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UNDERSTANDING GROUP BEHAVIOR

How a Police SWAT Team Creates, Changes, and Manages Group Routines.

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ABSTRACT

This paper focuses on a Special Weapons and Tactics (SWAT) police team, and on how this team creates, maintains, and modifies a repertoire of routines. Using data collected through interviews, observation, and archival sources I explain the different processes used by this team to maintain a set of routines that is well-practiced but that can also be modified. The SWAT team engages in activities to develop routines held in common, activities to incorporate new knowledge into the routine repertoire, and activities to organize the repertoire in the minds of individuals. The result of these activities is a set of behavioral routines that aid the SWAT team in the execution of its activities.

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This paper focuses on a Special Weapons and Tactics (SWAT) police team, and on how this team creates, maintains, and modifies a repertoire of routines. Using data collected through interviews, observation, and archival sources I explain the different processes used by this team to maintain a set of routines that is well-practiced but that can also be modified. The SWAT team engages in activities to develop routines held in common, activities to incorporate new knowledge into the routine repertoire, and activities to organize the repertoire in the minds of individuals. The result of these activities is a set of behavioral routines that aid the SWAT team in the execution of its activities.
Routines are pervasive in groups and organizations, serving a critical role to the functions and tasks that they must accomplish. In this paper, I use the definition of a routine as a set of actions by individuals that make up a larger unit of performance that repeats over time. Routines are codifications of sequences of events, and act as a coordination mechanism among individuals to complete a task (Feldman, 2000; Gersick & Hackman, 1990). They also contribute to the development of a common understanding of the work of the group (Feldman & Rafaeli, 2002; Pentland & Reuter, 1994). Thus, for example, an academic department that allocates teaching each year following a particular routine accomplishes two things. First, it ensures that every course has an instructor and that every instructor has the requisite number of courses and, in this manner, it coordinates the teaching activities of department members. In addition, the enactment of the allocation routine provides information on how the department operates to those that scrutinize it. In a team of consultants, managers use routines to assign individuals to tasks, based on their specialties and availability and those individuals, in turn, use routines to accomplish different aspects of the work required. As before, the routines used are both effective to coordinate work and to provide information on how the team operates.

Fundamental conceptions of routines, which are a defining part of our understanding, focus on their stability (March & Simon, 1958), their machine-like efficiency (Morgan, 1997), and their limitations for addressing dynamic situations (Gersick & Hackman, 1990). More recent work on the use of routines, however, adds a more complex perspective. For example, in her analysis of the workings of university residence halls, Feldman (2000) provides a clear and vivid picture of how a recurring set of organizational challenges provides opportunities for the enactment of routines as well as opportunities for their modification. Recent research has also pointed out that routines are not just appropriate for well-defined situations, but also for situations that involve high levels of exceptional work, such as customer service requests (Pentland & Reuter, 1994). These perspectives see routines as changeable and complex, moving us away from mechanistic conceptions to more dynamic perspectives of routines, and, more broadly, of organizations.

Although these more complex perspectives on routines are useful because they provide us with a clearer understanding of how routines function in organizations, they also raise additional questions. In particular, if routines are changeable elements in groups and organizations, how does that change come about? How is stability, a definitional property of routines, maintained when change is taking place? Finally, how do individuals, the ultimate carriers and users of routines, make sense of change and stability processes simultaneously? Although we know that routines reside in the minds of individuals (Feldman, 2000; Lord & Kernan, 1987) and that as elements of knowledge they must be accessible to the group through micro-level interactions to be evaluated and adopted (Argote, Gruenfeld, & Naquin, 2001), we know little about the actions of individuals and the processes they use within a social context to adopt and change routines. In this paper, I examine the processes that make maintenance and change in a repertoire of routines possible. In particular, I focus on how individuals within one group, a Special Weapons and Tactics (SWAT) police team, maintain and modify a repertoire of task routines. Using a combination of qualitative data including interviews, observation of training sessions, and archival sources, I describe how individuals in this group engage in collective action to maintain their routines by continually re-creating them and how they modify routines by incorporating new knowledge derived from individual officers’ experience. To explain the collective action required to manage these routines, I will describe both the processes through which officers build a common understanding of the group’s task using these routines, and the processes most commonly used in this team to adopt new routines or modify old ones. In addition, I also develop an explanation for how officers reconcile both the stable and changeable properties of routines through the processes they use to organize these in their minds. Thus, the focus is not just on the ongoing social process of routine execution or enactment, but also on the social processes that enable the maintenance and change in the routines.

The findings in this paper push us to develop a more complete understanding of the role of routines in groups. The data I present show that it is in the interactions among group members that routines are collectively evaluated and understood, while at the same time it is individuals in the group that carry routines, giving them their stability, and initiating their change. This paper is presented in the following manner. I begin by considering a literature background on routines as examined at the organizational, group, and individual levels. I then explain the setting of the SWAT team, data collection, and analysis to examine routines in this group. I follow this with the findings from this research and conclude with a discussion of those findings and implications for research.
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on routines from an organizational perspective emphasizes the dynamism
of routines. However, it still does not explain how routines are simulta­
neously maintained and changed.

The Dynamic Nature of Routines

Routines have been widely recognized as important since the beginning
of organization studies (Cyert & March, 1963; March & Simon, 1958; Mor­
gan, 1997). Early conceptions of routines see them as tools that individuals
use to accomplish their work, but also as mechanisms that ensure the
per­
sistence and survival of organizations. In this view, the emphasis is on the
stability of routines, and the difficulties in changing them, since they are
seen as tools that help maintain the organization. Over time, scholars
incorporated this conception of routines into views that use images of organi­
zations as “mechanistic” (Morgan, 1997).
These perspectives of routines have undergone significant revisions. Re­
cent research tends to view routines as dynamic elements of organiza­
tions (e.g., Feldman, 2000; Pentland & Reuter, 1994). Thus, instead of
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The Interactions of Individuals in the Group

Taken down one level of analysis, the literature on routines in groups is
limited, with Gersick and Hackman (1990) presenting the most relevant
and comprehensive treatment. They explore how habitual behavior (such
as behavior that represents both social and task related routines) de­
velops, as well as situations where the group faces a need to abandon or mod­
ify these behaviors. Work in this vein is tightly linked to other literatures
that are helpful in understanding the adoption, maintenance, and change
of routines in groups. These literatures include work that focuses on the
development of common understanding in the group (e.g., Cannon-Bow­
ers & Salas, 2001), group learning (e.g., Argote et al., 2001; Edmondson,
2002), and the development of group norms (e.g., Feldman, 1984; Okhuysen,
2001).

By focusing on specific aspects of the group process, each of these litera­
tures provides us with insights on how routines in groups emerge, how they
are used, and how they can be changed. For example, the literature on
group learning suggests that a critical element in the process of changing
routines is reflection or evaluation of performance on the part of team
members (Edmondson, 2002), and which is engaged at moments where
the group faces new information, such as when a new member joins the
group (Argote et al., 2001). New members can exercise influence in a
group because they bring knowledge acquired through their own experi­
ence into the group (Argote et al., 2001) which can influence the develop­
ment of habits and norms in the group (Feldman, 1984; Okhuysen,
2001).

A critical element in the integration of new information, though, is the cre­
ation of a common understanding of the group task and a common inter­
pretation of the new information (Cannon-Bowers & Salas, 2001). Thus,
the social setting that the group provides acts as the arbiter for what knowl­
edge individuals adopt and which they do not. It is only when each of these
processes is in place that the group can make sense of their existing rou­
tines, acquire new knowledge, and incorporate it into their practices. Thus,
although the literature on groups does not have substantial coverage of the
phenomenon of routines, these literatures can be brought to bear to under­
stand how groups manage their repertoires of routines.

The Focus on Individuals

To consider routines at the individual level of analysis, two literatures
are important: the literature on scripts (Abelson, 1981; Lord & Kernan,
1987) and the literature on mindfulness (Langer, 1989, 1992). These two
literatures characterize much of what we know and understand about how
individuals build and execute routines in everyday life. At a broad level, these literatures suggest that individuals routinize activities to reduce their cognitive load through the creation of scripts (Abelson, 1981). This reduction in cognitive load is made possible because, once an activity has been made into a routine, it can be accomplished in a “mindless” manner (Langer, 1989, 1992), without devoting excessive cognitive resources to it and reserving “mindful” processing for novel or unusual activities. The routinization of activities allows different levels of attention (or mindfulness). In addition, scripts can be developed at different levels of abstraction (Lord & Kernan, 1987), involving choice points to account for different scenarios in the execution of a script. Thus, a script to “go to work” can include multiple “paths” depending on elements such as the time of day, the urgency of arriving, or road conditions.

For the purposes of this paper, the literature at the individual level makes two important points. First, the carriers of routines are individuals. Individuals in groups and organizations create and enact routines, and they act as the repositories of the event-based knowledge that routines represent. Further, it is individuals who detect discrepancies in the execution of routines and prompt for adjustment or change in the routines, by moving from mindless to mindful processing. Finally, individuals create cognitive structures that represent event sequences that operate at different levels of abstraction, such that higher-level (more abstract) rules enable lower-level (more concrete) action.

In summary, these literatures suggest that to answer the question of how groups maintain, adopt, and change routines, it is necessary to develop a perspective that includes three elements. These are a focus on individuals, the interactions among individuals in the social setting, and the dynamic nature of routines. In the next section of this paper, I present the setting of this study on adoption and change of routines, a police SWAT team.

**SWAT TEAMS**

Special Weapons and Tactics (SWAT) teams are specialized groups trained in tactical operations and the use of force (Snow, 1996). The most typical implementation of a SWAT team is as a part-time activity for police officers within a law enforcement agency, such as a local police department. In these departments, police officers have primary responsibilities in areas such as detective work, vice, or street patrols, and their participation in the SWAT team activities is a part-time volunteer assignment.

SWAT teams extend the training of police officers in two important ways. In traditional police work, the emphasis is on acting alone, with officers using a minimum level of force to defuse situations (Snow, 1996). SWAT training, by contrast, emphasizes the ability to act as part of a larger group through tightly coordinated action. In addition, SWAT team members train in a variety of weapons and tools that allow them to respond to situations with greater flexibility by varying the degree of force that they have available. By extending the traditional preparation of officers through an emphasis on both tactical and weapons related knowledge, SWAT teams in police departments create a specialized subset of officers that can help deal with more intense and dangerous situations.

SWAT teams exist across the United States, and were initially created in the late 1960s and early 1970s in response to a series of high-profile incidents that defied traditional policing procedures (Stockton, 2000). Perhaps the most famous of these incidents involved the takeover of the tower on the University of Texas at Austin campus by Charles Whitman (Lavergne, 1997). Using the tower as a base, he used a sniper rifle to kill 14 people and wound many others before he was killed by police. In this incident, police were fast to respond to the scene, but were unable to subdue the attacker for over an hour and a half due to their inability to act in a concerted manner. The emergence of violent offenders that could not be subdued using traditional police tactics led to the creation of SWAT teams to deal with threats that went beyond what normal policing work could address. In 2001, the Tactical Police Officers Association indicated that there were more than 4,000 SWAT teams around the country (Green, 2001).

In the following section, I describe the methods I used to collect data for this project and explain the data analysis process that I followed. Findings from my analysis describe how SWAT teams develop a repertoire of routines to do their work, and how the team continually refreshes this repertoire through the incorporation and organization of new knowledge.

**METHODS**

**Participants**

I contacted members of a SWAT team in a suburban police department ("Fairview") in the central United States. The team is composed of 17 members, who voluntarily take part in the team on a part time basis as an element of their police work, without additional salary or payment. Of the 17 members, 16 were male. In addition, tenure on the team varied from one month for the most junior member to 17 years for the most senior member.

I collected information for this project using a variety of qualitative methods, gathering interview, observation, and archival data. The focus of the data collection process was to develop an understanding of how a
SWAT team executes its work. In particular, during interviews I asked individuals to describe how the team operates, how it approaches particular situations, and how the actions of different members fit together to enable the team to accomplish its missions. It was my expectation that a focus on the work of the group would reveal many of the coordination and task execution processes which officers of the team use.

**Interviews**

I conducted initial interviews with all seventeen members of the SWAT team. These interviews lasted from 45 minutes to one and a half hours. In a few cases, I conducted multiple interviews with the same individual. I also conducted interviews with two officers who were not on the SWAT team but were also in the Fairview police department, as well as one officer who had recently left the team and two officers who were hoping to join the team. As additional sources of information, I also interviewed two officers on SWAT teams outside of Fairview to help me understand how the Fairview team fit into the spectrum of teams around the country. In total I accumulated 27 interviews with officers.

In each case, I began the interview by asking the team members to explain why they joined the team, how long they had been on the team, and other membership information. I then proceeded to ask each member questions to understand the general organization of the team, such as specific questions about training and mission activities. I then asked about how members coordinated their actions with one another to act as a team. Finally, I asked each officer to describe what specific activities he or she performed for the team (e.g., sharpshooter, explosives, and so on), and how that role fit into the overall work of the group. In each case, I asked the officer to describe the activities that would be performed in different situations, to gain an understanding of how the work of the group was done.

**Observation**

In addition to interviews, I was able to attend mission briefing and debriefing activities, but I was not able to attend any missions due to the potential dangers involved. I also attended four training sessions with the SWAT team. These training sessions are held once or twice a month, and are daylong activities. On a typical training day, we would meet at the Fairview police station and have a briefing for the day from the team commander and from the instructors for the day, who were always officers on the team. We would then depart in several vehicles (including equipment trucks) to the training site for the day, which included the police shooting range, a running track, and a firefighter training site. Once at a given site, the instructors would organize the training and divide the day into a morning session and an afternoon session, each focusing on different elements of SWAT activity. Some of the training I observed included the use of handguns, semiautomatic weapons, and less-lethal weaponry, as well as incursions and rappelling. In some instances, such as in the use of weapons and rappelling, the officers allowed me to participate in the training to understand the skills and difficulties involved.

During training sessions, I took notes to describe the activities that the members of the team engaged in. I was also able to ask questions of officers informally; both to extend my understanding of their activities and to request clarification for particular processes or procedures that I observed. The observation of training sessions was invaluable to focus on the central themes of this paper, the creation and change of routines in the group. By focusing on situations where the members of the group collectively evaluated procedures, I was able to gain a deep understanding of how this particular team continually changes its repertoire of routines.

**Archival Information**

To properly understand the Fairview SWAT team and its activities in relation to other teams, and to understand the development and adoption of routines, I also collected archival information regarding SWAT teams. These materials included the "Manual for SWAT," a manual that all members of the Fairview team had access to and which spelled out requirements to belong to (and remain in) the team, some of the basic procedures for the team, and some details regarding the hierarchy of the team and the police department. Other archival materials included more generic manuals that describe the activities of these teams, books that detail particular incidents important in the history and development of SWAT activity (such as the Charles Whitman incident in Texas), and magazines that are directed toward tactical officers. These magazines include some that are available to the general public as well as some that are only available to officers registered as members of tactical teams.

**Analysis**

To examine the collected materials for this paper, I followed an inductive approach (Glasser & Strauss, 1967; Miles & Huberman, 1995). I started by examining the observation notes and interview materials for instances
where I saw a change in the way a particular activity was performed. For example, during one training session the officers engaged in an extended conversation about reloading non-lethal "bean bag" ammunition. After this conversation, new officers were given the task of reloading. In another case during training, officers were rehearsing shooting in pairs and reloading their firearms, with one standing behind the other (to provide cover). As the rehearsal progressed, the officer designated as the instructor (one of the team's sharpshooters) walked around, correcting specific aspects of the sequence of actions for other officers. These incidents and others like them were marked in my notes. In total, I found 86 instances of changes in the way that officers perform activities on the team. These instances of change then became the unit of analysis. Although part of my intent in this paper is to explain changes in routines, these moments in the group are ideal to explore other processes such as the maintenance of routines because they expose the underlying assumptions and ideas that members have, allowing for their examination.

Once I had marked each instance of a change in a routine, I began to organize them according to their characteristics. In this process, I followed two stages. I first grouped these instances according to three characteristics: the process or discussion by which the routine changed (e.g., based on a discrepancy), the person or persons suggesting a change (e.g., a trainer or a rookie), and the type of information or knowledge that the routine involved (e.g., holding a gun or entering a location). I iteratively built these categories, moving between the data and the categories, and adjusting the categories whenever conflicting or disconfirming evidence appeared.

After the initial classification process, I had too many categories. Thus, I engaged in a second process of classification to narrow the categories. After several iterations, the classification scheme that produced the most compact results was one that focused on three main types of activities: the sharing of information or knowledge in the group, the addition or modification of routines in the group, and the elaboration of individual routines. The result of this process is a set of categories for routine change that describe the most robust findings in the data.

As a result of these analyses, I have identified a set of processes that allow the Fairview SWAT team to build and maintain a repertoire of routines. The team devotes a substantial amount of its time supporting the development of this repertoire during activities in which members acquire, share, and develop a common understanding through interactions in the group. In the following section, I detail the different processes through which the SWAT team modifies and organizes their repertoire of routines. Again, the analysis resulted in three identifiable categories of activities that aid the group in the modification of their repertoire of routines: the establishment of a common set of routines, the development and incorporation of new knowledge for routines into the group, and the organization of routines as knowledge in the minds of officers.

**FINDINGS AND OBSERVATIONS**

**Constructing a Common Set of Routines**

An important aspect in the development of a repertoire of routines is the creation of commonality across the entire team. Commonality serves as common ground (Bechky, 2003) or shared cognition (Cannon-Bowers & Salas, 2001) or a shared understanding for the group. This common ground is a set of routines that all members of the team understand, are familiar with, and can execute. There are three main processes through which the team develops this common set of routines: the use of the same Basic SWAT school for all officers, a strong emphasis on group rehearsal, and the adaptation of knowledge in the group.

**Common training.** Basic SWAT school is a one-week introductory course that Fairview SWAT officers (and officers on other teams) must complete before they can participate in missions and before they are considered full members of the team. Basic SWAT courses are offered across the country and are taught by other SWAT teams (typically full time teams). These teams offer courses as a way to sharpen their own skills and as revenue generating opportunities. However, only a small minority of teams has the skill and resources to offer a Basic school.

In the case of the Fairview team, the favored or preferred Basic school is one organized by a team in a city ("Springfield") about 250 miles away. The team at Springfield has high levels of expertise and members with substantial experience in SWAT activities. Its reputation among SWAT officers is quite good. The Springfield SWAT team offers a Basic school four times a year, during which expert officers teach many of the basic skills and routines that are necessary for work on a SWAT team, and which are standard across the country. These include standard approaches for arresting suspects, the use of some types of weaponry, and the use of intelligence at the scene of a mission. Basic SWAT school thus aids in the construction of routines.

When new officers join the Fairview SWAT team, there are a number of schools that they could attend, because many police departments offer Basic SWAT schools. However, veteran officers on the Fairview team do not allow rookie officers to choose which school to attend. Instead, they insist that all new officers attend the Basic SWAT school offered in Springfield, because it is the same school they attended. In fact, there was an instance
where one officer attended a different Basic SWAT school, because of scheduling conflicts with the Springfield normal school. When he got back from his Basic school, he joined the team in its normal activities, including training and missions. However, the next time Springfield offered a Basic school, this officer was expected to attend again and did so, even though there was substantial repetition in the material that was covered. The emphasis on common training is important to veteran officers because it puts the focus on learning many of the basic routines of SWAT activity in the same way.

Group rehearsal. The creation of a shared understanding through the Springfield Basic SWAT school is an important starting point in the development of common ground for the Fairview team’s repertoire of routines. However, most officers typically attend Basic SWAT school only once, at the very early stages of their career on the team. Although the use of a specific SWAT school can be helpful in the development of common ground, it is not sufficient. Thus, the team uses a second approach to continually create and recreate common ground: group rehearsal.

Officers on the Fairview SWAT team place great emphasis on rehearsing together. Members of the team consider the time devoted to training invaluable. In fact, the only complaint from officers that I consistently heard was that they did not have enough training time. Since one of the main reasons members join this team is to participate in this advanced training, the value placed on this time is understandable. Officers consistently mentioned the importance of training in interviews in ways that also suggested that there are strong norms in this group regarding attendance in training. For example, one member noted that he had to schedule a vacation at a time that did not conflict with the training days. For members of this group, training days take on an almost sacred quality.

Some of the activities that the team rehearses, such as entries into buildings, the arrest of multiple suspects, or the development of intelligence in hostage situations all naturally suggest that rehearsal as a group would be desirable. In each of these situations, coordination among different officers is necessary, and thus rehearsal as a group is a reasonable approach (Edmondson et al., 2001). However, even for activities where the task is individual in its execution and the skill is learned at the individual level, such as shooting with handguns, the team makes time for group rehearsal. Several officers remarked that even though they spend time on their own at the shooting range, it is still important that handgun training take place in the group, to ensure that everyone, in the words of one officer, “is doing things right.”

When the emphasis during training is on activities that require joint action, such as entries into buildings, the goal of the team is to make sure that the officers are able to coordinate in an effective manner. In these cases, the team devotes time to establishing a routine by developing an understanding of the roles that each person fulfills in the situation, and the types of actions that are necessary. In addition, during this coordination training, an interesting component is the development of an understanding by officers of what is important. During one training day I observed, the SWAT officers went to a site used by the fire department, where a permanent three-story building is in place to rehearse fire control and suppression. The officers of the SWAT team used the structure to practice entries into buildings. In this case, the entries required rappelling down the walls from the roof using ropes, followed by entry through doors and windows at street level. The trainer for this session was a Fairview officer who is also an avid rock climber. During training, he continually placed emphasis on the need for officers to pay attention to the lead members of the break-in team. This added attention is necessary in this situation because unlike a traditional entry “stack,” where members are physically standing in line behind one another on the ground, in this case it is possible for members in the “back” to get ahead of members in the “front” if the “back” members rappel down too quickly. Thus, for the team members that are not in the lead, a critical task is to be aware of where the lead members are. In this rehearsal, the actions and positions of the lead members dictated the progress of the task and the activities and pace of those activities for the remainder of the team. The emphasis throughout this training was on developing a common understanding of the critical factors in the task.

As stated earlier, in addition to building a common understanding during rehearsal of activities that require coordination, the members of the Fairview team also build a common understanding when they rehearse routines and skills that are of an individual nature. With skills that are individual, the most important outcome of rehearsal is the efficient and effective execution of the task. Although individual officers could achieve this efficiency and effectiveness by training alone, team members see group rehearsal as necessary to ensure that officers perform the skills in accordance with the team’s collective standards. During one training session, as noted before, the team focused on the use of handguns. The trainer (one of the sharpshooters on the team) reviewed how to hold a gun, a very basic skill that is well known and understood by all officers on the group. Even in this simple task, though, differences arose and a conversation took place to resolve them. One officer disagreed with the trainer about the best way to grip the handgun, which led to a discussion between these two officers in front of the team. This conversation was informal, but fundamentally revolved around the critical elements that would make one grip better or worse, such as ensuring safety, allowing wrist movement, allowing quick reloading, and so on. The two officers would take turns discussing why
their approach met one requirement, and then move to the next. At the end of the conversation, the officers had not resolved which of the two alternative grips was better. Instead, the two officers decided to try the other officer’s suggested approach, to see if they thought one was superior to their own. For some it might appear that since the officers reached no resolution the conversation may have been unnecessary. However, when I asked why the team took time to discuss this, I was told that the conversation served as a reminder to the group of some of the important or critical characteristics of the task of the group.

Group rehearsal is important because of the emphasis that the group places on the development of common skills and common understandings, which go beyond the efficient execution of routines. Officers see the common understanding that is an outcome of group rehearsal as critical in their development and maintenance of their repertoire of routines. Thus, while it might commonly be understood that rehearsal is important for the execution of routines that focus on coordinated activity (Edmondson et al., 2001), in the SWAT team I also find evidence of the importance of rehearsal for individual level skills. In the SWAT team, this is especially notable because the cost of devoting time to rehearsing individual skills detracts from the time available for the rehearsal of other activities.

Adaptation of knowledge. Another important way in which officers develop a commonality of knowledge is by the explicit adaptation of knowledge from Basic school to the specific needs of the Fairview team. Normally, a new Fairview officer will attend Basic SWAT school and learn general strategies for how to accomplish particular tasks. For example, multiple officers mentioned that a very common routine learned at Basic school was the execution of a dynamic entry, a way to gain access to a location that occurs quickly with the intent of surprising the occupants, preventing them from reacting in a violent manner. At Basic school, a new officer will learn how to do a dynamic entry and will rehearse it with other rookie officers at the school. However, from the Fairview officers’ perspective, this does not mean the new officer is prepared to execute or participate in a dynamic entry in their own team. Instead, before the new officer can participate in a dynamic entry mission, he or she must learn how the Fairfield team executes a dynamic entry.

Thus, when a new officer returns from Basic school, he or she participates in rehearsal with a very clear objective: to compare the information from Basic school to the information the team uses in rehearsal, to point out discrepancies, and to resolve those discrepancies by understanding the local implementation of the general approach. For example, Fairview is a spread-out city with a very large number of apartment buildings, characteristics that pose specific challenges. In the case of dynamic entry procedures, this team’s activities must account for the presence of large and open parking lots in their approach tactics to many locations. Similarly, they must account for thin walls between apartments in their choice of ammunition, to prevent bullets from unintentionally harming occupants of adjoining apartments.

Showing rookies how general knowledge is adapted for Fairview points to an important mechanism in the development of a repertoire of routines in this team, the adaptation of knowledge from the outside to this team’s context. In most cases, the knowledge from Basic school or other outside sources is not in a form that is ready to use. An important part of the work of the SWAT team is to interpret and adapt knowledge from a general setting by adjusting it to local needs. As this adaptation takes place, it modifies the way new members of the team accomplish their activities, changing their practice.

From a conceptual standpoint, the development of a common understanding of the work of the group, whether through Basic school, group rehearsal, or adaptation of knowledge, always requires the same response by individual officers: conformance. Officers, particularly new ones, must conform to the expectations of action held by other group members. The insistence on attendance to the same Basic school and the insistence for attendance to group training reflects these expectations. Both of these processes focus on the importance of learning common routines (Edmondson et al., 2001). And the conformance expectation is strong, so new officers do not have an opportunity to “opt out” of routines that are learned by the group. Although conformance is perhaps most visible for new officers as part of their socialization, it is also important for veteran officers, who must also conform to the collectively held conceptions of other group members. For veteran officers, conformance is evident when new knowledge is incorporated into the repertoire of existing routines. I discuss this process next.

Development and Incorporation of New Knowledge into the Repertoire of Routines

Although team members devote considerable effort to develop common ground (Bechky, 2003) through the development of a common understanding of routines in the team, this is only one way in which the repertoire of routines is built in the SWAT team. Another important element in the activities of the SWAT team is the ongoing incorporation of new knowledge and new information into the repertoire. In this team, the incorporation of new information, or learning, involves two processes. As with learning in other group contexts, it can involve changes in practices (Edmondson, 2002). In addition, in this team it also involves a continual adjustment of knowledge. As noted earlier, sometimes it is necessary to
adjust new knowledge to existing knowledge, as when rookies return from Basic SWAT school. However, sometimes it is necessary to adjust the repertoire itself to new knowledge that is brought into the group by its members.

In the SWAT team, the incorporation of new information into the repertoire of routines takes place through a variety of mechanisms. The group sometimes learns new routines through the expertise that some members develop in specialized schools they attend, and which they bring back to the group. In addition, the team learns new routines by creating variation through simulation and by exploiting and incorporating the variation in the experiences and perspectives of its members. In each case, individuals first acquire the knowledge and then it is translated, through the interaction in the team, to the group level. In this section, I discuss each of these processes.

**Expertise, specialization, and new knowledge.** An important source of new knowledge for the group comes from the experiences of individual officers when they engage in SWAT related activities outside the team. Though officers may mention rock-climbing or skyjumping hobbies as important in this learning process, the most frequent activity that officers mention is their participation in specialized schools. Consistent with the desire for additional training that motivates officers to participate in the SWAT team, one noted "I go to as many specialized schools as I can." In these specialized schools, officers learn how to use additional tools and tactics such as explosives, non-lethal weaponry, and so on. There are many schools that SWAT members can attend, involving topics from sharpshooter activities to crowd control. These schools vary in duration, but two to four days is typical. In this team, members are expected to attend a minimum of two specialized schools a year, but most members try to attend more than two. After they attend specialized schools, individual officers also engage in ongoing rehearsal of the skills they learn to hone their expertise, sometimes even on their own time, away from the group.

The performance expectation for Fairview officers who attend specialized schools is high. Members who attend are expected to receive certification in the use of the tools they learn. Members must become proficient enough to achieve these goals and, in addition, be proficient enough to achieve certification as trainers, so that when they return from the class they can train other officers on how to use the tools. As one member noted "you come back, and you train everyone else so they can be certified in the use of the tools." Thus, members are engaged not just in acquiring new knowledge, but in mastering it by exploiting outside training opportunities.

When members of the team rehearse as a group, members with specialized expertise present their knowledge and put it into action as part of the regular training. The most transparent way in which this happens is when experts take over as trainers, as when a sharpshooter leads training for marksmanship. But officers also contribute to training as experts, even when they are not the lead trainer. For example, one officer who went to a school and learned how to use explosives to blast barricaded or reinforced doors explained to the team how explosives can be used as a part of dynamic entries. As the team rehearsed, the knowledge of the "explosives guy" was used in the development of entry routines, as he explained the contingencies that make using explosives necessary and how explosives make the entry process different. This is a process of incorporation of new knowledge. Naturally, a consequence of this emphasis on the sharing of expertise across members has another advantage: it simultaneously develops a network of distributed expertise. This network of expertise is useful because it can become a resource for individual team members to draw on.

**The development of variation and new knowledge.** Part of the new knowledge that the Fairview team uses to continually learn and update its repertoire of routines comes from the practices taught in SWAT schools, both Basic and specialized. However, a very important source of new routines and of learning in the group comes from the development of variation. The development of variation allows for incremental changes to practices and routines that already exist in the group. The team derives variation in practice from two different sources. The first source of variation is a deliberate result of rehearsal, where the team considers different contingencies for a particular action. A second source of variation comes from the multiple experiences and perspectives of officers while executing a particular task.

One of the most important activities for the Fairview SWAT team is the rehearsal that takes place during training, where routines are established, practiced, and learned. A typical training day will devote time to perfecting an already understood routine. For example, on a handgun practice day the team worked at the police department range, where one officer reviewed the basics of handgun use. These basics included issues such as safety, general usage, common problems, and so on. In addition, members of the team spent time target shooting while standing still and while moving. They also rehearsed reloading bullet clips, again while standing still and while moving. Officers describe these activities as "standard," indicating that although they require practice to maintain at a proficient level, they make few changes to them.

By contrast, on another training day the team rehearsed dynamic entries, approaches to gain entry to a location that involve action at high speed. As before, officers review the basics of the approach, including the sequence of entry, coverage of the location, and safety considerations. However, in this case the team is also aware that each different location will require a unique approach, and that there are limits to "standard"
approaches. Although it may be possible to acquire some information about a location ahead of time (by obtaining maps and blueprints from city planning departments), there is always some uncertainty on exactly how the location will be laid out, what furniture might be in place, and how many people might be in a location. Thus, to account for these different elements, the team engages in a deliberate process of simulation or experimentation during training. Members conduct some of this experimentation by making changes to the method the team uses. For example, it was fairly typical for the team to change the order of officers in the “stack,” the group of officers that enters and secures a location. This variation was valuable for every officer, since there are limited opportunities to be the lead officer in a dynamic entry during a real mission.

Another example of the variation the team created in its simulations for dynamic entries involved the use of an “opposition.” For the rehearsal of dynamic entries, the team uses a facility where modifications to the layout can be made relatively easily. In this facility, the team sometimes assigns a set of officers to be the “opponents.” In this role, they will have to adapt to as they execute the dynamic entry. Some examples of the modifications I was able to observe include moving walls from one place to another, putting up obstacles or blocking doors, and arranging the furniture in different ways. In addition, the opposition also tried different tactics, such as distributing themselves around the location to make the task more complex, adding innocent bystanders (such as simulated children) in the location, responding to the incursion with different levels of force, and so on. By deliberately creating this level of variation through the use of an active opposition, the team has to adapt to unpredictable situations.

The objective of rehearsing this way, of experimenting and simulating different approaches to a task, is not to be able to prepare for every possible situation that the team might encounter. As members readily recognize, it would be impossible to foresee every situation that they might face, or every small element that might make a difference in a situation. Instead, the point of the exercise is to identify important elements and to understand how they affect the actions of the team. By identifying the critical characteristics of a situation, the team is continually refreshing old (as well as developing new) guidelines to act.

Although one source of variation for routines comes from establishing contingencies for action through simulation, a second source comes from recognizing the differences in the experiences of individual members during the execution of those routines. In each attempt at a dynamic entry, each member of the group develops a different perspective. As one officer put it when he moved from the back of the stack to the front, “the whole thing looks different if you are the first one in, the last one in, or which room you go into.” Thus, individuals become the repositories of variation in outcomes during rehearsal, and this variation is based partly on their assigned role in the mission and partly on their execution of their assigned script. This means that even when the execution of a particular routine does not contain a great deal of new variation for the group to draw on (because they may not have faced any new contingencies), the rehearsal of the routine can provide feedback that contains variation derived from the individual perspectives (Argote et al., 2001).

By deliberately engaging in the creation of variation through simulation and through an active search of multiple perspectives, the SWAT team is able to refine its routines. To do this, the team discusses each rehearsal after it is completed, considers what went well, what did not, what can be changed in the approach, and what might be improved. As one officer put it, “you take fifteen seconds to do an entry, and you talk it to death… sometimes fifteen or thirty minutes.” Reflection as a social activity is what drive the incorporation of knowledge (Edmondson, 2002) and extends understanding in the group (Hatano & Inagaki, 1991; Shirouzu, Miyake, & Masukawa, 2002). In this experimentation and simulation, there may be small changes made to routines, or there may be no changes made. However, reflection through discussion can modify the application of a routine and of the repertoire, generating new knowledge that the team incorporates into practice through feedback. In this case, simulation or experimentation drives the modification of knowledge and learning in the group. In addition, as mentioned, the group is very aware of the multiple perspectives that different officers have of a situation. The team gives voice to the perspectives that officers develop, to explore differences and to use those differences in the generation of variation in knowledge that is incorporated into the knowledge of the group.

Organization of Knowledge

The practical, empirical, and action-oriented knowledge that routines represent are encoded in the minds of officers, as latent knowledge (Hargadon & Fanelli, 2002). Although the perfection in the execution of routines in the group is important in understanding the development of a repertoire of routines, the treatment of routines in the minds of officers must also be given attention. In my conversations with officers and through my observations of training, I found evidence of three processes that officers use to make sense of all of the information that routines represent. Officers bundle similar routines together, to simplify the large number of routines they learn; they develop webs of routines, which allow them to build connections among routines; and they build hierarchies of routines,
where they establish preferences for some routines over others. These processes are the result of the development of common ground in the group through training and of the inclusion of novel information in the group. Together with these group-level processes, the individual encoding of routines in the minds of officers allow for the group to engage in action that is well-practiced but still amenable to change. I describe each of the processes for the encoding of routines in the minds of officers below.

**Bundles of routines.** To be able to address a variety of situations, the SWAT team develops a range of routines to accomplish any one objective. As noted earlier, for a dynamic entry the team generates variation in the experience of a break-in to provide members with artificial opportunities to learn different routines. The small differences in each situation allow the group, collectively, to develop a script for a specific situation through rehearsal. The range of routines used for one purpose is also expanded with the experiences of individual officers as experts, as when an officer explained how to use explosives to force barricaded or reinforced doors.

Developing variation in responses to incidents is critical in building the SWAT team’s ability to respond flexibly because the responses to variation help build a large set of routines. Members of the team continually work to organize these different responses to situations into “bundles.” This bundling organizes all the routines that address similar situations, but where the specifics vary. For example, all of the small variations in routines for dynamic entries may be catalogued under one general heading. As one member put it:

> sure, it’s different if you are blowing up a roof, going through a window from the roof, or using the front door. But it’s all basically the same… You’re just trying to get in there.

By organizing all of the routines that address similar situations together, officers are able to develop a more comprehensive view of the knowledge that their routines represent.

**Developing webs of routines.** The development of a repertoire for action is not limited to the creation of bundles of routines. In addition, members of the team also work on developing connections across different routines that are appropriate for different types of situations. For example, in one instance the Fairview team rehearsed crowd control, how to respond during a riot or to defuse a serious disturbance. Later, the team discussed the routines for crowd control and dynamic entries, and officers pointed out instances where the team might need to link the two, such as a situation where rioting individuals seek refuge in a house, and a dynamic entry is required to dislodge them. By weaving together the different routines, the group also organizes the knowledge that routines represent.

This conversation among the officers highlights an important property of the SWAT action routines, their decomposability. Action routines are analogous to scripts (Abelson, 1981) because they can be broken down into smaller elements that sometimes have the potential for alternative arrangements. Naturally, not all sequences are possible. For example, it is not possible to cover all of the rooms in a location before entering the location. By necessity, entry precedes coverage. Similarly, a stealth or quiet entry should not involve the use of explosives. However, the exploration of links between routines that take place during training sessions allows members of the team to understand how routines can be broken down into these smaller elements. This decomposing process opens possibilities for flexible action. Although the group devotes time elaborating these conversations in training, the exploration of links is not exhaustive. The sheer number of potential alternative arrangements for routines and of alternative combinations of routines precludes this as a practical matter. Instead, it appears that what is important for the team is to establish two principles: first, that these routines can be broken down into smaller elements, and second, that officers can combine routines together through linkages made across the smaller elements of the routine.

In building the connections between routines, officers describe the creation of a “web,” an arrangement where routines can “touch” one another. This web allows the team to plan transitions from one form of action to another. Officers pointed out the need to move easily from one routine to another as the situation requires, as elements of the environment change. By highlighting the places where potential linkages exist between routines for different activities, the members of the group develop an understanding of the uncertainty they may face and a comprehensive approach to address it. As one officer noted, “if you are doing a stealth entry and you see that the suspects have been alerted, you immediately switch to a dynamic entry pattern.” These choice points in routines become the moments that enable flexible action. These approaches, together, allow the group to adjust their operations. As one officer noted in the case of a break-in,

> yeah, one time we were prepared to do an explosive [dynamic] entry, and the explosives guy rigs the door, checks the lock, and it’s open. Go figure. Anyway, less noise and work for us when we go in quietly [stealth entry].

By building a collection of well-practiced routines and shared knowledge, group members maintain a variety of approaches that can be used to react to new or different situations.

One product of this process is the ability to develop novel solutions to problems. Two officers mentioned an example of how one particular inno-
ative action emerged in the group. They described how, during a standoff with an armed suspect, a break-in team was in position to enter the house through the back door, if it became necessary. At one point the suspect started to open a window directly above where the team was, potentially putting the officers in the break-in team in danger. To open the window, the suspect put down his weapon. One member of the team saw this as an opportunity. He stepped back from the wall as the window opened, lunged through the window and surprised the suspect, grabbed him by the upper body, and dragged him out through the window, where he was subdued and arrested. In describing this event, both officers noted that the group had never rehearsed this approach. Instead, they noted that the group had rehearsed three different routines, elements of which made this particular innovation possible: entering through a window, holding a suspect, and evacuating people. Officers had rehearsed these three activities in training. Selecting pieces from each and patching them together into a single continuous flow of action by the officer was an innovation appropriate for that particular situation. This officer’s previous experience enabled the new practice (Weick, 1993).

The common ground to understand the situations faced by the team is established through common training. In addition, the linkages built across routines allow members of the SWAT team to adjust to new situational knowledge without having to engage in extensive communication to re-draft a plan of action. This ability to adjust is especially important in this team’s context, where the group faces high time pressure and is often unable to engage in consultation during execution.

Hierarchies of routines. In addition to bundling routines and weaving webs of routines, members of the SWAT team use a third approach to organize, in their minds, their repertoire of routines. This third overlapping organization is the development of hierarchies of preferences among routines through an implicit ranking system. The hierarchy of preference among routines is driven by two concerns: a desire for safe action, and a desire to prevent negative public reactions.

When I asked members of the SWAT team if they enjoyed placing themselves in danger, the universal response was “no.” Although they appreciate the training that membership in the SWAT team provides, these officers are not especially fond of risky situations. In fact, in response to this question, several officers described themselves as a “chicken” or “coward.” Their response is directly reflected in the hierarchy of preference about action. In general, the officers on the team prefer to engage in action that is less dangerous, or action that puts them and the suspects less at risk. For example, they prefer to catch suspects unaware by surprising them, because this limits the potential negative response of suspects. Similarly, SWAT officers avoid using their firearms unless they absolutely have to, because by firing bullets in a confined space they run the risk of hurting themselves, other officers, bystanders, or suspects.

The hierarchy of preferences in routines in the team is also dictated by the broader setting in which the SWAT team is involved, the police department. Like many police departments, this one is concerned with its public image and with charges of excessive force. This worry is more than a simple concern with impression management or public relations. Police officers often note that, to the extent that the community sees them in a favorable light, police activity is simpler, easier, and safer. Thus, maintaining an image as a police department that is responsible and which does not engage in unnecessary violence is an important part of their work. For the SWAT team, these pressures present a particular conundrum. On one hand, the point of the SWAT team is to have officers that are trained in the use of force. On the other hand, they are severely constrained in their use of that force. These competing concerns, in essence, are reflected in the hierarchy of routines that the team develops. In general, the team takes on a risk-averse stance to avoid negative outcomes by always being prepared to use less force or less extreme measures. The hierarchies they develop, for example, allow them to move from routines that involve less force to routines that involve more, thereby adjusting to the situation. As one officer noted, “we try not to be mean, but if [the suspects] get mean, we will too.” Thus, in the hierarchy of preference the officers prefer routines that involve less force rather than more, no action versus action, and quiet action versus loud action.

As noted before, the routines that the SWAT team uses for its work are physical and observable, and are directed at taking action that is visible. However, these routines also exist in the minds of officers, as cognitive arrangements. SWAT officers use three distinct ways of organizing this knowledge, the development of bundles of routines, of webs of routines, and of hierarchies of routines. Thus, the collection of routines into hierarchies is partly the result of a clarification of roles and identities in training (Hargadon & Fanelli, 2002) as well as the development and practice of specific scripts (Abelson, 1981; Hargadon & Fanelli, 2002).

DISCUSSION

In this paper, I explain how officers in one SWAT team maintain, adopt, and change their task routines. The literature has noted that routines are important in the work of groups and organizations, but there is little work exploring where routines come from and how groups manage them. Through an inductive exploration of a police SWAT team, a specific type of intense and interdependent work group, I am able to explore how individuals collec-
tively manage a repertoire of routines through their ongoing activities. Much work remains to be done in the area of routines in groups, though the work presented here can serve as a point of departure for a scholarly conversation on the issues related to habitual behavior in work groups.

The findings in this research point out several factors that influence the development and maintenance of routines in groups. In particular, this research notes the need for members of this team to fully understand the routines as a condition for their adoption by all officers, and the importance of training as a group (Edmondson et al., 2001). This collective understanding is similar to notions of shared cognition (Cannon-Bowers & Salas, 1991), heedful interacting (Weick & Roberts, 1993), or common ground (Becksky, 2003), each of which attempt to describe the presence of knowledge that is shared or understood in a similar manner by members of a group. Because of the need for tight coordination in high-pressure situations, this is a group in which a collective understanding is especially important. In the Fairview SWAT team, many of the activities that individuals perform are tailored to ensure the development of a common interpretation of situations and actions, such that the common ground that enables collective understanding is continually built. Although the need for this common knowledge may not be explicitly recognized by members, the rehearsal activity of this team for newcomers and for veteran members ensure that common ground is developed and maintained. This research highlights member conversations and social interactions that are necessary for all members to understand changes in routines. These interactions lead to processes such as conformance and reflection that are social in nature but enable the adoption of routines and learning at the individual level. By examining the perspectives of different members and the work they perform, this work also allows the examination of how individuals make sense of a group’s repertoire of routines, and how members can understand and organize these routines in their minds.

Perhaps most important, the findings in this research highlight the interdependence that exists between the group and the individual in the maintenance of a repertoire of routines. The social setting that the group provides influences individuals in their learning, by providing an opportunity for active reflection and by establishing strong norms to adopt agreed-upon procedures. However, the group must also rely on individual members to use their experience to initiate change or to help maintain the repertoire as an ongoing activity. While connecting individual and group elements that enable the maintenance of a repertoire of routines is helpful in understanding this process, it also points to the difficulties that are likely to come from further examinations of routines in groups, and for the need to examine both group level and individual level processes when we consider routines.

The findings in this research also contribute to each of the literatures that directed my initial inquiry. For the literature on organizational routines (Feldman, 2002; Gersick & Hackman, 1990; March & Simon, 1958), this research reinforces both a more traditional view of routines and newer perspectives. It is possible to see in this team, for example, that routines are mechanistic in their rehearsal and in some forms of execution (Morgan, 1997). The members of the SWAT team are always concerned with perfecting the execution of every routine. However, focusing only on the team’s efforts to perfect execution is a narrow perspective. For this team, a more accurate picture of routines is one of flexible application. This group expends a significant amount of time and effort linking routines to one another, such that while efficient execution is important, understanding the opportunities for change during execution is critical (Feldman, 2002). For organizational routines, this suggests a need for researchers to examine if and how organizational members develop linkages across routines. In the SWAT team, these linkages emerge as a response to uncertainty. For organizations, this exploration of linkages may be most instructive if it focuses on uncertain situations or unpredictable events.

By focusing on task behavior and examining it closely, this work also contributes to the literature on group routines. Gersick and Hackman (1990) discussed different types of habitual behavior in groups, and this work provides some evidence for the processes that they hypothesized and it extends some of the ideas they proposed. For example, as they might suggest, habitual behavior emerges in this SWAT team in response to the characteristics of the task, as part of the work context. The membership of the group, including the addition of newcomers, also influences habitual behavior. On the other hand, the findings here also extend elements from their discussion. For example, the focus on task behavior (versus social behavior) identifies processes of explicit consideration within the group that Gersick and Hackman (1990) do not highlight. The explicit consideration of many routines by this group suggests that the development of habitual routines can be a very mindful activity, one that takes place not in the absence of active thought, but rather taking full advantage of the attention of members. In addition, this work points to some seeming contradictions. Gersick and Hackman (1990) note that habitual routines carry a cost, because they can lead to an inability to adapt to new situations. The data for this project suggests that the approach used by the SWAT team is one that deliberately tries to account for that danger by using approaches that enable adaptation. Thus, the role of habitual behavior in causing inertia is a question that deserves considerable more attention. At best, the data presented here suggest that groups can deliberately address some level of adaptation. Gersick and Hackman (1990) also suggest that once a group adopts a set of routines, it is difficult to expand its behavioral reper-
toire. Again, in the case of the SWAT team the high level of explicit consideration of routines indicates an awareness and intent to expand and modify their repertoire. The team continually adds more information to its repertoire, through the deliberate exposure to information from the outside, carried in by either novices (from Basic school) or from experts (from specialized schools).

The findings presented here also address some of the other literatures that are useful in understanding group routines. One area of interest is that of group learning. Edmondson (2002) has noted that, for learning to take place, some form of action must change. In this group, though, I observed many instances of discussion, focused on clarification of tasks, where the ultimate outcome was no change in practice. Although no change took place, these ongoing discussions were important to develop the common ground that made later changes in other routines possible.

Thus, this may point to a need to explore processes in learning that go beyond the adoption of specific information or knowledge, but which perhaps set the stage for that adoption (Argote et al., 2001). A related idea is that of psychological safety (Edmondson, 1999, p. 350), “a shared belief held by members of a team that the team is safe for interpersonal risk taking,” which is displayed in the SWAT team whenever individuals present a new idea or critique a process. Like discussions in the group that do not lead to change, the assurance that it is safe to disagree in the group may be a critical precondition to enable the social processes necessary to manage a repertoire of routines effectively. Together, these findings suggest different opportunities for further work to understand routines and other habitual behavior in groups.

At the individual level of analysis, this work suggests some additional directions to consider in explaining event-driven cognitive structures such as scripts and routines. Lord and Kernan (1987) suggest that individuals organize families of scripts according to their purpose. This is one approach used by SWAT team members. However, SWAT members also appear to have other organizing structures. In addition to grouping scripts by purpose, members spend time developing links across the scripts. Officers also develop preferences for action, such that hierarchies of preference overlay both the groupings by purpose and the development of linkages across scripts. Examining crossover points in scripts and the development of hierarchical preferences in other settings would be useful to understand these processes further. An additional area of interest at the individual level is the role that the group plays in engaging mindful processing (Gersick & Hackman, 1990; Langer, 1989; 1992; Levinthal & Rerup, 2002; Lord & Kernan, 1987; Louis & Sutton, 1991). Much of the work that considers switches from mindless to mindful cognitive processing relies on the individual noticing or being faced with information that makes automatic processing difficult to continue. In the SWAT team, though, the interruptions caused by rookies in their attempts to understand how the group operates engaged the entire team in the review and execution of routines. This suggests an expanded role that other individuals, such as others in a group, can play in causing a focal individual to abandon automatic processing. Again, the conditions under which this process might take place deserve additional attention.

The advantages of studying routine development in a SWAT team are clear. Because the work of the group is physical, the routines are observable during training, when they are modified and learned by members of the group. In addition, because of the need for a common understanding of the routines in this group, officers are accustomed to having conversations about their routines. As a crisis response team, the work of the SWAT team is such that much (if not most) of the knowledge that is used by the group is encompassed in the repertoire of routines they use. Each of these elements makes the team a desirable setting in which to collect data and information regarding the development, modification, and learning of routines. In other settings, gathering data about routine activity may be hindered because the routines cannot be observed, they are not understood by everyone, or they are hard to describe.

Naturally, this research also has shortcomings. In particular, it is inevitable that some knowledge that the team uses is not captured in this research. Because the focus is on routines, other types of shared knowledge may not be accounted for, such as the commonality of attitudes among officers (Cannon-Bowers & Salas, 2001). The approach I have used limits the scope of the shared knowledge that I can examine to that which I can observe and which the officers describe. In addition, this analysis focuses on knowledge held by members in the context of the group, and is therefore social in nature. Thus, it is possible that some forms of individual knowledge, such as some forms of expertise, may be underrepresented here. All in all, the approach used here is likely reasonable to examine the work of the SWAT team, as the most important elements of the work of the team are public and observable. However, such an approach may not be appropriate for examinations of other types of groups. As with most research, the gaps left by this exploration of routines in groups points to potential areas for future research.

The contribution of this paper is in the identification and description of the development and maintenance of a repertoire of routines, which present a particular type of knowledge that is focused on action and events (Abelson, 1981). However, the processes used to learn routines in the group have some characteristics that are shared with other forms of group learning (Argote et al., 2001; Edmondson, 2002). This research highlights that routines in groups are developed and maintained through a variety of
mechanisms, which are a consequence of the many different ways in which learning and understanding are triggered in groups (Argote et al., 2001).

**CONCLUSION**

The research presented here explains how one group develops routines for habitual task behavior, and how the development of routines involves multiple processes in the social context that the group provides. As such, it points to possible avenues to explore in other groups, where routine development must inevitably take place. Given that for many organizational groups the work consists of habitual or routine execution, a continual focus on the development of routines would extend our understanding of these groups and of the organizations in which they reside.

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