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EXPECTING THE UNEXPECTED? HOW SWAT OFFICERS AND FILM CREWS HANDLE SURPRISES

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Organizations increasingly face surprises with regularity, yet little is known about how they develop the responses to unexpected events that enable their work to continue. We compare ethnographic data from two types of organizations that regularly deal with surprises, a police SWAT team and film production crews. We find that individuals engage in organizational bricolage, restructuring their activities by role shifting, reorganizing routines, and reassembling the work. Organizational bricolage depends on the sociocognitive resources that group members develop by drafting agreement on the work, reinforcing and elaborating task activities, and building cross-member expertise.

> On the set of a horror film, three weeks' worth of scenes were filmed in the rooms of a large mansion. During the first week, the crew was shooting a dramatic slaughter scene on the top floor, in which the victim was electrocuted while falling into a hot tub. However, the crew forgot to account for displacement and as the actor in the scene fell into the hot tub, the water overflowed, spreading over the floor. As the water cascaded down through the glass chandelier in the mansion's entryway, a production assistant announced over the walkie-talkie, "I'm on the first floor and there is water dripping on my head!" The flood shorted out the electricity in the entire mansion, halting production.[1]

> In preparing to execute a search warrant on a suspected drug house, officers on the SWAT team reviewed pictures, film, and diagrams of the location. With this information, the team sketched out the approach they would take during entry, and agreed on how they would distribute themselves inside the location once they broke the door down. During the drug raid, after the officers rammed the door down, they found that the suspects had modified the inside layout of the apartment and the walls and rooms were not in the configuration they expected. As the officer describing the event noted, "You expect a hallway, and there's a wall."

Scholars have begun to devote attention to surprise as an important part of organizational life (Lampel & Shapira, 2001; Weick, 1995; Weick & Sutcliffe, 2001). A surprise is a break in expectations that comes from situations that are not anticipated or do not advance as planned (Cunha, Clegg, & Kamoche, 2006) and encompasses any element within an organization that is unexpected and draws attention away from the standard progression of the work. Surprises are interesting because they exemplify the remarkable ways in which organizations face uncertainty and adapt, offering opportunities for exploration of organizations' potential for "robust action" (McDaniel, Jordan, & Fleeman, 2003; Weick & Sutcliffe, 2001).

Scholars have characterized surprises in terms of variation in both their sources and their outcomes. Surprises are generated by events as well as processes (Cunha et al., 2006) and can emerge from situations of limited knowledge and system complexity (McDaniel et al., 2003). Surprises also differ in their consequences for organization members, which vary in part on the degree to which a collective understanding of a situation falls apart (Weick, 1993). At their most negative, surprises that constitute "cosmology events," such as the Mann Gulch blaze described by Weick (1993), can overwhelm organization members, with devastating results. A more commonplace—and positive—outcome of surprises is organization members' mindful engagement with situations, coupled with recognition of a need for change and action (Jett & George, 2003). For instance, the unexpected injuries that trauma teams deal with do not directly threaten organization members, but do drive them to action (Klein, Ziegert, Knight, & Xiao, 2006).

Most organizations face unexpected events of the less catastrophic variety. And whether surprises arise from internal complexity and lack of foresight, as in the film crew example above, or from external events, as in the SWAT team example,

[1] Both excerpts are from the authors' field notes.

members of organizations need to respond in ways that enable their work to continue. When the electricity goes out, a film crew does not simply stop for the day but instead works to resume shooting as soon as possible. Similarly, regardless of whether the house is configured as expected, SWAT officers press on to arrest the drug suspects. Film crews and SWAT officers encounter surprises such as these as a regular part of their experience. Regrettably, researchers know less than we should about what enables these and other organizations to handle unexpected events and readily continue their work.

If, as some have argued, organizations are increasingly facing surprises (Cunha et al., 2006; Scott, 2004), it becomes important to go beyond charting variation in surprises to delve into what makes organizations capable of robust action when they occur. In this article, we are interested in determining how organizations that regularly and successfully respond to surprise are prepared to shift their work as their circumstances change. How do organizations develop the collective resources needed to continue with their work after encountering a surprise? Answering this question requires not only studying organization members' responses to the unexpected, but also investigating the processes that enable them to be responsive. To explore this question, we compared the practices of two types of organizations that expected, anticipated, and sometimes embraced, the unexpected: film production crews and a SWAT team. These two organizations closely interacted with their environments and treated surprises as a routine part of their daily activities. We found that they used organizational bricolage to respond to surprises by shifting roles, reorganizing routines, and reassembling their work. We identify the processes that enabled them to respond to surprises and continue their work, showing how these organizations developed a set of sociocognitive resources to draw on when engaging in bricolage.

HANDLING ORGANIZATIONAL SURPRISE

Scholars have found that when surprises disrupt expectations, organization members respond by engaging in problem solving and trying to recreate the order that has been lost. To be able to quickly resume their work, they must have both the ability and the resources to respond to new conditions in an emergent manner. For instance, studies of "high-reliability" organizations that face surprises depict resilience as the product of developing the ability to detect, contain, and rebound from problems (Weick & Sutcliffe, 2001). Resilience is characterized by mindfulness, which engenders an appreciation for the details of a situation (Langer, 1989; Weick & Sutcliffe, 2001). It is enacted through improvisational action in which "knowledgeable people self organize into ad hoc networks to provide expert problem solving" (Weick, Sutcliffe, & Obstfeld, 1999: 100).

Improvisational action is particularly important in organizations that are trying to innovate. In these cases, improvisational organizational action leads to learning, problem solving, and change (Barrett, 1998; Eisenhardt & Brown, 1998; Weick, 1998). For example, Miner, Bassoff, and Moorman (2001: 314) showed that organizational improvisation, "the deliberate and substantive fusion of the design and execution of a novel production," is a responsive form of real-time organizational learning. They demonstrated that when facing design issues, timing problems, and unanticipated customer-generated opportunities, organizations create novel behaviors, artifacts, and interpretations that enable them to respond (Miner et al., 2001).

Bricolage also has been shown to help individuals and organizations innovate and harness entrepreneurial opportunities (Baker & Nelson, 2005; Barrett, 1998; Moorman & Miner, 1998; Weick, 1993). Building on Levi-Strauss (1966), Baker and Nelson defined bricolage as "making do by applying combinations of the resources at hand to new problems and opportunities" (2005: 331). Although the literature on improvisation has a focus on novel outcomes and solutions, scholars studying bricolage emphasize the antecedents of those responses and outcomes. A central element in bricolage is the ability of bricoleurs to draw from the pool of resources at hand to assemble products or processes that respond to situations they encounter (Baker & Nelson, 2005; Miner et al., 2001). This enables bricoleurs to use a set of resources accumulated through experience (Orr, 1990) to routinely create order out of chaotic conditions (Weick, 1993).

Whether people in organizations engage in mindfulness, improvisation, or bricolage in response to uncertain or surprising situations, their emergent action is supported by the presence of preexisting organizational resources. Responses to surprise rely on elements already available in an organization—the material, social, and cognitive resources accumulated through its daily work (Baker & Nelson, 2005; Miner et al., 2001). Organizations stockpile troves of supplies and the tools needed to make use of them, building up material resources through their regular activities. Entrepreneurial bricoleurs might combine spare electronics components to begin a new business troubleshooting underground cables (Baker & Nelson, 2005) or use available wood and lorry gears to build wind tur-

bines (Garud & Karnoe, 2003). Likewise, incident response teams, knowing they will face large fire emergencies, keep trucks laden with equipment and tools at the ready (Bigley & Roberts, 2001).

A second set of resources is located in social and cognitive processes. For instance, Moorman and Miner (1998) argued that the procedural and declarative memory of an organization can affect the coherence, novelty, and speed of improvisation. In the same fashion, effective jazz improvisation depends upon players' collective knowledge of jazz grammar and syntax—the patterns of musical progression, "licks," and phrases of jazz masters—that musicians use as a base for their shared improvisational work (Barrett, 1998; Bastien & Hostager, 1988). Social and cognitive resources are also needed for organizations to respond to crises. Studies of disaster preparedness and hospital teams, for instance, have shown that having prearranged protocols helps organizations structure responses to emerging demands (Bigley & Roberts, 2001; Faraj & Xiao, 2006). Similarly, shared role systems have been found to enable action in response to dynamically evolving situations facing medical trauma teams, ship navigators, and firefighters (Hutchins, 1990; Klein, Ziegert, Knight, & Xiao, 2006; Weick, 1993). And Majchrak, Jarvenpaa, and Hollingshead (2007) argued that group-level cognitive systems could prove vital for responding to disasters.

Taken together, these prior studies suggest that the material, social, and cognitive resources in organizations warrant attention, as they can be important tools for responding to unexpected situations facing organizations. However, research is less informative about the creation and accumulation of these resources, especially the social and cognitive processes involved. For instance, Bigley and Roberts (2001) described the structuring mechanisms, constrained improvisation, and cognition management methods of teams responding to emergency situations, but they touched only briefly on implications for organizations trying to develop the resources to implement these systems. Similarly, the work of Miner and colleagues (Miner et al., 2001; Moorman & Miner, 1998) shows the benefits of cognitive resources such as organizational memory for improvisational action, but this work does not explain how organizations develop that collective knowledge. Finally, although scholars describe the troves of resources used in bricolage (Baker & Nelson, 2005; Ciborra, 1996), they have paid little conceptual attention to the processes by which organizations build the social and cognitive capacity to engage in bricolage.

In this study, by comparing how two organizations regularly respond to surprises, we pinpoint the processes that enable them to handle unexpected events in the course of their activities. We find that what enables a SWAT team's and a film crew's organizational bricolage in response to surprises are *sociocognitive resources*: the collectively held knowledge about how a task is performed and how activities advance. We demonstrate how these sociocognitive resources develop during ongoing organizational activities such as drafting agreement on work, reinforcing and elaborating task activities, and building cross-member expertise. Comparing the processes of two types of organizations also allows us to focus close attention on the role that the structural context has in shaping responsiveness, showing how the features of the work influence how groups respond to the unexpected events they face.

METHODS

To understand how organizations respond to surprise, we investigated two settings in which uncertainty was pervasive and, as a consequence, surprises occurred with some regularity. A police SWAT team is an ongoing group of officers organized to respond to situations in which the typical training of police officers is insufficient, such as situations that threaten high levels of force or violence, those involving multiple suspects, and drawn-out situations in which patience and quick action may both be desirable. In this context, surprises appear as breaks in members' expectations of how the mission is unfolding. Thus, surprises can include mistakes, changes in suspects' behavior, such as taking hostages in response to the officers' actions, and other changes in the environment.

Film productions are structured as temporary organizations in which an occupationally specialized set of participants come together to produce a single film and disband once the task is completed. In film sets, surprises appear as breaks in members' expectations of how the different aspects of the work of the film crew will progress. As for SWAT teams, surprises include not only mistakes and changes in the organizational environment, but also unexpected difficulties in crafting an original product, such as dealing with animals or working to implement a director's artistic vision of a scene.

These two settings provided abundant opportunities to gather data on surprises and how the organizations prepared for and responded to them. People in both settings were often challenged by events in their environment and in the execution of their work that could impede their progress. Although surprises were expected, it was impossible for people to know in advance the form a surprise

would take, what its source would be, or which members it might involve. Moreover, organization members faced severe time pressure as they carried out their tasks. As a consequence, their responses quickly followed these unexpected events, making the link between surprises and responses to them evident. Thus, these were ideal settings in which to explore how people responded to and prepared for surprises, as they provided many opportunities to observe these processes in depth. Below, we describe how we collected the data on these processes and discuss the differences and similarities in these two settings in more detail.

Data Collection

We gathered the data for this analysis in separate studies of one SWAT team and four film production crews. In both cases, we focused on developing an in-depth understanding of how the ongoing day-to-day work of these groups was accomplished.

SWAT team. Our data were drawn from a police department in a suburb of a large metropolitan city in the U.S. South. All 18 members of the SWAT team agreed to participate in interviews. The tenure of members on the team ranged from one month to 17 years; however, 12 of the officers had been on the team for more than 5 years. Officers participated in semistructured interviews lasting between 45 minutes and three hours. The second author (Gerardo) conducted 22 interviews over a three-month period, focusing on the tasks of the group and including descriptions of possible missions for the team and details about typical training days. Interviews also covered the goals of the team, its composition, and its structure. The interviews progressed to questions regarding the tasks and roles of each interviewee within the team, which elicited detailed descriptions of activities that the individual engaged in. For example, marksmen were asked to describe how their role was different from others on the SWAT team, what additional training they participated in, and what special responsibilities the position entailed during different types of missions. In our presentation of findings, the data on the police SWAT team are drawn from interview transcripts unless otherwise specified.

Data collection also involved observation during three briefing and four training sessions. During these sessions, Gerardo observed the activities that individuals were engaged in, took field notes, and transcribed them each evening. However, he was not able to accompany the team on missions, because of the inherent danger. Of particular note are the training sessions, where it was possible to observe how officers reacted to surprise and where they spent time describing situations where surprises had occurred. Gerardo also engaged in conversations with individual officers to follow up on activities during training. Finally, he gathered archival information, including a "Manual for SWAT" describing this particular team's organization, training schedules, and certification guidelines, as well as tactical officer magazines, television documentaries, and archival material for SWAT teams in general.

Film production. The first author (Beth) conducted an ethnographic study of four different film sets. Two of these were small, short-term productions. One was a commercial for a telephone company that took place over several days and involved 50 people, and one was a music video filmed over five days with a crew of 35 people. Two sites were sets for full-length movies, including an independently produced horror movie with a budget of $2 million lasting five weeks and involving 50 crew members, and a movie backed by a major Hollywood studio with a budget of over $100 million and a crew of 175 members, which shot on location for six weeks.

Beth was a participant observer in all four projects. In three of them, she worked as a production assistant, completing duties such as making copies, helping individual departments (e.g., lighting and wardrobe), "locking up" locations, and running errands. At the fourth site, she was an observer and assisted the office production crew as needed. On the set, Beth would jot field notes in a small pad, focusing on the content of interactions between informants, and she would then expand these notes every night. Participant observation allowed her to gather substantial data on how crew members' daily activities contributed to their responses to surprises. In our presentation of findings, the data on film sets are drawn from the expanded field notes unless otherwise specified.

Beth also gathered archival material, such as daily schedules and scripts from each of the projects, as well as published insider accounts and documentaries about the film industry. She informally interviewed members of the film crews multiple times during shooting. Unstructured interviews of three production managers, two independent producers, and two studio executives unconnected to these projects provided additional information about how crew members dealt with the uncertainty of the work.

Research Settings

Like many organizations, the film production crews and the SWAT team worked on tasks whose

complexity dictates specialization and high interdependence. Here, we briefly explore the commonalities in and differences between the two settings to lay the groundwork for understanding how they developed responses to surprise; Table 1 gives more details. Two theoretical similarities make these particular organizations interesting and unique. First, both the film crews and the SWAT team operated under pervasive uncertainty with both internal and external sources. This uncertainty was internally driven both by the potential for mistakes and the simultaneity in the execution of tasks, which made coordination errors likely. Moreover, both organizational types faced uncertainty stemming from their exposure to the external environment, particularly the weather, since tasks were often completed outdoors. Second, time pressure for quick execution constrained the tasks carried out by both SWAT team and film crews, albeit for different reasons. The film crew members were concerned that longer schedules would cost more money, and the SWAT team members were worried about increasing levels of danger as time passed.

Three key dimensions of difference between the settings are also important for understanding the context in which organization members prepared for and responded to surprise: the negative consequences of surprises, the continuity of membership, and the temporal pattern of the work. First, the negative consequences of unexpected events were qualitatively different. For the film crews, these consequences were mostly cost-based, but for the police team the consequences—potential physical harm or even death—were more severe. The SWAT team and the film productions also differed in terms of continuity of membership: officers maintained long tenure and stable membership on their team, but film crews worked on temporary

TABLE 1
Commonalities and Differences between Film Production Crews and the SWAT Team

Aspect	Film Production Crews	SWAT Team
Commonalities		
Time pressure	Pressure for quick execution Need to avoid delays in schedule because of the significant costs of staff and equipment	Pressure for quick execution Need to execute missions quickly to reduce danger from suspects to officers, bystanders, and themselves
Pervasive uncertainty	Internally driven Simultaneity of execution leads to high potential for coordination difficulties Creative leeway of director and cinematographer	Internally driven Simultaneity of execution leads to high potential for coordination difficulties
	Dependence on external environment to complete tasks Weather Bystanders	Dependence on external environment to complete tasks Weather Bystanders Suspects
Differences		
Negative consequences of surprises	Costs money Need to redo work by resetting and reshooting a scene Need to extend the production schedule	Severe physical harm Armed suspects and weaponry can lead to physical harm or death
Continuity of membership	Temporary projects Membership changed across projects (70 percent new to each other) Some roles changed across projects	Coherent team with long tenure Stable membership over many years Attended training schools together
Work flow	Single production period Weeks or months to finish shooting Intervals of high activity interspersed with transition periods in which crew made changes to the set and equipment	Short, uncertain missions Minutes or hours of high tension, uncertainty, and danger Long periods between missions devoted to group training and rehearsal

projects with changing membership and roles on each project. Finally, the temporal pattern of the work progressed differently for the two groups. The SWAT team engaged in long periods of training and rehearsal, punctuated by short missions under high tension with few opportunities to pause in execution. The film productions, in contrast, were organized as single spans of weeks or months of work but with many lulls in activity between moments of filming.

Analytic Approach

While working on separate field-based research projects, one a study of coordination in temporary organizations (Bechky, 2006) and the other a study of routines in group action (Okhuysen, 2005), we had served as friendly readers and theoretical sounding boards for each other. In the course of our frequent conversations, we became aware of a striking similarity between the two settings that neither of us was exploring in our other papers: the pervasive nature of surprise. This parallel led us to a deeper exploration of similarities and differences in the two settings that confirmed that a joint exploration of responses to surprise was possible and potentially useful. We therefore combined the two independently collected data sets to develop a comparative analysis of responses to surprise.

We used a grounded theory approach (Strauss & Corbin, 1990) to analyze how these organizations routinely responded to surprises. This inductive approach enabled us to uncover the processes by which these organizations created the sociocognitive resources necessary for their real-time responses. Our analysis was based on comparisons of responses to surprises both within and between the two settings. Although there are no established guidelines for pooling ethnographic data sets, recent work (e.g., Bechky, 2008; O'Mahony & Bechky, 2006) has followed Barley's (1996) prescription for comparative ethnographic analysis. We did the same, as detailed below.

We had both conducted separate field studies, so the analytical process began with each of us conducting an emic analysis of the data that captured the participants' perspectives on the situations they faced. We had separately arrived at the conclusion that dealing with uncertainty and surprise was a major element of the work conducted in these settings. Therefore, as a first step, we collected specific instances of surprises, responses, and resolutions in each of our settings.

In the next step, through a process of comparison and contrast, we developed more generalizable categories. Pooling data for an unplanned comparative ethnography requires a different analytic process than that of a planned multiple case study (Eisenhardt, 1989). We did not have a priori categories that we used in collecting data to frame our initial analysis but drew instead on initial similarities among the categories of surprises, responses, and resolutions that we each developed. During this step, we met often and exchanged data memos and commentaries, cycling through the data, the emergent categories in our analysis, and the literature to develop categories to link our findings to more generalizable concepts (Miles & Huberman, 1984).

Comparative analysis of two settings by two researchers offers analytic opportunities but also presents challenges. Since we collected data separately, we thought it important to share the raw data within these categories with one another to help with the conceptualization process. Then we questioned one another repeatedly as to the meaning of the raw data, which helped us take advantage of multiple passes (singly and jointly) through the pooled data. We paid particular attention to the similarities and differences in what happened in each setting and tried to ground our conclusions in the specifics of each setting to maintain causal complexity (Ragin, 1989).

As one example, we found evidence in both settings that people seemed to address surprises by using materials already at hand. For instance, film crew members often talked about putting supplies "on hold," and SWAT officers discussed having a "box of toys" available for responding to unexpected situations. As we progressed in our analysis, we combined these examples and categorized them under a heading of "accumulating resources." Turning to the innovation and entrepreneurship literatures, we discovered similarities between this category and explanations involving improvisation and bricolage. We analyzed our categories more deeply in light of these literatures. Because making do with the materials at hand and returning to the task quickly were the central characteristics of these responses, rather than novelty, we chose to label this action "organizational bricolage" (Baker & Nelson, 2005; Garud & Karnoe, 2003) instead of "improvisation" (Miner et al., 2001; Moorman & Miner, 2001).

Revising our categories with respect to the bricolage literature led us to uncover how organizational bricolage in response to surprises in our settings was rooted in social interaction focused on developing shared knowledge. This, in turn, led us to greater scrutiny of the processes underlying organizational bricolage. Using the constant comparative method (Glaser & Strauss, 1967), we identified how members engaging in organizational bricolage drew

on sociocognitive resources—shared task knowledge and common work flow expectations—and subsequently explored how these were developed. By pursuing the commonalities and differences in the two settings, we developed the emic categories from each setting into an etic, more generalizable model of these processes.

FINDINGS

Both the SWAT team and film production crews were settings in which surprises were pervasive. Surprises appeared daily in observational field notes and were described in almost every interview. In each case, a surprise was marked by a break in participants' expectations, which often related to how tasks unfolded in the work of the group. For example, during a SWAT entry into a location, the first officer in the "stack" (the formation from which team members initially move) found his way blocked by a couch. This surprise required a rapid adjustment. On one film set, a break in expectations occurred when a specialized camera operator did not show up to film a scene, and crew members were reassigned to complete the shots for the scene. Other surprises caused more dramatic reactions. After working for several hours to prepare a car to be towed through a location for filming, the grips (who set up the production equipment) were dismayed when the tow mechanism broke, and the crew had to scramble to reorganize and shoot other scenes. A SWAT officer described how during a mission a marksman shot at a suspect and missed, alerting him and raising the danger for everyone, forcing officers to quickly break into the house to arrest him. Table 2 presents additional examples of surprises from our data.

The Emergence of Organizational Bricolage in Response to Surprises

The responses of the team and crews to surprises showed several characteristics of *bricolage*. One characteristic was emergent action combining resources already gathered in the course of regular activity (Baker & Nelson, 2005; Levi-Strauss, 1966).

TABLE 2
Brief Examples of Surprises in the Two Settings[a]

Film Productions	SWAT Team
a. Multiple crew members could not locate the bathroom after arriving in a new filming location.	j. While executing a "dynamic entry," they found the path for the first officer in the "stack" was obstructed by an unexpected couch.
b. A specialized aerial camera operator did not show up for work on the day his aerial shots were scheduled to occur.	k. Officers found more suspects at a location than had been originally anticipated.
c. After they arrived at an isolated location, the crew was missing several members needed to make scenic and property changes the director wanted.	l. After arriving at the location of a hostage situation, the sharpshooters could not cover all observation angles.
d. After the production started, the office crew learned that the second assistant director, responsible for creating the daily schedules including the scene schedule, did not know how to do scene scheduling.	m. On arriving at a location, the team needed a large number of officers on perimeter, which meant that the break-in team was short of officers.
e. A fire broke out in a trash can at the edge of the set.	n. A SWAT marksman shot at a suspect but hit the frame of the screen door as it was closing and missed the suspect.
f. The grips spent half the day setting up a tow rig for a picture car. But as they were pulling it up to the set, the tow mechanism broke.	o. After setting up explosives to blow up a door, the lead officer checked the doorknob and found it unlocked.
g. At midday, a principal actor came down with the flu and had to leave the set to go to the doctor.	p. A TV station broadcasting a standoff gave away the placement of officers to the suspects, who were watching TV inside the location.
h. A high wind developed after the crew had spent several days setting up an elaborate aerial camera rig at the top of a skyscraper.	q. As the officers were approaching an apartment, loose floorboards made a lot of noise, alerting suspects to the officers' approach.
i. During a slaughter scene on one set, a hot tub overflowed when the actor fell into it during shooting, and the water shorted out the lights in the entire building.	

[a] The letters labeling the surprises correspond to the response examples in Table 3.

Another important aspect of responding was the need to "make do" (Baker & Nelson, 2005; Levi-Strauss, 1966) to allow for continued action on the task at hand, since neither group could reasonably abandon its work because of a surprise. In other words, the task demands did not relent as a surprise unfolded. In addition, the time pressure of cost burdens and danger from suspects meant that individuals had to respond in the moment, and this demand limited the actions they could take in response to surprises. By responding to surprises through the use of resources that were already available, these groups could act quickly. Next, we describe the specific practices of organizational bricolage that SWAT teams and film crews used to respond to surprise.

Practices of Organizational Bricolage

Organizational bricolage in response to surprises took three main forms in our data. In some cases, both film crew and SWAT team members used their shared task knowledge and common work flow expectations to shift roles in response to surprises. At other times, group members reorganized by drawing on already learned group routines, particularly in the SWAT team. On film sets, in contrast, some surprises caused a reordering of the work, in which the crew reoriented its efforts around new specific tasks. In Table 3, we provide examples of these activities, each linked to the surprises summarized in Table 2.

Role shifting. Some surprises left critical roles temporarily empty and the tasks within them undone. When such surprises occurred, our informants drew on their task knowledge to engage in role shifting—that is, adjusting their own activities by substituting for someone else or performing some of the tasks in someone else's role. For instance, Glenn[2] described how finding a couch in the team's path during an entry surprised the SWAT team. Ordinarily, the lead officer in an entry team rushed ahead to achieve maximum coverage. In this case, though, the couch was a dangerous obstacle because, as Glenn put it, "Someone could be on the other side, just waiting for us." He then described how the team responded to the surprise by using role shifting. Instead of running to the right as originally planned, Glenn ran left and stopped at a vantage point where he could "cover" the couch. Peter, who was second in the stack and whose role was to run left, immediately ran to the right around the couch while being covered by Glenn, executing the task originally assigned to Glenn. The ability to adjust to each others' actions without explicit communication was made possible by redundancy in task knowledge; as Glenn said, "We know what everyone is supposed to do."

Role shifting also occurred in response to significant surprises on film production sets, such as absences of essential crew members. Here, the role shifts were more formal. On one production, a camera operator for the second unit was called in to operate an aerial camera requiring specialized skills. Surprised when the camera operator did not arrive for work, the executive producer and camera crew got together to discuss their options. The cinematographer asked four or five members of the crew, "Are you capable of operating this camera? How about moving up to [a different position], can you do that?" After determining everyone's qualifications, the first camera operator of the B camera for the first unit moved to the second unit, as he knew how to operate the aerial camera, and the second operator of the B camera moved up to the first position. The camera crew's overlapping task knowledge enabled members to shift roles and continue shooting on the same schedule that day.

Reorganizing routines. In other instances, surprises disrupted the expected flow of the work for members. In these cases, responses to surprises entailed changing members' approach to work. On the SWAT team, officers responded by reorganizing routines—that is, by reorienting themselves to a new set of goals and restructuring their activity by switching the routines they were using.

Michael, a paramedic, relayed a story of one mission when a SWAT marksman took a shot at a dangerous suspect and, unexpectedly, the bullet hit the doorframe as the door swung shut. Instantly the situation became much more threatening, because the suspect was alerted that the team was trying to kill him, putting his hostages in immediate danger. The break-in team, which had been waiting outside the house for an opportunity to arrest the suspect, had to quickly reorganize, and officers executed a "dynamic entry" without taking time for a conversation. Here, the SWAT team updated their understanding of the situation in the moment and chose a well-rehearsed routine for entry from their repertoire, changing their goal and their actions in response to this surprise. As Dave, another SWAT officer, explained, "If shots get fired or if you start hearing negotiations going bad, it's time to enter. You're going. Time can be on your side, but when the split second is up, you've got to be moving."

Similarly, on another mission Dave described, the team was planning to use explosives to blast open a fortified door at a drug house. As Pat, the

[2] All informant names are pseudonyms.

TABLE 3
Examples of Organizational Bricolage Responses to Surprises[a]

Response	Film Productions	SWAT Team
Role shifting	a. When one production moved to a new location, many of the crew could not find the bathrooms, because the location manager did not put the proper signs up. After several crew members asked about the bathrooms, the production office coordinator used her knowledge of the location manager's tasks to create and post the bathroom signs herself.	j. During an entry into a drug house, the lead officer found a couch in his path. This raised some danger because "someone could be on the other side, just waiting for us." The officers instantly changed their approach and, instead of running to the right as planned, the lead officer ran left to "cover" the couch. The second officer, whose role was to run left, immediately ran to the right to cover the room.
	b. On one production, a camera operator for the second unit was on call to operate an aerial camera requiring specialized skills. Surprised when he did not arrive for work after he was called in, the executive producer and camera crew got together to discuss their options. After determining everyone's qualifications, the first camera operator of the B camera for the first unit moved over to the second unit, as he knew how to operate the aerial camera, and the second operator of the B camera moved up to the first position.	k. Breaking into a location, the team found more suspects than expected. In response, the lead officers changed their primary role from trying to reach the furthest corner of the location to covering areas and suspects as they advanced. This allowed officers further back in the "stack" to change their mission as well, and they took the lead in covering every part of the location.
	c. A couple of crew members complained to Beth about a commercial production at a reservoir the prior weekend, where one of them was hired as a set production assistant but ended up also performing the craft service job, and the other was hired as the assistant production office coordinator but also worked as the chauffeur (a task normally assigned to a teamster). A third crew member performed the tasks of the entire art department, as well as filling in for the scenic department. As one of them described, "They just looked at him one afternoon and said, 'We need you to manufacture pond scum right now.'" Another crew member, hired as the boom operator, also performed the property assistant's role.	l. In establishing a perimeter during a mission, the team discovered that the layout of the buildings unexpectedly blocked some views so that the sharpshooters could not cover all angles. The team decided to use members of the "alley team," who are usually in charge of controlling a perimeter and arresting "runners," to help gather intelligence. Two members of the alley team were assigned to this task, and in their new role climbed onto roofs and complemented the observations and intelligence gathered by the sharpshooters.
	d. On one set, the second assistant director was new to her role and did not have experience scheduling scenes, which was one of her tasks. The location manager took over the task for the first part of the production.	m. The team found itself short officers on the break-in team, because the location required guarding and maintaining "a very large and very flat outer perimeter," drawing officers away from the break-in team. As a consequence, two of the marksmen filled in to complement the break-in team.
	e. On one location, an extra ran down the hill in the park toward the set, yelling, "We need water, someone lit a trash can on fire!" Rather than wait for members of the safety crew to respond, one of the assistants in the locations department ran over with a cooler, which earlier had been icing down cold beverages on the set, and used the water to douse the fire.	
Reorganizing routines		n. A marksman's bullet, intended to kill a suspect, hit the doorframe where he was standing. The suspect was instantly alerted that the team was trying to kill him. Recognizing the changed situation, the waiting break-in team executed a "dynamic entry," a well-rehearsed routine, without taking time for a conversation.
		o. The team was about to use explosives to blow out a door. The lead officer checked the door handle, found it open, and the team switched to a "stealth entry" right away.
		p. During a hostage mission, a local TV station broadcasted live from a helicopter and the suspects, watching TV, could see exactly where the SWAT team was positioned. In response, the officers abandoned a rear entry strategy in favor of a frontal approach, to regain the initiative.
		q. The plan called for a stealth entry in "one of these smaller, older apartment complexes that have wooden floors [with] wooden decking. As you walk in down there, "'Trump, trump,' [you] start making noise . . . and you are going to wake people up." The loud approach could alert suspects to the presence of police, and it would be difficult to recover the advantage. "So as soon as you hear that, you know, you probably need to speed up a little bit. Go ahead and hit it."

TABLE 3
Continued

Response	Film Productions	SWAT Team
Reordering the work	f. The grips spent half the day setting up a tow rig to pull a picture car to simulate a drive through the location. But as they were pulling it up to the set, the tow rig unexpectedly broke. After a flurry of activity, the heads of the departments discussed the situation and decided they could not shoot the planned scenes involving the picture car and would need to change shots. Informing the grip crew of the change, the key grip said into his walkie-talkie, "Okay, new deal, now the Technocrane is coming to me, and we are shooting scene 17" (a different scene than planned).	
	g. One morning, a lead actor with scheduled scenes for the afternoon came down with the flu and needed to be taken to the doctor. The producer then suggested picking up the big Steadicam shot of the area, which did not require the principal actors, so they would not have to go back to that location with the Steadicam later in the shooting schedule.	
	h. When a high wind developed, the aerial effects crew could not do their planned shots requiring the camera to ascend and descend on the side of a skyscraper. The unit production manager (UPM) and the aerial effects coordinator talked about how to respond to this surprise. The UPM asked, "Are you concerned about the building?" "No," responded the aerial effects coordinator, "I'm worried about sideloading my truss." The UPM suggested, "I just got another weather forecast from the associate producer, his forecast says less wind tomorrow. But the problem is today." The aerial effects coordinator pointed out, "I think that we have to think about alternatives, and the last scenario is that we could put it off. . . . I'm not going to do something unsafe. If it is howling tomorrow and we can't work, we'll go help the grips at the other location, and keep hoping we can come back." The UPM reminded him, "What's sad is that we don't know what the weather'll be like then either. . . . These are all money shots. I think we will make the decision in the morning tomorrow." After talking with the cinematographer, the crew took several shots and rescheduled the rest for later that week.	
	i. During a scene in which an actor was "slaughtered" and fell into a hot tub on the top floor of a mansion, the crew forgot to account for displacement and the tub overflowed. As a production assistant announced over the walkie-talkie, "I'm on the first floor and there is water dripping on my head," the power distributor box, also on the first floor, shorted out from the water. All the scenes set to be filmed that evening with the hot tub were rescheduled for the following day. The electricians shifted the power to the generators and they shot a different scene in the dry living room.	

[a] The letters labeling the examples of bricolage correspond to those labeling surprises in Table 2.

expert in charge, was finishing rigging the explosives, he checked the door handle and found it unlocked. He quickly motioned to the rest of the team and, instead of storming in on the heels of an explosion, the officers switched to a "stealth entry," changing the nature of their work. In recalling the mission, Dave said "It's always safer to go in quietly, because the noise can add to the confusion and make [the suspects] act out. . . . This way, they don't even hear us coming in." This switch in tactics allowed the officers to increase their margin of safety by avoiding the use of explosives and by catching the suspects unaware. The change in routines occasioned by the surprisingly unlocked door was enabled by the common understandings that the team shared about when to use a stealth entry and how to execute it.

Reordering the work. Film production crews did not reorganize by relying on learned routines. Rather, when surprised they sometimes responded by reordering the work of shooting the film, taking advantage of their knowledge of the work progression and how tasks fit together. Reordering the work involved changing the sequence in which pieces of the overall project were completed. In other words, when an unexpected event made it

impossible to continue with the current trajectory of the work, film crews responded by reorienting the path of the work to shoot different scenes.

On one film production, for instance, the grips spent half the day setting up a tow rig to pull a "picture car" to simulate a drive through the location. But as they were towing the car up to the set, the rig unexpectedly broke. After a flurry of activity, the heads of the departments discussed the situation and decided they could not shoot the planned scenes involving the picture car and would need to change scenes. Informing the grip crew of the change, the key grip said into his walkie-talkie, "Okay, new deal, now the Technocrane is coming to me, and we are shooting scene 17" (a different scene than planned). The Technocrane, a specialized piece of camera equipment, was already set up for several shots planned for later in the week and could be repurposed to continue production. The discussion between the key crew members enabled them to update their understanding of what to do next, and they communicated this to the crew, who moved quickly to change equipment and reorder their work to respond to the surprise.

Similarly, when a lead actor with scenes scheduled for one afternoon came down with the flu, the production crew reorganized the schedule in response to this surprise. The key crew members got together, and the producer suggested, "I think we should pick up the big Steadicam shot of the area." The cinematographer agreed: "For that one we don't need the actors." Also, this meant that they would not need to return to the location with the Steadicam (an expensive piece of equipment with a highly paid operator) later in the shooting schedule. This reassembly of scenes enabled the production to carry on shooting that day without the sick actor's presence.

Role shifting, reorganizing routines, and reordering the work were forms of bricolage that we documented in many of the responses to surprises we saw among the film crews and the SWAT team. Organizational bricolage allowed team members to continue their work without interruption. They were able to engage in bricolage by using the resources immediately available to construct responses to the unexpected situations they encountered.

Resources for Organizational Bricolage

The process of responding to surprises in these settings suggests a complex conception of bricolage in which the resources needed are not just material, but also social and cognitive. In both the film crews and the police team, responding to surprise relied heavily on interpersonal collaboration to adjust the work, and a group's shared understanding of that work was critical. The physical resources that the groups accumulated (materials and people) could only be used when the individuals in each group had shared understandings of the situation.

Our analysis of the data uncovered two sociocognitive resources that these groups relied on in their responses to surprises: shared task knowledge and common work flow expectations. *Shared task knowledge* is process knowledge, held by multiple group members, about how to complete activities or accomplish particular aspects of tasks. This knowledge was indispensable if people were to substitute for one another or otherwise complete one another's activities. For instance, the camera operators in the earlier example could shift roles to respond to the surprise of the missing operator because another member of the crew had the same task knowledge, allowing the crew to reorganize the work around the skills of the individuals present. Without shared task knowledge, responding to surprises would likely require far more time and effort to achieve and would be considerably more difficult.

By *common work flow expectations*, we mean a shared understanding of how events in a collective task follow one another. To successfully respond to a surprise, members of these organizations relied on these shared expectations of how the set of activities would lead to completion of the work. For example, reducing the danger from suspects was always an important objective for SWAT officers. As Paul remarked, "Because [suspects] can be unpredictable, you always try to be one step ahead of them, that is a big part of our job." For instance, during a stealth approach to an apartment, an unexpectedly noisy wood plank floor loudly announced the officers' arrival to the suspects. Team members quickly reacted, speeding up and executing a dynamic entry instead. Such a change was possible because officers shared expectations that it was important to arrest the suspects before they could react to the officers' approach.

On a film set, crew members shared the expectation that they would try to complete as many shots as possible, given the contingencies faced on a given day. As the day drew to a close, crew members would check their daily schedules to see how many scenes remained unfinished, and cinematographers would start complaining "Let's pick up the pace, we're losing the light!" Therefore, when the tow rig broke, crew members were prepared to modify the sequence of shots to be completed that day, using their shared understanding of what scenes and equipment were immediately available to substitute. In both settings, responses to sur-

prises relied on members' common expectations of the direction that the task needed to take for progress to be made, whether it meant rushing a suspect or switching the next scene to be filmed.

Both shared task knowledge and common work flow expectations are forms of common understanding (Okhuysen & Bechky, 2009) or shared cognition (Cannon-Bowers & Salas, 2001; Klimoski & Mohammed, 1994), and both reflect task-specific knowledge. As Cannon-Bowers and Salas (2001: 23) noted, "This type of shared knowledge allows team members to take action in a coordinated manner" (2001: 23). However, in our conception task knowledge and work flow expectations represent two different shared understandings of a task. Task knowledge is the very detailed and specific information required to effectively perform the work of a single individual. To the extent that more than one person holds this type of technical knowledge, it becomes easier for individuals in a group to substitute for one another and shift roles. Importantly, shared task knowledge also allows them to understand how the work of another is executed, and knowing how the work of others advances also helps when reorganizing routines and reordering the work. In contrast, common work flow expectations are members' knowledge of the course of subsequent action in their group. This knowledge is also detailed and specific, involving the particulars of the task that the group is currently engaged in, but is related to how that task advances, and thus is event-based and prospective in nature. Common work flow expectations are not as reliant on overlapping technical knowledge as task knowledge is. To the degree that members understand the intended trajectory of the task similarly, common work flow expectations enable a group to shift roles, reorganize routines, and reorder the work; they can arrange, eliminate, or incorporate activities into the work as needed.

Processes Enabling Organizational Bricolage

These two sociocognitive resources, shared task knowledge and common work flow expectations, enabled members to engage in organizational bricolage when surprises happened. Understanding how organizations develop these resources sheds light on the activities that directly and indirectly helped group members be prepared in the event of a surprise. We therefore move next to an examination of how shared task knowledge and common work flow expectations were formed and sustained by patterns of interaction on the film sets and in the SWAT team. In both settings, we discovered similar processes: these organizations drafted agreement on the work, reinforced and elaborated task activities, and built cross-member expertise. Although we have conceptually separated shared task knowledge and common work flow expectations to describe how they enable bricolage, in both the SWAT team and film crews these sociocognitive resources were developed simultaneously through these three processes. Table 4 presents additional examples of the development of sociocognitive resources.

Drafting Agreement on the Work

Film crews and the SWAT team developed shared task knowledge and common work flow expectations by drafting agreement on the work beforehand. *Drafting agreement* refers to collectively preparing a tentative or provisional approach to execution, through interaction among organization members. By provisionally agreeing to an approach, organization members created shared knowledge as they discussed the unfolding of tasks. In the SWAT team, this regularly took place during premission briefing meetings. At one meeting, Ted, the officer in charge, held up two fingers and indicated the goals for the mission on a suspected drug laboratory: secure the location by neutralizing the suspects and secure the evidence. As officers asked questions and made suggestions for an approach to the location, Ted led the conversation that also clarified that once the location was secured, the SWAT team would exit, leaving the investigation to the Vice Squad.

For the SWAT team, a primary organizing focus when drafting agreement was the physical location of the mission they were to undertake. Typical briefing meetings included sketches of homes or apartments on whiteboards, photographs and, in some cases, video from drive-by surveillance or a helicopter fly-over. The information on the location was used to establish goals for the team and to develop a rough outline of how execution was expected to proceed during the mission. In another meeting, Andrew stood by a crude location map and, as the "alley boss," assigned pairs of officers to cover particular exits, including a back door to the apartment and the front and back exits to the complex. His group was in charge of preventing the escape of suspects and establishing a tight inner perimeter, but officers from the entire team engaged in conversation on the best way to secure the location. The second team leader, Tim, then stood up and assigned individual officers on the break-in team of six officers to their position in the stack (the formation they would use to approach the door of the apartment). Once again, the team evaluated the

TABLE 4
Examples of Processes That Developed Shared Task Knowledge and Common Work Flow Expectations

	Film Productions	SWAT Team
Drafting agreement on the work	At a meeting on the first day of shooting on one production, many questions and comments were raised by the production designer, the art director, and the location manager, who had already scouted many of the locations and knew what they would need to prepare and dress the set at each place. As one production moved into its second week, the unit production manager (UPM) reported to the vice president of production at the studio, "We had a better day yesterday, they're having nightly meetings, little skull sessions to decide what the first shot will be. So that way when we come in the morning, we don't have the disaster like Monday with the director coming in and looking around for one and a half hours thinking about where to put the camera." The heads of different departments met on a soccer field to block out the action for a soccer game scene in one film. The first assistant director jogged across the field showing how the action would progress, and the cinematographer, producer and camera operator pitched in ideas on the locations for cameras and other issues. A complicated scene in Central Park was the subject of many impromptu discussions on one set. One discussion was about whether to use 120- or 80-foot "condors." The UPM told the aerial effects coordinator "We went through it with the [supplier] last week and the 120s have too heavy a load and are too big," indicating some concern that the weight of the equipment would break the asphalt walkways in the park. "We can spread the load," replied the aerial effects coordinator, "and I'm sure we have clearance on the pathway. I went over it already with [the park representative], who says he's okay with it, as long as I'm sure." The location manager came by and agreed with the aerial effects coordinator that the park representative was okay with the plan. The UPM said, "Okay, but I want to be sure it'll fit on the path." They got a tape measure and headed over to the exact location, where they measured the clearance on the path. This was followed by a long technical discussion about measuring, spreading the load, and how the equipment was going to be set up. On one set, the crew rehearsed a scene where a severed head fell to the ground out of a duct in a wall. "Rehearsal," the first assistant director called, and the crew members moved into the living room. The production designer went behind the wall, and they demonstrated using a flashlight how the head would fall out of the duct, followed by the actors running from the room.	In a meeting to prepare to serve a search warrant in a suspected drug laboratory, the briefing officer explicitly noted that the SWAT team had two goals, to secure the location by neutralizing the suspects and to secure the evidence. As questions and concerns were raised and suggestions were made, the plan for the approach was developed, and he clarified that once the location was secured, the SWAT team would exit, leaving the investigation to officers in the Vice Squad. One meeting began with two senior officers briefing the team on the details of the plan. One of the team leaders, the "alley boss," was in charge of eight officers who would secure the inner perimeter for the mission, preventing suspects from escaping. He assigned pairs of officers to cover particular exits on a diagram of the location, and all officers then participated in a conversation about the best way to secure the complex. The second team leader was in charge of the break-in team. He briefed all the officers on the entry activities, including coverage inside the location (using the diagram on the board) and expected opposition by suspects. He also assigned positions in the "stack" (the order in which they would be entering the apartment). The officers discussed the proposal from the team leader and recommended different changes until all concerns were satisfied. A SWAT team in a documentary (A&E Home Video, 2006) prepared for an undercover drug buy from a dangerous suspect by going out to their precinct's parking lot and, using a similar car to the suspect's, sketching out a variety of tactics. After trying several approaches, they selected one in which the team blocked in the suspect's car with a blacked-out van and another vehicle, and simultaneously immobilized the suspect in his seat to prevent him from using a firearm. All of this was to take place quickly, as soon as the drugs changed hands. During an interview, an officer described planning a drug raid, saying "We have a raid and everybody is sitting in here and we draw it up on the board, and we pick line-ups as to who is going where." During a training day at the fire department, the team rehearsed rappelling down the outside wall of a four-story building. As the trainer in charge explained, "You want to make sure the ropes don't cross over each other, and that everyone ends up in the right place before you start going in the window. You don't want to end up with a bunch of guys on top of each other, tangled in the ropes."
Reinforcing and elaborating task activities	While Beth was working as a production assistant in the electric department of one set, the gaffer instructed her on how to create flickering firelight for one scene by rapidly adjusting the controls of several lights on the set. He stood behind her off screen, and in between takes, he provided directions such as "make sure you use the full range [of the control]" and "try to vary the speed you're moving it more."	Rehearsal for dynamic entries took place in a warehouse, where a simulated house was built by officers. This house had movable walls on hinges and different types of furniture inside. During training some officers acted as suspects and "threw in a twist" by changing the arrangements of the house, the number of suspects, or the amount of resistance they put up, with each modification presenting a new challenge to the team. As an officer noted, "[they] make small changes, to see the team adjust." A junior officer described a particular mission during which, "in the heat of the moment I was supposed to go left but started heading right, following the guy right in front of me." As he began to move in the wrong direction, a more senior officer immediately behind him in the entry stack grabbed him "by the collar" and "shoved" him in the correct direction.

TABLE 4
Continued

	Film Productions	SWAT Team
Reinforcing and elaborating task activities (*continued*)	The key grip on one set wanted a muslin set up near the camera. Two grips asked, "Where's it going to go? We'll bring the stands over there." When the key grip said to put it to the left of the camera, the grips set up two big stands on the left side of the crane, and two other grips brought the frame over. The four grips tied the muslin to one side of the frame, after they put it on the stands. Watching them, the key grip suggested, "It is a two-man job now, the other two guys should be getting sandbags." Two grips ran off to get the sandbags, while the other two wrapped the muslin over the other side of the frame, bringing it back around. The key grip, pointing to the original edge, said, "You've gotta tie this edge first, otherwise it can get dicey." The two grips brought the sandbags in a rolling basket, and used them to weigh down the frame. When they were finished, the key grip looked at the frame, which was kind of lopsided, and asked, "Who made a mess of this frame? You pull down on that end, let's even it out. Now, tighten the knuckles [knobs at corners of frame]." One sunny morning on the set, the craft services [food and beverages] person was asked to go buy sunscreen, and she left the set and went to a store to get it. While she was out, the weather warmed up, and the cast and crew started drinking all the water and ran out of cold drinks. The production office coordinator loaded up a cooler from what they had in the office, and Beth carried it to the set. When the craft services person returned to the location, the production office coordinator explained to her that she wasn't supposed to leave the set. "You need to pass it off on someone else to leave, and stay with the craft services stuff. . . . It is standard on all shoots for craft service to always be available, it is part of the job. Don't worry about it, but try to have one of you around. Even if it means just coming back to check, as long as you do it every five minutes." The unit production manager asked over the walkie-talkie: "Anyone have eyes on the cinematographer?" When no one responded, she explained to the production assistants, somewhat annoyed, "The proper response is to say, 'Looking,' and actually go look."	One officer described the team's postmission meetings: "If it doesn't work out, then we sit down and 'Monday morning quarterback' it, and you know 'you could have done this, what you did worked out fine,' or maybe it didn't. . . . As a group [we] come up with something comfortable that we all kind of agree on and go from there [. . .] we sit down, and we actually talk about and communicate about it, until we get comfortable with it if we weren't comfortable with the way it went down." A senior officer described how during one mission, he checked a rookie's bullet-proof vest and made him take it off and put it on again, explaining that he had it on backwards and showing him how to identify the front and back by looking at markings on the inside. A senior officer described sitting down with a junior officer to listen to a tape recording of their prior mission (made for evidentiary and liability reasons). When he played the tape, the junior officer responded with "Hey, who was that? Who was that screaming?" After they played it again, the junior officer said "Well, I guess that's me." Reflecting on this with Gerardo, the senior officer said: "And I can work with [him] and I can say, 'You know, you would give better commands if you would not scream. People could hear what you are saying better, and your suspects will react to what you are doing and do what you were saying a lot quicker.' You know . . . he didn't like it. But he realized what he's doing. So next time, he is more cognizant of it." Officers doing a "Monday morning quarterback" on a mission during a training session discussed the unexpected presence of children during the execution of an arrest warrant. In the course of the mission, the children had become an important distraction from the need to subdue the suspects and bring them into custody. As the discussion progressed, SWAT team members came to a joint agreement on how they should approach these situations, concluding that they should call in the paramedics as quickly as possible to take the children away from the scene.
Building cross-member expertise	The sound mixer explained to Beth how he knew one of the grips on the production. They had worked together on a prior production, where the director had recommended the grip to work in the sound department as the boom operator. As they had traveled together to the set, the sound mixer asked the boom operator about his experience. The boom operator had never operated a boom before. His previous job working with this director was in craft services. Therefore, in a span of about six months he had worked in the craft service, sound, and grip departments on different projects. A production assistant interested in becoming an electrician talked with Beth about how she gained experience in this area: "I got hired as a PA [production assistant]. Then, on the third day, I started bugging the "right people." I bugged the genny operator, "Is there anything I can do for you?" And I wrapped a cable, he thought it would take me 45 minutes but I came right back. Then he asked if I could gel lights, I said yes, so I did that. That's how I got assigned to the electrics this week."	During a training session, the officer in charge noted that all officers on the team "are supposed to know everybody else's job." In this session, the officers on the team practiced on the shooting range. For Brett, a junior officer, it was the first time using a sharpshooter rifle and scope. As Dan showed him how to hold the rifle and use the scope, Brett remarked how clear targets became. In a later interview, Brett described the importance of training sessions for him. Referencing his experience with the rifle and scope, he said "I had no idea that the scope was that good. I guess I sort of knew that it must be pretty good, but you can see the face on the penny [on the target]." He then continued, "It totally makes sense how the snipers are on the roof even when they aren't going to shoot. They can see more than we can." After officers attended specialized schools, they presented what they had learned to the other officers during training. An officer insisted that "we exchange everything we learn" and "anything that we can go to a school and learn, a better idea or whatever, we try to bring it back and we kind of adopt the idea." After attending a nonlethal tools school, one officer explained to the group that "you don't use flash bangs when children are present, because they are dangerous." As he continued his explanation, he also highlighted the difference between smoke canisters and tear gas canisters, which he described as "a pretty big way to escalate things."

TABLE 4
Continued

	Film Productions	SWAT Team
Building cross-member expertise (*continued*)	An office production coordinator, discussing her career choices, noted that in her current position, "If I want to produce, I am on that track. If instead, I want to be an AD [assistant director], I am also on that track. You get a lot of exposure as a production coordinator, so you can do a bunch of things. Look at the head of the wardrobe department, she used to do it, for example."	One officer in an interview noted that it was important to become familiar with all the jobs that were done on the SWAT team. "[Officers] are supposed to know everybody else's job." A paramedic mentioned that even though he does not carry a gun and would probably never shoot anyone, it's good to know "how to put the safety on a gun, at least."
	A new office production assistant, describing how she got her position, said, "I started at a commercial production house. Then I went to this party and met the UPM of this set, she interviewed me and hired me for the office. I'm not sure I like the office stuff, this is my first time doing it, I prefer to be on the set."	During an interview, a rookie officer preparing to go to basic SWAT school described what he expected to learn: "How to do a dynamic entry, which I've already done here with the guys. . . . But you do a hundred of them. . . . And weapons, some of the weapons that I can't use yet, and how to work with specialists, like hostage negotiators." He also commented that "going to the same school and learning things the same way they did is what it's about. We're all supposed to learn the same."

proposed order and recommended changes, redrafting the plan until everyone's concerns were satisfied, with the understanding that circumstances might cause changes in their work during the mission.

In the case of film crews, drafting agreement on the work depended on the joint use of schedules, because they captured the temporal unfolding of the production process, such as the sequencing and expected time needed to shoot particular scenes. Common expectations for how filming would unfold began developing through the shooting schedule, created by the production manager from the script and storyboards, with input from other department heads. Right before shooting would begin, the heads of all the production departments met to go over this schedule. These meetings set out how filming would progress and provided information that different departments needed to prepare for filming. For instance, at a meeting on the first day of shooting on one production, the production designer, the art director, and the location manager, who had already scouted many of the locations, raised some issues. After repeated references arose to scenes in the park or the Milton Building, the art director noted the work that would be required for those scenes: "Basically, every time we shoot in the park location or the Milton Building, we are going to have to dress it . . . you can see it in almost every shot."

In both settings, organization members drafted agreement on the work publicly, with wide participation from members and opportunities to ask questions, propose alternatives, and critique approaches as they were being outlined. The active and engaged conversation that took place around plans and schedules, in view of everyone, established common work flow expectations and understandings of the task while providing provisional guidance on what would happen in execution. Although there were similarities in the ways film crews and the SWAT team drafted agreement, the work flow created some differences in the process.

For the film crews, the temporal pattern of the work, characterized by long periods of preparation interspersed with short bursts of intense activity while shooting, allowed for drafting agreement to happen almost continuously. Key members of departments met first thing in the morning and at the end of each day, and groups of crew members also got together briefly throughout the shooting day. In these ad hoc meetings, members worked continually to improve the execution of the filming by drafting agreement on the work. For instance, after a series of delays on one set, several key individuals started having "little skull sessions" every night to troubleshoot potential problem areas for the next morning. Ad hoc meetings could also involve running through scenes, as when the heads of different departments blocked out the action for a soccer game scene. In this meeting, an assistant director jogged across the field showing how the action would progress, and the cinematographer, producer, director, and camera operator offered ideas such as locations for cameras and the need for additional actors. "Do we need fans?" asked the assistant director, and the director replied, "Maybe just the coach."

Through ad hoc meetings, crew members developed an immediate, fine-grained, and emergent understanding of the task's demands. These forms of drafting agreement thus not only helped set common work flow expectations for the participants, but also contributed to shared task knowledge. In

contrast, officers on the SWAT team did not have such a continuous flow in drafting agreement about the work. Because of time pressure and potential danger, the team was often unable to interrupt their work while they were in the midst of executing a mission. Instead, the vast majority of these practices occurred during briefing meetings for planned activities such as carrying out arrest warrants, or in the first few moments of an emergent situation such as a hostage mission.

Reinforcing and Elaborating Task Activities

By reinforcing and elaborating task activities, members of the SWAT team and the film crews also created common work flow expectations and shared task knowledge. *Reinforcing and elaborating* task activities means strengthening task knowledge and giving individuals additional detail about the work. In these settings, people provided guidance to each other on how to best perform tasks, pointing out how performance of a particular task could be improved or how it might relate to their own tasks. Reinforcing and elaborating task activities happened in both settings, but there were important differences in how they happened that were based on the different temporal patterns of the work and on the varying degrees of continuity of membership. Because of the pattern of the work, film crews had more time to elaborate while executing their task, but SWAT team members were more likely to elaborate before and after the missions, during training and in debriefing meetings. Also, reinforcing and elaborating task activities was mostly an individual learning mechanism for film crews, whereas for the SWAT team, reflecting on tasks often resulted in group learning.

Film crew and SWAT team members often provided guidance to one another, reinforcing and elaborating task activities during their execution. On the film sets, crew members could use the time while they were accomplishing the work to elaborate feedback to one another, as when the key grip on one set guided his crew through setting up a muslin near a camera, saying "You've gotta tie this edge first, otherwise it can get dicey. . . . Now, tighten the knuckles [knobs at the corners of the frame]." While Beth was working as a production assistant in the electric department of one set, the gaffer, Stan, instructed her on how to create flickering firelight for one scene by rapidly adjusting the controls of several lights. Stan stood behind her, and in between takes, he provided directions such as "Make sure you use the full range [of the control]" and "Try to vary the speed you're moving it more," to make the flickering appear more random.

Film locations were relatively close quarters in which much of the crew could see what others were doing at all times, and as a consequence this process of instruction and correction was public. Beth often observed crew members in different departments joking about performing a task properly or telling others how to perform their roles, as on one set where the sound mixer told an electrician "Can you route your cable around the edge of the room? Otherwise it interferes with my equipment." Public reinforcing and elaborating served to broadcast task knowledge, helping develop shared knowledge and expectations among everyone who was within earshot.

In the case of the SWAT team, quick corrections and reinforcing of appropriate behavior sometimes took place during missions. For example, Joe, a veteran officer, described a moment at the start of a mission: "I pulled on [a rookie's] kevlar vest and it came up around his face. He had to take it off, he had it on backwards. . . . I showed him the markings inside, it's the only way to tell front from back." However, SWAT teams were less likely to elaborate while on a mission, owing to the time pressure and danger. Instead, after a mission, SWAT members gave each other feedback on appropriate task performance. For instance, a senior officer described how, during debriefing, he played a sound recording of the mission for a junior officer, who could be heard yelling commands. He said that he explained, "You would give better commands if you would not scream. People could hear what you are saying better, and your suspects will react to what you are doing and do what you are saying a lot quicker."

Moreover, the SWAT teams' elaboration and reinforcing of task activities had an additional benefit for developing shared task knowledge and work flow expectations. Because officers trained as a group and expected to work together on future missions, they had the opportunity to build common work flow expectations for future activities together. During a training session attended by Gerardo, officers discussed a previous mission, where the unexpected presence of children had become a large distraction from the main goal (arresting suspects and bringing them into custody). As the discussion progressed, SWAT team members agreed that, in the future, they would call in paramedics as quickly as possible to remove children from the scene. Consensus on appropriate task activities in response to particular features of a situation enabled officers to share understandings of their roles as a group and then bring a group understanding to subsequent missions. We did not see evidence of such explicit group learning among film crew

members, who had much less continuity of membership across productions and therefore had few opportunities to either develop or use understandings specific to a particular film production.

Building Cross-Member Expertise

Both the SWAT team and the film crews also had processes for building cross-member expertise—that is, for learning the task knowledge others used in their own work. By building familiarity with others' work, individuals could understand how the broader work process would proceed and how the group would achieve its objectives. In both settings, members built cross-member expertise through the daily work, but differences in the continuity of membership influenced how this was achieved. The SWAT team had devoted extensive time to training as a group; in the film crew, it was the responsibility of individual crew members to learn for themselves how to perform the work on the set.

To create cross-member expertise among officers, the SWAT team explicitly used cross-training. For example, during a training session Dan, the officer in charge, noted that all officers on the team "are supposed to know everybody else's job." In this session, the officers on the team practiced on the shooting range. For Brett, a junior officer, it was the first time using a marksman's rifle and scope. As Dan showed him how to hold the rifle and use the scope, Brett remarked how clear targets became. In a later interview, Brett described the importance of training sessions for him. Referencing his experience with the rifle and scope, he said "I had no clue that the scope was that good. I guess I sort of knew that it must be pretty good, but you can see the face on the penny [on the target]." He continued, "It totally makes sense how the snipers are on the roof even when they aren't going to shoot. They can see more than we can." Although Brett was not expected to become proficient at the marksmen's duties, the training session gave him a deeper understanding of the work of the marksmen and their role on the team.

In the SWAT team, the development of cross-member expertise took place in the context of the group. When individual officers attended specialized schools (such as those for less lethal weaponry, explosives, or chemicals and gases), the team took time at the next scheduled training session to describe what those officers had learned. For example, during one training session, an officer who had just returned from a school on nonlethal weaponry took over and described the multiple uses of "flashbang devices" to the team. Because the training sessions were the setting for cross-training, the team placed a high value on having all members present and occasionally rescheduled to ensure that every officer would attend. Officers commonly scheduled their holidays and vacations around the training schedule, which reflected the emphasis they placed on developing their expertise in the context of their ongoing group.

In the case of film crews, cross-member expertise was built through the career progression process whereby individuals typically advanced through working in multiple film projects. Beginners in the film industry invariably started their careers as production assistants who were not confined to a specialized area such as costumes, lighting, or sound. Rather, they worked on tasks that gave them access to different departments, and they became familiar with the specialized work of each as well as the interdependencies between departments. It was also common, especially early in their careers, for people to change roles and departments to explore the departments in which they had the most interest.

An example of this individual-based form of developing cross-functional expertise emerged when Jeff, the sound mixer on one production, described his experience with Sam. Jeff had hired Sam for an earlier project because he had been highly recommended by the director to be the boom (microphone) operator. However, on the drive to that location, Jeff found out that Sam had never operated a boom before. As Jeff exclaimed, "Can you believe it, his earlier job with this [director] had been in craft services!" (providing food and beverages). But the tale did not end there. In the current production, Sam was hired on as a grip. This meant that in a span of about six months Sam had worked in the craft service, sound, and grip departments on different projects.

Moreover, Sam's experience was typical of production assistants who, by asking to take on new and more complex tasks, learned about the roles and responsibilities of other crew members. On another film set, Debbie, a production assistant interested in becoming an electrician, made herself useful to the electric crew. In her words, "I bugged the genny operator: 'Is there anything I can do for you?' And I wrapped a cable, he thought it would take 45 minutes but I came right back. Then he asked if I could gel lights, I said yes, so I did that. That's how I got assigned to the electrics this week." Thus, although some film crew members had attended training programs such as film school, they most often acquired cross-member expertise by finding work on different film sets and

displaying individual initiative to work in different departments.

Collectively, the exposure of production assistants to the specialized roles of others while working and fulfilling different roles meant that they built an understanding of the task knowledge for those different roles, which they carried with them as they advanced in their careers. Building cross-member expertise in the SWAT team and the film crews was useful because it enhanced the shared task knowledge of the members. The way in which cross-member expertise was developed also helped create common work flow expectations, as SWAT and film crew members were able to see typical situations in which tasks and roles interacted.

Processes for drafting agreement on the work, reinforcing and elaborating task activities, and building cross-member expertise in both the SWAT team and the film crews enabled the development of shared task knowledge and common work flow expectations. Drafting agreement on the work, in the form of premission briefings for SWAT teams and scheduling and ad hoc meetings on film sets, helped create common work flow expectations about task progression and exposed members to the work of others. SWAT team members created shared task knowledge through rehearsals, corrections, and retrospective analysis, and on film sets continual correcting was the norm. The SWAT team's cross-training and the film crews' cross-project career progression facilitated common understanding of tasks and roles. Together, these processes created the sociocognitive resources needed for organizational bricolage as a response to surprises.

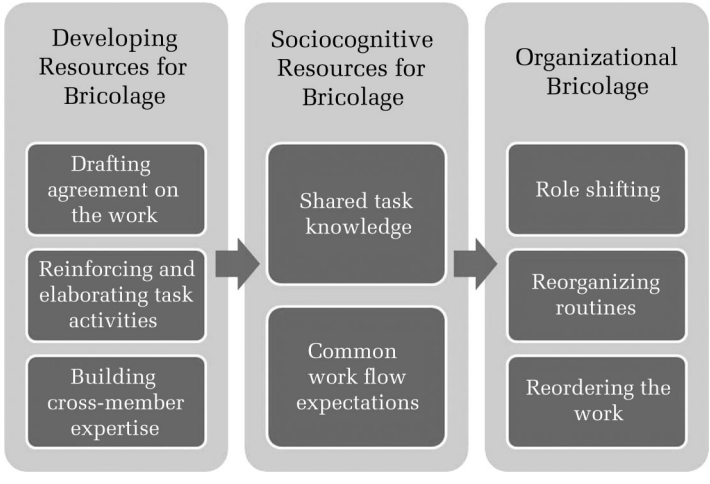
DISCUSSION

The SWAT team and the film crews faced frequent surprises, and organization members expected the unexpected. Although they anticipated challenges in the execution of their work, they could not know the characteristics of specific surprises ahead of time: the tasks of these groups were complex and interdependent, and time pressure constrained action. By showing how these organizations responded to surprises, we highlight practices of organizational bricolage: role shifting, reorganizing routines, and reordering the work. Daily activities in which organization members drafted agreement on their work, reinforced and elaborated task activities, and built cross-member expertise enabled bricolage. These processes continually recreated the sociocognitive resources—shared task knowledge and common work flow expectations—that members drew upon when facing unexpected events. We outline the relationship between these practices in Figure 1.

Responding to Surprise through Organizational Bricolage

Our investigation suggests that bricolage is a powerful response to the demands of unexpected situations. Although recognizing that the settings we studied are somewhat unusual, we believe our findings are generalizable to other organizations. The regularity of surprises in film crews and the SWAT team emphasized the constant need to make do to continue the work. Our suspicion is that making do in the face of unexpected events is com-

FIGURE 1
Developing and Using Sociocognitive Resources to Engage in Organizational Bricolage in Response to Surprises



mon in many organizations. Given time constraints and the need to keep working, drawing on shared sociocognitive resources to reorganize was a responsive approach for these groups, as it likely would be in other settings.

Our findings both further knowledge about what enables organizations to engage in bricolage in response to surprises and distinguish it from other processes. Although research on innovation often references collective bricolage as an endeavor in which different people participate, this research presents multiple definitions and interpretations (Baker, 2007). For instance, Garud and Karnoe (2003) described the bricolage of a broad technological community who together shaped improvements to wind turbines. This community comprised "multiple actors with different levels of involvement" (Garud & Karnoe, 2003: 280) who did not necessarily work for the same organization, on the same product, at the same time, or with the same goals. Similarly, in their examination of entrepreneurial activity, Baker and Nelson (2005) emphasized the social space in which bricolage takes place, arguing that a network of individuals and institutions that identify resources and constrain or enable particular activities facilitate it. For instance, customers facilitate this process through their willingness to accept the nonstandard, potentially unappealing products or services that result from bricolage. In both instances, bricolage occurred through the participation of many different people who could be working with different goals.

Although our examination of bricolage as a response to surprise also highlights its collective nature, we are able to pinpoint some processes and characteristics that are specific to bricolage within the boundaries of organizations. Organizational bricolage is rooted in the tight performance of a shared task guided by common goals. In the film crews and the SWAT team, individuals belonged to a group in which goals and intentions were cooperative, task interdependence was high, members had a common perspective on the situation at hand, and joint response to surprises was simultaneous. In organizations with such characteristics, sociocognitive resources are crucial for engaging in bricolage in response to surprise. However, these characteristics mark important differences from broader collective arrangements, such as the network forms of bricolage described by Garud and Karnoe (2003) and Baker and Nelson (2005). In an entrepreneurial network, for example, where people may not share goals, shared knowledge of tasks and common work flow expectations may be less central in crafting responses to surprise.

Another boundary condition of our findings is that by studying organizations that expected surprises, we discovered circumstances in which surprises were treated as less surprising. This discovery has implications for scholars' knowledge of how alertness to breaks in expectations shapes organizational action. The literature suggests that noticing breaks from expectations can lead to improvisation (Baker & Nelson, 2005; Miner et al., 2001) and that more severe breaks lead to learning and change (Tyre & Orlikowski, 1994; Zellmer-Bruhn, 2003). However, although the organizations in our study were alert to deviations in the sense that their members expected surprises to happen, we did not find that differences in the severity of surprises or in their other characteristics affected the way members perceived or responded to them.

In our initial analytic efforts, we assumed we would find that such features as the novelty, severity, and source of surprises would provoke different responses. However, we found upon pursuing these differences that we did not gain theoretical leverage, because distinctive variations in the ways that our informants responded to surprises were absent. For instance, the film crew reacted in the same way when the catered bagels at the craft service table were reported to be "crappy" and when a handgun was found in the "honeywagon" (the bathroom trailer), although to an outsider these might seem like surprises with quite different characteristics. In our data, responses to surprises always exhibited the same pattern of organizational bricolage, in which our informants made do with the resources at hand to continue on the task.

The result of expecting and preparing for surprise seemed to be the routinization of responses to surprises, in which features such as their severity, importance, and novelty were obscured or made irrelevant. This regularization has also been observed in newsrooms, where it is difficult to separate the ordinary from the exceptional (Tuchman, 1973). In other types of organizations, surprises or unexpected events may signal opportunities for broader reorganization and change. This may be particularly true for entrepreneurial organizations, which can abandon the original goals of their ventures, unlike SWAT teams and film crews. This contrast suggests that exploring the concept of surprise itself may require investigating organizations in which surprises are treated in a nonroutine manner. Such exploration would be appropriate to uncover how organization members classify, prioritize, and understand unexpected events before responding to them.

The Development of Shared Sociocognitive Resources for Organizational Bricolage

Identifying common work flow expectations and shared task knowledge as sociocognitive resources on which organizational bricolage relies is a central contribution of this work. Previous work on collective bricolage has focused substantial attention on resources such as people and materials (Baker & Nelson, 2005; Garud & Karnoe, 2003) but has not fully explicated sociocognitive resources. We find that the development and use of sociocognitive resources explain how bricolage enables responsiveness to surprise. Even when a single individual responds to an unexpected event, as when someone switches roles in a work situation, the action is embedded in a larger understanding of the task, one that incorporates detailed knowledge of the work of others as well as knowledge of how the collective task advances. Identifying these shared cognitions helps explain how organizations set the stage for organizational bricolage by creating common knowledge (Cannon-Bowers & Salas, 2001; Klimoski & Mohammed, 1994). We thus add to the expanding set of constructs that identify common knowledge of a situation as important for coordinating under new circumstances, such as shared role and cognitive systems (Klein et al., 2006; Majchrzak et al., 2007), mental models (Marks, Zaccaro, & Mathieu, 2000), procedural and declarative memory (Miner et al., 2001), and common understanding (Okhuysen & Bechky, 2009).

An important part of our contribution is focusing on how organizations develop these sociocognitive resources. By doing so, we address recent calls to shift attention to how expertise and knowledge evolve under changing conditions (Majchrzak et al., 2007) and to elaborate the antecedents to the development of team mental models (Mohammed, Ferzandi, & Hamilton, 2010). Drafting agreement on the work, reinforcing and elaborating task activities, and building cross-member expertise are all processes that create and buttress shared task knowledge and common work flow expectations. By explicating the processes that underlie shared forms of knowledge, we fill a need created by prior research on common knowledge that has identified what types of knowledge might be useful, but not how to develop such knowledge.

We find that the development of shared knowledge is rooted in the regular, day-to-day interactions that happen in organizations as members carry out the work. Specifying the three processes for developing shared task knowledge and common work flow expectations enables us to link this daily work activity with the practices of bricolage used to respond to surprises. For example, drafting agreement on the work happens publicly and with considerable input, which enables organization members to account for unexpected events or potential contingencies, even when the detailed characteristics of those unexpected events cannot be known a priori. All three of the processes we describe are examples of day-to-day collective activities within organizations that, in their normal execution, contribute to the sociocognitive resources that enable responsiveness to surprise. Our comparison of two settings in which workers regularly face surprises also allows us to explore how the preparation of responses to surprise is embedded in the structural context of the everyday work of these organizations.

The Structural Context Shaping Organizational Bricolage and Sociocognitive Resources

By comparing our settings, we show how the structural context of the work carried out in them shapes organizational bricolage and the development of sociocognitive resources. As Strauss suggested, a focus on structural context ensures that one's understanding of action "will be carefully located within the larger social structure" (1978: 101). Comparing the structural contexts of our settings helps explain how the interplay of structures and processes of organizations make them ready for responding to surprise, albeit in distinct ways.

The differences between the settings in terms of the temporal flow of the tasks, continuity of membership, and consequences of events framed the ways in which organization members took action to respond to surprise and built the resources necessary to do so. For instance, when faced with surprises in the work, both organizations exhibited role shifting as a form of bricolage, but the SWAT team also reorganized their routines, while the film crews were more likely to reorder the work. Thus, although members in both settings engaged in organizational bricolage using sociocognitive resources they developed, their actions were shaped by the structural context of the work.

Significant time pressure and severe danger shaped the SWAT team's work on missions, given the potential for negative consequences if they did not act quickly in response to surprise. The temporal flow of the work and the severe consequences made it likely that they would choose forms of bricolage that could be enacted in a moment, without much discussion. They would not have been prepared to take such action, however, if they had not had shared group routines to draw on. Thus, the development of sociocognitive resources in this

setting was more focused on group learning during training and retrospective analysis of missions, which was enabled by the structural context created through the continuity of membership on the team.

In contrast, on film sets the temporal flow of the work allowed for breaks to reorganize, and the consequences of surprises were less dire, centering primarily on equipment and personnel costs. This structural context also shaped organizational bricolage in response to surprises: organization members discussed how to use the people and equipment at hand, taking time to reorder the work given their material constraints. The structural context of the film industry also provided little continuity of membership across projects. Thus, instead of developing shared task knowledge and work flow expectations through specific training sessions, film crew members learned on the job, constantly reinforcing expectations so that they could accomplish work quickly. This explicit feedback from the constant reinforcement of expectations helped to create the sociocognitive resources that enabled quick discussion, role shifting, and reordering the work in response to surprise.

What these comparisons demonstrate is that the structural context of organizations influences both the forms of organizational bricolage practiced and the ways sociocognitive resources are developed. For example, in an organization that has extreme pressures on execution such as time and danger, developing and practicing routines is both a good way to create shared expectations and a quick way to respond to surprises. By developing a shared understanding of when and how to enact routines, a SWAT team prepares for some expected disruptions and is thereby prepared for the unexpected.

Developing routines is but one way to respond to surprise that worked in this particular structural context. Other organizations, such as aircraft carriers (Weick & Roberts, 1993), provide contexts that are similar to SWAT teams, where time pressure is present and dangers abound. There is considerable evidence that members of these organizations also respond to surprises through emergent interaction that relies on shared cognition (Weick & Roberts, 1993), but we do not know how shared cognitions develop in these situations. Given the similar structural context, we would expect to see the development of common knowledge aiding the deployment of routines among these crew members. However, additional aspects of the structural context might result in different processes for developing responses to surprise on aircraft carriers. This suggests a need for future comparative research to determine which differences have the most impact on responsiveness to surprise.

Conclusion

The SWAT team and the film crews prepared for the unexpected through the actions and interactions of organization members' daily work lives. Because the processes creating sociocognitive resources are rooted in the interplay of organizational and team structures and ongoing actions, our description of these processes offers a nuanced picture of organizations and organizing. Exploring the relationship between the practices people use to prepare and respond to surprise and the structural context in which they experience them demonstrates the dynamism of organizing in situations in which plans meld with responses, expectations encounter realities, and structures overlap actions. Such dynamism encourages researchers to move beyond dualism in our conceptualizations of organizations. Developing and adopting a conceptual vocabulary that merges and complicates dichotomies more accurately reflects organizational life and can enliven future theoretical debates about organizations.

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