the organization is transformed. The damage assessment routine provides a particularly good example of the process of institutionalization, as the motivation for building directors favoring one damage assessment routine over another is clearly related to the norms associated with the job rather than the "result of rational calculations aimed at efficient action" (Barley and Tolbert 1995, p. 53). The earlier routine for damage assessment is actually more efficient if the goal is simply to defray the costs of the damage. It is more efficient because it involves fewer people and does not require scheduling during a time when schedules are both very full and unpredictable. The adopted routine for damage assessment, however, allowed the building directors not only to defray the costs of the damage (something that is clearly required by the organization to which they belong), but also to enact their understanding of their jobs as people who enable others to make a transition from living with their parents to living on their own. As a result of the adoption of this routine, then, the meaning of the job of building director is moved further in the direction of the ideals or values that the building directors in this system generally hold.

The changes in the hiring and training routines also have a profound effect on the structure of the organization, in part through their effect on the meaning of the building director job. In this case the effect is in the opposite direction from the effect of the damage assessment routine. The changes move the building director job further from the ideals that the building directors hold about their job, and instead transform the job in the direction of the goals of the central administrators. The effects of this change on the relationships among building directors and resident staff members and residents, as illustrated by the bulimia stories, provide a particularly good example of the far-reaching effects that changes in routines can have on the structure of an organization (Feldman 2000).

A similar point is made by Barley in his studies of the effect that the introduction of CT scanners to radiology departments had on role structures (1986, 1990). He ascribes the changes he observed in the role structures in radiology departments to changes in the scripts people used to interpret their roles. Over time these scripts change and drive change in the institutional order in a manner similar to what plans and ideals do in routines. They both introduce the actions and reactions of agents into the otherwise inert structure.

Conclusion

In this paper, I have given an account of how and why several organizational routines changed. I demonstrate that routines are not inert, but are as full of life as other aspects of organizations. I have located the potential for change in the internal dynamics of the routine itself, and in the thoughts and reactions of the people who participate in the routines. By doing so I suggest both that change can be more ordinary—and that routines can be more extraordinary—than they are often portrayed. It is important to note that what I have identified is a *potential* that was enacted in the cases of routines that I observed. Others have observed similar processes (Burgelman 1994, Miner 1991, Miner and Estler 1985), but this potential may not be realized in all cases.

The routines studied here have several defining characteristics. All of them took place annually, with a fair amount of time between iterations. The participants in the routines, for the most part, were professionals who exercised discretion in the way they performed their tasks. Moreover, the organizational context encouraged and allowed change. The hierarchical supervisors supported change efforts, and the loosely coupled nature of the organization reduced some of the limitations on change efforts. While these characteristics do not hold for all organizational routines, neither are they particularly unusual. People who work in schools, hospitals, government agencies, nonprofit organizations, and many corporations will find that many of their routines have similar characteristics.

Exploring what happens to routines in other conditions

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is an area for future empirical research. For instance, routines that take place more often might allow for quicker change, but they may be more difficult to change if one is involved in the next iteration soon after experiencing the last one. Routines performed by people with little discretion seem unlikely to display the kinds of change exhibited here, though Roy (1959) has definitively shown that these people have much more discretion, particularly over their work routines, than one might at first surmise. The routines may have a harder time changing if they are coupled with routines performed by people distant from the people making the changes. Whether there are connections between participants in the different routines will be one factor in how difficult they are to change (Feldman and Rafaeli 2000). Research on such things as "boundary objects" has helped us to understand how change can be undertaken across organizational boundaries (Carlile 1997) and could be applied specifically to change in organizational routines.

The potential that I have revealed for ongoing change in organizational routines is intrinsic to organizational routines so long as human agents perform them. People will tend to breathe life into the routines they engage in because of the relationship between their behavior and their plans and ideals. Organizational, temporal, or other conditions may inhibit that potential from being realized for any particular iteration of a routine. Both scholars and managers may have an interest in understanding more about the rate and the direction of change that this potential can take.

Acknowledgments

Endnotes

[1]The concept of requisite variety suggests that the variety in a system needs to be at least as great as the variety in the environment.

[2]See Harris (1990) for a description of these concepts and their use in anthropological research.

[3]See Pentland et al. (1994) and (1996) for other discussions of routines as flow.

[4]I am grateful to an anonymous reviewer for suggesting this form of the graphic.

[5]The following is a summary of pages 56–72 of *The Knowledge Creating Company* by Nonaka and Takeuchi (1995).

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