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# EMERGING INTENTIONALITY IN ROUTINE DYNAMICS: A PRAGMATIST VIEW

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**This paper responds to recent interest in the role of intentionality in the internal dynamics of routines. Previous research has focused on how routine participants bring particular intentions to the performance of a routine and choose the means for accomplishing the pre-defined ends accordingly. Drawing on the pragmatist theory of action and a yearlong ethnographic study of a pharmaceutical company, we uncover "emerging intentionality" in routine performances. We show how the foregrounding of means within the concrete situation at hand might lead to the emergence of new ends to pursue. Moreover, we find that the emergence of new ends in routine performances might result in updating the goals for the routine and its associated patterns. With these findings, we contribute to a better understanding of the full spectrum of intentional action in routine dynamics, ranging from purposeful action (foregrounding ends) to purposive action (foregrounding means). This expanded perspective on intentionality in routine dynamics suggests a greater potential for continuous routine change than previous research has acknowledged.**

Research on routine dynamics (Feldman & Pentland, 2003) has been sparked by an interest in how "actions [in performing routines] are motivated by will and intention" (Feldman, 2000: 613). Traditionally, routines, defined as "repetitive, recognizable patterns of interdependent action" (Feldman & Pentland, 2003: 95), have been associated with mindlessness and automatic behavior (March & Simon, 1958). Recent research, however, has revealed how routine participants "may use routine performances to strategically advance both personal and organizational goals" (Howard-Grenville, 2005: 619). A central focus of these studies has been to identify how actors' intentions and their orientation toward organizational goals can result both in routine stability and in flexibility and change of routines over time. One implicit, taken-for-granted assumption of these studies is that routine participants pursue certain ends that they bring to the performance of the routine and choose the means for accomplishing these ends accordingly. For example, studies have shown how actors create new means to pursue particular ends (Cacciatori, 2012), choose different means when encountering problems in achieving their ends (Rerup & Feldman, 2011), and use existing means differently when they pursue new ends (D'Adderio, 2014).

Although this focus on actors' ends has resulted in important new insights, research in this field seems unnecessarily held back by this taken-for-granted and somewhat antiquated assumption of intentionality (Joas, 1996). In particular, empirical evidence indicates that the relationship between means and ends is far more complex than routine studies typically portray. Howard-Grenville (2005: 629), for example, hinted at this complexity when she noted that artifacts might "inform" actors' ends; similarly, D'Adderio (2014: 23) stated that ends "may evolve as actors become engaged in performances involving new or modified artifacts and communities [representing different means]." This evidence suggests that, to advance our understanding of routine dynamics, we need a more nuanced understanding of the interplay between means and ends, which would allow us

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to capture the "[full] spectrum of intentionality" (Feldman, 2016: 32) in routine dynamics. By devoting more attention to the other part of the means–ends relationship—that is, by focusing on how means might influence actors' ends—we can obtain a better understanding of the sources of intentionality, and therefore reveal hitherto unacknowledged and neglected sources of novelty and change in routine dynamics.

In this paper, we examine the performance of routines at a start-up company in the pharmaceutical sector. What struck us as particularly interesting was that some of the flexible performances and changes that we observed during our one-year ethnographic study occurred as routine participants started to explore new means in their enactment of the routines, leading them to pursue new ends that were unrelated to any previous ends. These performances seemed inconsistent with the typical portrayal of actors in the routines literature as pursuing "predefined, unchanging ends" (Danner-Schröder & Geiger, 2016: 12) for which they choose the appropriate means. We use these observations to answer the following question: *How does the enactment of means influence actors' ends, and how does this influence contribute to routine change?* To analyze our data, we drew on the pragmatist perspective on intentionality (Dewey, 1957; Joas, 1996), which emphasizes that "action [should] not be perceived as the pursuit of pre-established ends, abstracted from concrete situations, but rather that ends and means develop coterminously within contexts that are themselves ever changing" (Emirbayer & Mische, 1998: 967). Adopting this perspective, we distinguish analytically between the "ends-in-view" that actors pursue *in a specific routine performance* and the *goals* that the routine is generally expected to achieve.

Our analysis of the enactment of means and ends in multiple routine performances yields several key insights. First, we find that the flexible performances that surprised us resulted from actors foregrounding means, leading them to conceive of new ends-in-view in a specific performance, which were often unrelated to either the goals for the routine or any pre-existing personal interests. Second, in relating these new actions to the routine's enacted patterns, participants often gained a different understanding of what the routine ought to accomplish—that is, they updated the goals for the routine and its associated patterns. Third, our data reveal that these actions changed the unfolding situation for subsequent actions, thereby leading actors to continue foregrounding means and updating the goals for the routine. These progressive means–ends cycles resulted in continuous routine change over time. Finally, we observed how progressive means–ends cycles occasionally also extended across the performances of several routines, driving routine change across multiple routines.

These insights contribute to the theory of routine dynamics by developing a deeper and more nuanced understanding of intentionality in routine performances, including both ends-in-view and goals and their interplay. In contrast to existing routine studies that tend to focus on purposeful action guided by predefined goals (e.g., Deken, Carlile, Berends, & Lauche, 2016; Feldman, 2000; Howard-Grenville, 2005), our study explores the other end of the spectrum of intentionality—that is, intentional action in which the end-in-view emerges from engagement of particular means. We uncover foregrounding means as the mechanism that underlies this form of intentional action, and we explicate the conditions under which we are likely to encounter it. Recognizing the full spectrum of intentional action in routine dynamics allows us to revise two key taken-for-granted assumptions about intentionality. First, whereas existing routine studies often attribute intentionality to the individual—for example, in the form of "personal motives" (Howard-Grenville, 2005: 628)—our study highlights how intentionality is *constituted through* action rather than being *brought into* the action by the actor. Second, this view allows us to appreciate intentionality not as something "of the mind" (Chia & Holt, 2006: 648), but as something that is *dynamically enacted* in routine performances. Consequently, routine participants can develop a sense of purpose from action *without* consciously reflecting on action. Overall, this perspective on intentionality suggests that intentions can be more provisional, dynamic, and flexible than the literature typically portrays. It also suggests a greater potential for continuous routine change than previous research has acknowledged.

## THEORETICAL BACKGROUND

### The Role of Intentionality in Routine Dynamics

Organizational routines constitute a core element of organizational research because they are fundamental for accomplishing work and achieving organizational goals (Cohen et al., 1996; Parmigiani

& Howard-Grenville, 2011). Initially conceptualized as performance programs or standard operating procedures and likened to computer programs, habits, or genes, routines have traditionally been associated with stability and predictability (Cyert & March, 1963; March & Simon, 1958; Nelson & Winter, 1982). Accordingly, much research has focused on the design of routines because their actual performance has been assumed to consist merely of automatic behaviors involving little—if any—agency (Ashforth & Fried, 1988; Cyert & March, 1963).

Based on in-depth ethnographic observations and informed by practice theory (Feldman & Orlikowski, 2011), more recent research has challenged this somewhat naïve view of routines and highlighted the particular role of agency in producing repetitive, recognizable patterns (Feldman & Pentland, 2003). Far from being mindless, routines have been shown to be "effortful" (Pentland & Rueter, 1994: 488) and "emergent accomplishments" (Feldman, 2000: 613). These findings have led to an appreciation of the inherent dynamics of routines resulting from the interplay between *performative actions* (i.e., specific actions taken by specific people in the enactment of a routine) and the *ostensive patterns* that are created through these actions (i.e., experienced regularities across multiple performances) (Feldman & Pentland, 2003; Howard-Grenville, Rerup, Langley & Tsoukas, 2016; Danner-Schröder & Geiger, 2016). In other words, as participants take action to accomplish a routine, they simultaneously engage in both *performing* and *patterning* (D'Adderio, 2014; Feldman, 2016).

This performative view of routines has highlighted intentions—that is, the pursuit of a particular purpose—as a key aspect of agency that can explain both stability and change in routines over time (Feldman, 2000; Howard-Grenville, 2005). Intentionality is generally defined as the pursuit of particular "ends" (i.e., desired outcomes of the action) through the employment of available "means" (i.e., anything material or immaterial that is instrumentally used in an attempt to achieve these outcomes) (Whitford, 2002). Accordingly, variations in the enactment of routines and the resulting changes in ostensive patterns can be traced back to variations in ends and/or means in specific performances.

Many studies observe how actors pursue new ends and consequently perform a routine differently. For example, in her seminal paper on routine dynamics, Feldman (2000) showed how building directors responsible for student housing performed a damage assessment routine differently when they began to pursue specific learning objectives for their students and developed a new room inventory that they discussed with the students. In her study of the roadmapping routine, Howard-Grenville (2005: 627) highlighted that individuals often performed the routine differently because they "consider[ed] different ends to be important as they enact[ed] portions of the routine" and "tailor[ed]" the existing artifacts accordingly. Deken and her colleagues (2016: 667) showed how actors changed a product development routine to "accommodate novel intended outcomes." Similarly, in a study of a new safety routine in a molecular biology laboratory, Bruns (2009: 1401) demonstrated how differences in the "concerns of individual actors" (i.e., differences in their ends) led them to perform the routine differently. Instead of aiming to prevent health hazards that could result from exposure to hazardous substances, the biologists performed the safety routine with the aim of protecting their research material from contamination.

Several studies have also shown that participants perform routines differently as they enact different means, even when the ends remain the same. Such a situation occurs when routine participants engage in "problem solving" (Rerup & Feldman, 2011) or attempt to "repair" a routine (Feldman, 2000). For example, in their study of the recruiting routine at Learning Lab Denmark, Rerup and Feldman (2011) showed how participants experimented with new means when the existing ends could no longer be achieved with the existing means. Specifically, actors experimented with new types of contracts when the conventional contracts no longer allowed them to achieve their end of recruiting particular types of employees. Similarly, in her study of a bidding routine in an engineering design company, Cacciatori (2012: 1578) demonstrated how routine participants "inventively modif[ied] resources," such as their handbooks and procedures, when routine performances did not meet the expected ends.

By closely examining all these examples from the routines literature, we find that the ends or goals pursued in routine performances orient the actor toward particular means. When actors either change their ends or encounter problems in pursuing them, they explore new means to accomplish these ends. However, some authors have suggested that the relationship between means and ends is not unidirectional. For example, Feldman (2000: 620) highlighted that "new resources ... enable new opportunities," implying that engaging new

resources can result in the establishment of new ends. Similarly, Howard-Grenville (2005: 629) acknowledged that artifacts "inform" an actor's ends, and D'Adderio (2014: 23) noted that "[goals and preferences] may evolve as actors become engaged in performances involving new or modified artifacts and communities." Thus, the interplay between means and ends in routine performance might be more complex and more dynamic than previous research has explicitly acknowledged. To advance our understanding of how intentionality influences routine dynamics, we introduce the pragmatist perspective, which offers a very sophisticated conceptual vocabulary for an examination of the roles of means and ends in action.

## The Pragmatist Perspective on Intentionality

Although the pragmatist perspective has already been prominently used in routines research (e.g., Cohen, 2007; Dionysiou & Tsoukas, 2013; Feldman & Pentland, 2003; Howard-Grenville, 2005; Simpson & Lorino, 2016), the concept of intentionality within this perspective, and the relationship between means and ends in particular, has received very little attention. The starting point of pragmatists' discussion of intentionality is their rejection of the notion of ends as being external to situated action. They argue that we must distinguish the concrete ends that actors pursue *in* their action from the results of these actions and from any goals established before or outside the action. To highlight this distinction, Dewey (1957) referred to the ends of actions as the "ends-in-view"—that is, the ends that actors have in view when they perform their actions. These ends-in-view are constitutive of action because they serve as "directive stimuli to present choice" (Dewey, 1957: 211). With this conceptual distinction, pragmatists emphasize that externally determined goals are qualitatively different from the ends-in-view of situated action. Externally determined goals can still influence ends-in-view, but they by no means determine them.

In applying this perspective to our area of interest—routines—we must clearly distinguish between the ends-in-view that actors pursue *in* enacting a routine from any pre-existing goals that they have before taking action and the achievement of these goals through their actions (i.e., the outcome of the action). By closely examining the above examples, we find that this distinction is not always clearly stated. Some studies focus on how actions within routines contribute to the achievement of broader organizational or professional goals. D'Adderio (2014), for example, was primarily interested in how the performance of routines fulfills the competing broader organizational goals of replication versus innovation, but she has said little about the specific ends-in-view of individual actors in particular performances. Similarly, Bruns (2009) examined how the broader professional goal of preventing the contamination of experiments is enacted through a safety routine. However, we again learn little about the concrete ends-in-view of individual actions. Studies that explicitly discuss actors' intentions in enacting a routine are typically more directly concerned with ends-in-view. Such a focus is most explicit in a study by Howard-Grenville (2005), which described the specific ends that different actors pursue in enacting portions of the roadmapping routine and showed how these ends might also deviate from the goals that are generally associated with that routine. For example, she delineated one performance of the routine in which the participants pursued the explicit end-in-view to establish their expertise and legitimate their activities, although the routine itself was generally associated with the goal of reducing uncertainty in planning. Other studies have considered how actors' ends-in-view are more closely aligned with the goals for a routine. For example, Rerup and Feldman (2011) described how participants involved in a recruiting routine engaged in trial-and-error problem solving when their actions did not accomplish the goal for the routine to recruit particular types of employees. Considering these findings together, we can distinguish between the *ends-in-view in performing* a routine (i.e., the specific ends that participants pursue in their concrete actions) and the *goals involved in patterning* (i.e., the goals associated with the enacted patterns constituting the routine; for simplicity, we refer to these as the goals for the routine).

In addition to their emphasis on ends as part of action, pragmatists note that ends-in-view cannot be conceptualized independently of their associated means. They argue that means and ends are mutually constitutive and develop coterminously (Emirbayer & Mische, 1998: 967). As Dewey (1939) stressed, "It is simply impossible to have an end-in-view ... save upon the basis of some, however slight, consideration of the means by which it can be brought into existence." Analogously, without ends, we cannot speak of means. Means are only means when they are employed to achieve an end. In other words, "no material—air, water, metal, wood, etc.—is [a] means save as it is employed in some human activity to accomplish something [i.e., an end-in-view]"

(Dewey, 1939: 50). In this sense, the means employed and the ends pursued in situated action exist in a relationship of "deep and subtle interdependence" (Cohen, 2007: 776). Without consideration of (at least potential) means, an end would merely be "an idle fantasy, a futile wish" (Dewey, 1939: 35). Thus, actors always choose ends in light of the means that are available to achieve these ends (Visalberghi, 1953).

In line with this understanding, pragmatists dispense with the dualistic notion of means and ends (Farjoun, Ansell, & Boin, 2015), according to which actors have particular ends in mind and then choose the appropriate means. Instead of adopting this conventional concept of "rational action" (Feldman, 2016; Joas, 1996), pragmatists argue that actors choose means and ends together when acting, or, rather, they "choose means-to-ends" relationships (Whitford, 2002: 343). Importantly, pragmatists highlight that choosing particular means not only contributes to the specification of ends-in-view but also might engender *new ends-in-view*. As Joas (1996: 154) explained, "Only when we recognize that certain means are available to us do we discover [ends] which had not occurred to us before. Thus, means do not only specify [ends], but they also expand the scope for the [specification of possible ends]." For example, if a person were to find a nice sheet of paper (means), they might think of sending a letter to a friend (end-in-view), an act that had not occurred to them previously.

Pragmatists emphasize that, to understand why actors enact particular means–ends relationships in their actions, we must also consider the specific situation in which the action occurs. Every action is shaped by the situation because the situation defines the possibilities for the action (Farjoun et al., 2015). Conventionally, the situation is conceptualized as an independently given context in which an action is performed. In contrast, the pragmatists conceptualize the situation as an integral element of the action. As Joas (1996: 160; emphasis in original) noted, "It is not sufficient to consider human action as *contingent* on the situation, but that it should also be recognized that the situation is *constitutive* of action." Therefore, the situation and the action stand in a "quasi-dialogical" (Joas, 1996: 160) relationship. In taking action, the actor is involved "in ongoing dialogue with unfolding situations" (Emirbayer & Mische, 1998: 966). The actor understands the situation in relation to his or her actions; simultaneously, this understanding of the situation leads the actor to take particular actions (MacLean, MacIntosh, & Seidl, 2015). Highlighting that this relationship is not purely cognitive, Farjoun and his colleagues (2015: 6) described it as one of "enactment": people probe their situational contexts through their actions and interpret and negotiate the reaction of the situational context to these actions.

In this ongoing dialogue between situation and action, enacting means–ends relationships helps actors cope with the contingency of the situation—that is, the possibility of myriad courses of action in every situation (Joas, 1996). Particularly when faced with unfamiliar and unsettled situations (Simpson & Lorino, 2016; Waks, 1999), actors begin to probe their situations by exploring different means–ends relationships. As Whitford and Zirpoli (2014: 1832) highlighted, "actors survey themselves and their situations for resources as they make projections of possible consequences they may obtain." This approach is in line with Suchman (1987: 3), who argued that "actors use the resources that a particular occasion [i.e., situation] provides ... to construct their action's developing purpose [i.e., end-in-view]." Thus, actors tentatively enact particular means-to-ends relationships depending on how they understand the situation, which in turn shapes their perceptions of that situation.

This emphasis on the situation resonates with the recent literature on routines, which highlights that "action in routines is situated" (Feldman et al., 2016: 506). Howard-Grenville (2005: 629) in particular discussed how the "situation at hand presents opportunities for the pursuit of multiple and varied ends." Similarly, D'Adderio (2014: 1) highlighted how the "material and social features of [the situational] context" orient routine participants' actions, but acknowledged that these features themselves result from actors' interpretations and negotiations.

Overall, the pragmatist view of intentionality provides us with a useful conceptual vocabulary to study the enactment of means and ends in routine performances. In particular, it sensitizes us to the difference between the *ends-in-view* that actors pursue in a specific performance and the general *goals for the routine* (i.e., the goals associated with enacted patterns). It highlights that *ends-in-view and means are mutually constitutive*, and that they shape and are shaped by the *unfolding situation* (i.e., the immediate and historical circumstances of the action).

## METHODS

### Research Setting

This paper is based on a one-year ethnographic study at a pharmaceutical company, CellCo (alias;

all names are pseudonyms, and quotes are translated). The company was founded in 2009 as a university spin-off producing off-the-shelf and customer-specific cell tissues and proprietary rectangular plates for growing and analyzing cell tissues. In their operations, CellCo's managers were concerned about both the quality of their products and the efficiency of their processes because they were aiming to provide pharmaceutical companies with solutions that would be suitable for mass production and automation. At the beginning of our study in February 2011, CellCo had 18 employees; its management team consisted of the three founders and a quality manager. Initially, we were broadly interested in the sources of flexible routine performances and routine change over time. For our study, CellCo thus provided the ideal context. On the one hand, the entrepreneurial setting required organizational members to enact routines flexibly and adapt them over time. On the other hand, consistency and reliability were a key success factor for CellCo's survival in the pharmaceutical industry (see also Anand, Gray, & Siemsen, 2012), thus calling for repetition and recognizability in the performances of routines.[1]

After several weeks of becoming familiarized with the company, we opted to focus on routines in the area of production and operations, which CellCo's employees recognized as particularly important for their work. In particular, we closely observed and documented as many performances as possible of the following six routines: (1) assembling plates, (2) producing cell tissues, (3) warehousing, (4) shipping, (5) managing projects, and (6) performing quality management. To capture also the wider organizational context in which the firm's routines were embedded, we observed other activities, such as management and sales meetings, as well.

[1] As is common for extended fieldwork with exposure to a variety of events, settings, people, and artifacts (Barley, 1984, 1986; van Maanen, 1973, 1975; Yanow, 1987, 1993, 1996), our study allowed us to explore the phenomenon of routine stability and change from multiple angles. Our first insights about the role of reflective talk in routine change were published in Dittrich, Guérard, and Seidl (2016). In turn, this paper focuses on a different aspect of routine dynamics: the interplay between means and ends. The current manuscript differs from the earlier paper in three important aspects: (1) it focuses on a new research question (i.e., how the enactment of means influences actors' ends), (2) it employs a new theoretical perspective (i.e., the pragmatist view), and (3) it uses additional data from another routine.

### Data Collection

The main fieldwork lasted from February 2011 to February 2012 and consisted of nonparticipant observation, audio recordings, interviews, and document collection. The first author spent two to three full days per week at CellCo and observed the employees' daily interactions, participated in social activities, and accompanied employees to meetings with suppliers and customers. Her presence at CellCo was quickly accepted; employees were open to her questions and readily provided her with detailed information. The author recorded her observations as field notes in a notebook, transferred them into electronic documents, and extended them with further annotations within 24 hours (Emerson, Fretz, & Shaw, 1995). She also recorded formal and informal meetings whenever possible; these audio recordings were transcribed with the help of several external assistants.

In addition, the field researcher combined her observations with semi-structured interviews, frequent informal discussions (Spradley, 1979), and the collection of documents related to the focal routines. Over the course of the study, she conducted 30 semi-structured interviews, which ranged in duration from 30 minutes to 2.5 hours each. Numerous documents, such as checklists related to the assembling of plates and production of cell tissues, electronic warehousing and shipping files, and documents related to project management and quality management, were collected. Overall, we assembled nearly 1,000 pages of field notes, 3,000 pages of transcripts (reflecting 150 hours of meetings, interviews, and conversations), and approximately 8,000 internal documents.

### Data Analysis

We followed an iterative approach to analyzing the data, moving back and forth between our empirical material and the literature. During this process, the first author provided an in-depth understanding of situated actions from conducting the field study, whereas the second author acted as "devil's advocate" by asking critical questions and offering alternative explanations (Nemeth, Brown, & Rogers, 2001). Our data analysis began with the assembling-of-plates routine (hereafter, "assembling routine") and the shipping routine, as these patterns of action were particularly salient in our observations—we observed more than 80 performances of the assembling routine and more than 100 repetitions of the

shipping routine over the course of our yearlong study. The performances and enacted patterns constituting the routines at the beginning of our study were rather simple because they involved a limited set of actions and participants. This simplicity facilitated our data analysis by allowing us to trace in detail how variations in the performances and changes in the enacted patterns unfolded over time. Moreover, their simplicity allowed us to include other routines and activities in our analysis, as those routines and activities either influenced or were influenced by performances of the assembling and shipping routines. For example, we traced changes in the shipping routine to performances of the newsletter and sales routines. Table 1 provides a description of these routines.

We conducted our data analysis in four stages. First, we constructed a detailed timeline of events for both focal routines, identified the enacted patterns at the beginning of our observations, and noted when the participants enacted the routine flexibly and when they experienced a change in the enacted patterns. Our aim at this initial stage was to inductively derive the factors that influenced flexible

**TABLE 1**
**Description of the Four Routines**

| Routine | Description of Enacted Patterns at the Beginning of Our Observations |
|---|---|
| Assembling of plates | The assembling of plates refers to the process of putting the plates together from separate components (i.e., the frame, the strips, a lid, and a tray). At the beginning of our observations, the participants experienced two distinct patterns in enacting the routine:<br>(1) *One pattern was aimed at ensuring quality, efficiency, and ad hoc production.* When the stock of plates was low (approximately once every two months), the head of research and development, Taylor, arranged a time to assemble a large number of plates with all available lab employees as soon as possible. The lab employees washed the frames with ethanol and dried them; performed quality checks on all the parts; assembled the plates on a specific workbench to prevent particles from entering the plate; and placed the plates in a bag and sealed the bag. The plates were then sent for sterilization.<br>(2) *The other pattern was aimed at improving the quality of the plates through experiments.* Approximately every two weeks, Taylor asked a student assistant, Lilly, to assemble a small number of plates for experimental purposes, such as testing different radiation dosages. Lilly assembled the plates according to Taylor's instructions, and Taylor then sent the plates for sterilization. |
| Shipping | The shipping of products refers to the process of preparing CellCo's products for shipment and arranging delivery through a shipping provider. At the beginning of our observations, the routine participants enacted two distinct patterns of action—shipping plates and shipping cell tissues—as follows:<br>(1) *The shipping of plates was aimed at finalizing the shipment as soon as possible to ensure a speedy delivery.* This pattern involved initiating the shipment as soon as the order arrived, placing the ordered content into a box, arranging the shipment with the shipping provider online, preparing the shipping documents and attaching them to the box, and handing over the shipment to the shipping provider.<br>(2) *The shipping of cell tissues was more complex because of the biological nature of the product and was primarily aimed at ensuring safe delivery.* This pattern involved preparing the cell tissues with the shipping medium and a breathable membrane in the lab, placing the cell tissues together with dry ice in a box, arranging the shipment with the shipping provider online, preparing the shipping documents for biological products and attaching them to the box, and handing over the shipment to the shipping provider. |
| Newsletter | The newsletter routine was a subroutine of the marketing routine and entailed preparing and disseminating the newsletter on a monthly to bimonthly basis. At the beginning of our observations, the *routine participants enacted the routine in a way that was aimed at attracting customer attention and at updating potential and existing customers about CellCo's products and activities.* The pattern involved determining a suitable date for the next newsletter, brainstorming recurring and new topics of likely interest to customers, writing engaging content, designing the newsletter, distributing it by email, and updating the distribution list. |
| Sales | The sales routine refers to the process of establishing contact with potential customers, convincing them of the advantages of CellCo's offering and closing a contract. In addition to the two sales agents and the head of sales, the routine involved selected scientists. At the beginning of our observations, the *participants enacted the routine in a way that was aimed at promoting CellCo's products and services and making a profit.* The routine involved contacting customers through the sales agents' existing networks, visiting the customer on-site, making an offer with a price quote, working on leads, and completing the contract. It also involved regularly reviewing the product list with prices, promoting CellCo's products and services at conferences and workshops, and doing small promotion campaigns. |

performances and routine change over time. We analyzed the enacted patterns constituting the assembling routine and the shipping routine by taking an insider perspective—that is, we considered the patterns experienced by the participants in enacting these routines (see Table 1). To do so, we used the accounts of organizational members when they explained to the field researcher how they typically performed the routines, the documents they produced to describe the routines, and instances in which actors noted how certain actions deviated from the manner in which they typically performed the routines. In particular, we noted what steps organizational members included in their descriptions and how they described "what the actions add[ed] up to" (Feldman, 2015: 321).

Next, we assessed when the participants flexibly performed the routines to continue the patterns that they had enacted in the past (effortful accomplishment) and when the enacted patterns changed (emergent accomplishment). For example, in one of the performances of the assembling routine, the participants ran out of trays (a part of the plate), which led them to enact the routine flexibly; they immediately ordered new trays and meanwhile assembled the plates without the trays. When the trays arrived a few days later, they reopened the bags, inserted the trays, and resealed the bags. Hence, they took additional actions to reproduce the established pattern aimed at ensuring the ad hoc production of plates (see Table 1). In contrast, in a series of performances of the shipping routine, the participants enacted a change in the routine's pattern when they started to use new custom-made boxes with CellCo's logo for shipping their plates. Whereas shipping plates was previously primarily aimed at ensuring a speedy delivery (see Table 1), the actions then took on an additional meaning of appearing professional to CellCo's customers.

Considering all the performances of the assembling and the shipping routine that we observed, we noticed that in some performances the routine participants started to pursue different ends because they engaged particular means in their actions. Intrigued by this relationship between means and ends, which seemed somewhat at odds with the existing literature on routine dynamics, we explored various theoretical lenses to make sense of our observations. As a result, we identified the pragmatist view on action (Dewey, 1957; Joas, 1996) as a particularly fruitful perspective from which to analyze the means–ends relationships that we observed in our data.

In the second stage, we performed a more detailed analysis of the relationship between means and ends in the flexible performances and routine changes that we observed in the assembling and shipping routines. For this purpose, we distinguished the *ends-in-view* in a specific performance (i.e., in *performing* the routine) from the more *general goals associated with enacted patterns* (i.e., in *patterning* routine performances). Ends-in-view and goals thus differ in terms of how they are experienced—that is, either as the purpose specific to a particular performance or as a purpose that is associated with the pattern of the routine in general and experienced across multiple performances. To identify the goals associated with the enacted patterns, we identified actors' expectations about what should be achieved in enacting these patterns and their understanding of when the goal is achieved satisfactorily. For example, the goal associated with shipping plates was a speedy delivery. The routine participants clearly articulated this goal when it was not achieved by several performances of the routine (e.g., when there were delays in shipping plates to the customer).

In contrast, we inferred the ends-in-view of specific actions from how the routine participants explained and justified their actions in the context of a specific performance, or from how the field researcher, having been embedded in the company over a long period of time, understood the specific action in that specific instance. The ends-in-view in performing a routine might be aligned with the goals for the routine, but they might also differ. For example, on one occasion, the CEO, Chris, returned from a conference with 30 orders for free samples to be sent to the USA. As he pondered different possibilities for combining the shipments, the quality manager, John, offered to take the shipments with him on his vacation to the United States in two weeks. The field researcher immediately understood that this offer was aimed at saving shipping costs, because shipping each order individually would have incurred significant costs. Although the end-in-view of saving shipping costs did not contribute to the routine's goal of a speedy delivery, the routine participants considered saving costs appropriate in the context of this particular performance.

Together with the ends-in-view, we identified the means that actors instrumentally employed to achieve the desired outcome. Although we recognize that, in practice, means and ends-in-view are mutually constitutive, the analytical distinction enabled us to obtain a clearer understanding of the dynamics that evolved through their interplay. Means include a variety of assets, ranging from material objects to immaterial assets (such as relationships among actors or properties of these relationships) to a

combination of various socio-material elements. In the previous example, the routine participants drew on John's trip to the United States as a means of saving shipping costs. The means thus involved, among other elements, the suitcase to carry the shipments, John's willingness to take the shipments, and the trip that John had booked to Florida.

We also devoted particular attention to how the routine participants experienced the *unfolding situation* in which they enacted the means–ends relationships. When the participants raised questions about what to do next in view of multiple possibilities for action or in the face of new problems, we identified this questioning as an experience of unfamiliarity. In some of these instances, participants oriented toward existing goals to resolve the situation; in others, existing goals seemed less applicable, and actors probed different means–ends relationships of various action possibilities. In the previous example, Chris and John clearly experienced the situation as unfamiliar because they had never received so many orders for free samples simultaneously. They discussed various possibilities of shipping the plates, such as using a regular or a low-cost shipping provider. The unfolding situation was characterized by the immediate circumstances of John's trip to the USA and the general understanding that CellCo had limited financial resources and that free samples did not require as speedy a delivery as regular plate shipments.

In the third stage, we traced how the enactment of means–ends relationships and the experienced situation unfolded over time and how these dynamics contributed to the observed flexible performances and changes in the enacted patterns constituting the two focal routines. At this stage, we noted several instances in which the enactment of new means and the pursuit of new ends-in-view influenced the unfolding situation and subsequent actions, and examined how these dynamics extended beyond the assembling and shipping routine to other routines. We then tracked the means–ends dynamics in selected performances of these routines, including the newsletter and the sales routine.

In the final stage of our analysis, we abstracted from our observations to develop a theoretical model of how the enactment of means influences actors' ends and how this influence contributes to routine change (see Figure 1 at the end of the next section).

## FOREGROUNDING MEANS AND EMERGING ENDS-IN-VIEW AT CELLCO

To provide detailed insights into the means–ends dynamics that we observed in the routine performances of CellCo, we present our findings as two thickly descriptive narratives. We selected these narratives from our observations because they illustrate the insights that we gained from the CellCo case particularly well and are representative of our observations. What caught our interest in these narratives is that some of the flexible performances and the resulting changes to the routines neither occurred as a response to problems nor were related to any previous goals associated with performing the routines; rather, they emerged as the routine participants started to draw on new means in enacting the routines. Narrative 1 traces how foregrounding new means led the routine participants to conceive of new ends-in-view in the assembling routine and how engaging in patterning the new actions led to updating the goals for the routine. Narrative 2 focuses on similar means–ends dynamics but depicts how those dynamics evolved across the performances of several different routines (i.e., the newsletter, sales, and shipping routines). Each narrative is followed by an analysis in which we delineate several key insights.

### Narrative 1: Tracing Means–Ends Dynamics in Performing the Assembling Routine

The assembling of plates constituted a key activity at CellCo because these plates—rectangular objects consisting of several components—formed the basis of the company's patented technology for producing cell tissues. At the beginning of our observations, the routine participants enacted the assembling routine in pursuit of three goals: (1) quality, (2) efficiency, and (3) ad hoc production (see Table 1). In the following, we describe a performance of the assembling routine that Susan, an experienced lab employee, described as "typical" at that time. On Friday afternoon, the head of research and development, Taylor, realized that there were no plates left in stock. He immediately asked all lab employees who were available during the next week to assemble the next batch of plates; together, they arranged to meet on Tuesday after the monthly lab cleaning. As in previous iterations of the routine, the participants met in the lab at the agreed time, prepared the input material and devices, washed the frames (a part of the plate) with ethanol and dried them, performed quality checks of all parts, assembled the parts into a plate at a specific workbench to prevent particles from entering the plate, and inserted the plates into bags and sealed them. The next day, Taylor promptly delivered the plates for sterilization

and returned them as soon as the sterilization was completed.

How the participants enacted the assembling routine evolved over time as they took different actions to improve both the quality of the plates and the efficiency of assembling the plates. For example, CellCo had recently hired John as a quality manager; he introduced checklists aimed at improving quality and efficiency for several of the technical procedures performed in the lab, including the assembling of plates. When John tested the checklist for assembling plates with Susan and found that it worked quite well, Chris reiterated a suggestion that he had made earlier to ask the two student assistants, Jacob and Lilly, to assemble plates. As he reasoned, "I think even staff with little work experience and expertise should be able to [assemble plates] if they are trained appropriately and have the relevant checklists . . . If Jacob and Lilly do it, this is cheaper than if Susan or Laura does it." Because of the decision to staff the assembling of plates with student assistants, several changes unfolded that are of particular interest for our research question, as follows.

***Performance 1.*** Chris asked Jacob and Lilly, who were working part time at the company, whether they would be willing to assemble the plates in addition to performing their other tasks. Whereas Lilly had previously already assembled a small number of plates for experimental purposes as part of her regular tasks at CellCo (see Table 1), Jacob had never assembled plates before. Chris offered to pay the student assistants separately for assembling plates on an hourly basis; the two student assistants agreed. Hence, when Taylor initiated the assembling of the next batch of plates, he asked Jacob and Lilly to perform the task.

***Performance 2.*** In the next steps of performing the routine, the involvement of the student assistants raised numerous questions for the routine participants. When should plate assembling be arranged (given that the student assistants were not tied to regular working hours as the other lab employees were)? Should someone supervise the student assistants, or could they be left alone with the task? John, Taylor, and Susan decided that, for now, Susan should stay with the student assistants when they assembled plates. When Susan tried to arrange a time for assembling plates with Jacob and Lilly, the three participants considered several factors, such as different working hours, student schedules, and the increasingly limited availability of benches in the lab. In negotiating about the different possibilities, Susan felt that meeting on Wednesday afternoon after 5 p.m. made the most sense because the workbenches in the lab would certainly be available by then, and the student assistants would be free. Although the time for assembling plates had never been scheduled outside regular working hours before, such an arrangement made sense for all the participants; in particular, as Susan emphasized in the next lab meeting, such a meeting time would preserve the lab space for other activities during regular working hours.

***Performance 3.*** On Wednesday afternoon, Susan did not leave at 5 p.m. as usual but stayed longer, as previously agreed. First, she showed Jacob, who had never assembled plates before, how to perform the task and highlighted different aspects to which he should pay attention. She then stayed on to supervise Jacob and Lilly's activities. Engaging in a conversation with the field researcher, Susan mentioned that there had been disagreement between Taylor and John about whether she should also help the student assistants assemble plates. In the end, John had decided that she should not help the student assistants; rather, she should only supervise them to ensure that they "do everything right." In addition, John was interested in understanding how many plates the student assistants could assemble per hour without the help of Susan. Susan mentioned that it remained unclear whether she must stay with the student assistants in the future.

***Performance 4.*** Susan and the student assistants arranged to meet again on Thursday during the late afternoon; this time, there were fewer questions about the scheduling. On Thursday morning, Susan provided an account of the student assistants' work to John and Taylor. They discussed how many plates the student assistants could assemble per hour, and Susan then informed John and Taylor about the next steps: "So, today, Lilly will come a bit earlier because she is available earlier, and then she will start on her own. Jacob has a lecture until 4 p.m., and he will come after the lecture." John noted approvingly that "arranging the time for assembling outside regular working hours works well." Susan told John and Taylor that Lilly had offered to also assemble plates during regular working hours, "for an hour or so," when a bench in the lab was available. However, Taylor was skeptical: "That's the question, whether a bench is available. Most of the time, the benches are not available. And what if an experiment takes longer to finish than initially thought; then, she cannot assemble plates either." John agreed: "I would rather keep [assembling plates] outside of regular working hours, so in the late afternoon or on weekends or other free days, like holidays." Susan gave in: "OK. We just have to give them some keys so they can enter the lab." As it turned

out, Lilly already had a key to the lab and Jacob would be able to take a set of keys from an employee who was leaving the company.

When Susan asked whether she needed to continue supervising the student assistants, John replied, "Eventually, [the student assistants] should be able to [assemble plates] on their own. Now, in the beginning, it is still good to have someone supervising them, but, eventually, they should be able to do it reasonably well on their own." The three discussed what Susan needed to show the student assistants so that they could truly work independently. Being reminded about his own work as a student assistant, Taylor had a new idea:

> And, of course, once they can work on their own, we can also offer them to come flexibly to assemble the plates. I also had a part-time job when I was a student, administering contracts. I just came to the office, and, when the pile [of contracts] was high, I had to work more, and, when it was low, I had to work less. That was really great.

The question of how much flexibility the student assistants should have then arose. John supported Taylor's suggestion: "I agree; we should give them this flexibility so that, on a Sunday when it is raining anyway and they don't want to study, they can come to the office and assemble plates for two hours." John and Taylor's suggestion reflected their general tendency to care about their employee's work–life balance. Taylor concluded the discussion by saying, "Now, this truly becomes a part-time job for students."

In the afternoon, when the student assistants arrived to assemble plates, Susan explained the new arrangements to them and instructed them on how to prepare the plate labels and define the lot number. After a few hours, she left them to assemble the plates on their own. The next morning, she checked the plates that they had assembled and found that, on the whole, they had completed the task well:

> Ok, Jacob didn't see the big boxes in the [research and development] lab, and so he put [the assembled plates] into smaller boxes, but that doesn't matter. Apart from that, everything went well. Jacob also called me once in the evening and checked on something because I told him to call when something wasn't clear. But that was really more safeguarding.

During the same day, Lilly and Jacob finalized assembling the batch of 500 plates; they arranged their work independently according to their own schedules.

***Performance 5.*** On the next Monday, after Taylor delivered the plates for sterilization, he spoke with John and Susan about when to initiate the next round of assembling plates: "So, we need to wait and see how many orders come in." Susan nodded and replied, "We also have to see how many plates we use internally." In addition to these questions, John, Taylor, and Susan also wondered about how much raw material had to be available for the student assistants to assemble plates. Remembering previous problems of running out of plates, Susan suggested, "So, when we have 200 plates left in stock, should we then say that we do another round?" This suggestion led John to propose a different idea: "I would rather suggest that we talk to Lilly and Jacob and see, now that they work so flexibly, whether they can assemble continuously, maybe like 500 plates per month." Susan was skeptical and advocated her earlier solution: "But, do you think that you can leave them on their own like this? Don't you think it is better if we say, 'Now you have to assemble again,' and then they have time to do it?" Susan clearly felt uncomfortable about Taylor's suggestion because she worried about "losing track and relying on [the student assistants]." John and Taylor were less worried about losing track and discussed with Susan the practicalities of assembling plates continuously. For example, Taylor posited:

> I don't think it will be a problem. They simply have to let you know how many plates they have assembled; like, they can enter it into a list . . . and then, there is a box that will be steadily filled over time. Let's see how it goes.

Although Susan was not entirely convinced, she agreed to proceed with John and Taylor's suggestion. Thus, next time she met with the student assistants, Susan explained the idea of continuously assembling plates to them; the students liked that suggestion. From that point onwards, the student assistants initiated the assembling of plates on their own, with a monthly target of 500 plates.

At a lab meeting held a few weeks later, John informed the other employees of the current arrangement for assembling plates:

> We are now working on rolling production [i.e., continuously assembling plates], and it works well. This means that Jacob and Lilly assemble independently at all times. Whenever they have some free time, in evening hours or on the weekend, they come to the lab and assemble plates continuously. It allows us to have 500 plates in stock at all times. So, the assembling of plates becomes much more predictable.

As this new pattern of assembling plates emerged, the previous pattern aimed at ensuring the ad hoc production of plates receded into the background. The latter pattern was enacted only one more time

during our study, when the routine participants experienced time pressure in assembling plates.

### Analysis of Narrative 1

Narrative 1 depicts both how the participants performed the assembling routine flexibly and how they continued to change it over time. In this process, the participants developed a different sense of what the assembling routine ought to accomplish, which resulted in updating the goals for the routine and the associated pattern of action; instead of aiming at ensuring the ad hoc production of plates, participants now aimed at a "reliable and predictable supply of plates." In addition, the goals for the routine came to include "minimal interference with scientific work" and "organizing assembling plates as a true part-time job for students." Our analysis of how these changes emerged over time reveals three key insights (see Table 2 for a detailed analysis).

***Insight 1: Foregrounding means generates emerging ends-in-view in performing the routine.*** The examples in Narrative 1 illustrate how the unfolding situation raised numerous questions for the participants about how to perform the routine—that is, they experienced the situation as unfamiliar. In an effort to address these questions, the actors foregrounded the means available to pursue different lines of actions, which led them to conceive of new ends-in-view that were unrelated to the initial goals for the routine (see Table 2, columns 1 and 3). For example, when engaging with the unfamiliar situation of assigning only student assistants to assemble the plates, Susan foregrounded *late afternoon on Wednesday* as a means for arranging a time for assembling plates. Foregrounding this means led her to conceive of a new end-in-view—*preserving the lab space during regular working hours on Wednesday*—which was unrelated to the initial goals for the routine. This emerging sense of purpose developed from considering new means (e.g., the availability of the student assistants outside regular working hours) and from other aspects of the unfolding situation, such as the long-established and increasingly distressing hassle of coping with limited workspace in the lab during regular working hours. In other words, only *through acting* (i.e., through arranging a time to assemble plates in the unfolding situation) did participants develop a sense of what they ought to do.

Similarly, in Performance 4, Susan, Taylor, and John gained a sense of what they ought to do (i.e., the end-in-view of *enabling Jacob and Lilly to work more autonomously*) through engaging with emerging means (i.e., *the trust they were gaining in Jacob and Lilly*) and other aspects of the unfolding situation (i.e., concerns about the student assistants' situation, the increasingly easier accomplishment of the task with the help of a checklist, and the availability of the lab outside of regular working hours). We can observe the same mechanism at play in Performance 5. In the course of that performance, through the process of foregrounding *the newly won autonomy of Jacob and Lilly* (means), participants felt that it made sense to *enable the continuous assembling of plates* (emerging end-in-view). Other aspects of the unfolding circumstances, such as the idea of assembling plates as nontechnical work and the previous problems of running out of stock, also contributed to this emerging sense of purpose. In this instance, however, Susan felt uncomfortable about Taylor's suggestion and would have preferred an alternative solution (i.e., to initiate the assembling of plates herself whenever the stock fell below a minimum level). This example shows how routine participants can view different ends-in-view and different means as appropriate in performing a routine. In the end, John and Taylor, as Susan's superiors, asserted themselves, demonstrating how the enactment of particular means–ends relationships is also susceptible to power dynamics.

In contrast to these performances, in Performances 1 and 3, actors—informed by the goals for the routine—foregrounded ends-in-view rather than means. For example, in Performance 1, the goal of efficiency informed the action of staffing the assembling of plates with Jacob and Lilly; Chris, orienting toward the goal of efficiency, foregrounded the end-in-view of *reducing costs by staffing less expensive employees*, leading him to draw on *Jacob and Lilly as less expensive staff* (means). Similarly, in Performance 3, the participants oriented toward the existing goals for the routine to resolve the questions that arose. John suggested that Susan should supervise the student assistants to *correct mistakes immediately* (end-in-view guided by the goal of quality). However, she was asked not to help them because John wanted to *understand how many plates they could assemble per hour* (end-in-view guided by the goal of efficiency). Overall, Narrative 1 thus illustrates the *full spectrum of intentionality*, ranging from intentions (ends-in-view) that are informed by pre-existing, general goals for the routine to intentions that emerge from engaging with the unfolding situation and foregrounding new means.

**TABLE 2**
**Performing and Patterning in the Assembling Routine (Analysis of Narrative 1)**

| | Unfolding situation: Generating questions | Action | Performing: Enacting means–ends relationships | Patterning: Experienced regularities across multiple performances |
|---|---|---|---|---|
| a | *Perf. 1:* How can we staff the assembling of plates more efficiently given the simplicity of the task? | Staffing the assembling of plates with Lilly and Jacob | Informed by the goal of efficiency, the actors *foreground the end-in-view* (reducing costs by staffing less expensive employees), leading them to draw on new means (Lilly and Jacob as less expensive staff). | The actors experience the same action ("staffing the assembling of plates") as different from past performances because it is aimed at achieving the goal of efficiency instead of ensuring the ad hoc production of plates. |
| b | *Perf. 2:* When should the assembling of plates be arranged? Should someone supervise the student assistants, or could they be left alone with the task? | Arranging to assemble plates on Wednesday afternoon at 5 p.m. | The actors *foreground new means* (late afternoon on Wednesday), leading them to conceive of a new end-in-view (preserve lab space during regular working hours on Wednesday). | The actors experience the same action ("arranging a time to assemble plates") as different from past performances because it starts to develop a different sense of purpose. |
| c | *Perf. 3*: Should Susan help the student assistants assemble plates? How long must she supervise them? | Supervising Jacob and Lilly in assembling plates on Wednesday | Informed by the goals of quality and efficiency, the actors *foreground ends-in-view* (correct mistakes by Jacob and Lilly immediately; understand how many plates they can assemble per hour), leading them to draw differently on existing means (Susan's working time). | The actors experience "supervising" as a new action that clearly differs from past performances but that is nevertheless informed by the routine's goals of ensuring quality and efficiency. |
| d | *Perf. 4*: Can the student assistants assemble plates during regular working hours? | Arranging to assemble plates on Thursday afternoon at 4 and 4:30 p.m. | The actors draw on the late afternoon (means) on Thursday to preserve lab space during regular working hours on Thursday (end-in-view). | The actors develop a different sense of what the routine should accomplish ("minimizing interference with scientific work"). This emerging sense of purpose results in *updating the goals for the routine* and the evolving pattern of action. |
| e | Should Susan continue to supervise the student assistants? When can they assemble plates on their own? | Supervising Jacob and Lilly in assembling plates on Thursday afternoon | Informed by the goal of efficiency, the actors *foreground the end-in-view* (enable Jacob and Lilly to work on their own), leading them to draw on existing means (Susan's working time on Thursday) differently. | The actors experience the new action ("supervising") as a temporary action that is necessary to ensure the routine's goal of quality for now and is unlikely to extend to future performances. |
| f | How much flexibility should the student assistants have in arranging their time for assembling plates? | Granting Jacob and Lilly permission to flexibly arrange the time for assembling plates | The actors *foreground new means* (trust in Jacob and Lilly), leading them to conceive of a new end-in-view (enabling Jacob and Lilly to work autonomously). | The actors develop a different sense of what the routine should accomplish ("organizing the assembling of plates as a true part-time job for students"). This emerging sense of purpose results in *updating the goals for the routine* and the evolving pattern of action. |
| | *Perf. 5:* How many plates will be needed? When should the next round of assembling be initiated? Can the student assistants be left alone to initiate the next round? | Initiating the next round of assembling plates with a fixed monthly target of 500 plates | The actors *foreground new means* (Jacob and Lilly's autonomy), leading them to conceive of a new end-in-view (enabling the continuous assembling of plates). | The actors develop a different sense of what the routine should accomplish ("reliable and predictable supply of plates"). This emerging sense of purpose results in *replacing the previous goal* of ad hoc production *with a new goal for the routine*. Concurrently, the enacted patterns of action change. |

***Insight 2: The emerging sense of purpose results in updating the goals for the routine in patterning.*** The routine participants experienced most of the performances depicted in Narrative 1 as different from past performances of the routine (see Table 2, column 4). In patterning these performances, participants often gained a different understanding of what the routine ought to accomplish—that is, they updated the goals for the routine. For example, in Performance 2, the participants experienced the same action (i.e., "arranging a time to assemble plates") as different from previous performances because the emerging end-in-view of "*preserving lab space during regular working hours*" differed from the goal of ad hoc production that actors aimed to accomplish with this action in past performances. In subsequent performances, participants experienced this emerging sense of purpose not only as something specific to this particular performance but also as a sense of purpose that extended across multiple performances. When Susan suggested that Lilly could still assemble plates during regular working hours, both John and Taylor expressed their emerging understanding that they generally ought to avoid interference with scientific work (e.g., "If an experiment takes longer . . ., then she cannot assemble either" and "I would rather keep [assembling plates] outside of regular working hours"). In developing this different sense of what the routine should accomplish, participants updated the goals for the routine and the associated pattern. Performing the assembling routine generally aimed at "minimizing interferences with scientific work," and the associated pattern of action was described by participants as "assembling plates outside regular working hours," which involved giving Jacob and Lilly the permission and the keys to enter the lab in the evenings and on the weekends. In this case, foregrounding means and conceiving of a new end-in-view in performing led to updating the goals for the routine and the associated pattern in the process of patterning.

The same mechanism of updating the goals for the routine can be observed when Taylor suggested granting Jacob and Lilly permission to flexibly arrange the time for assembling (Performance 4). In this

case, the emerging end-in-view (*enabling Jacob and Lilly to work autonomously*) led to the participants' understanding that they ought to organize the assembling routine as a "true part-time job for students" (new goal for the routine). This instance also reveals how updating the goals for the routine in patterning is influenced by the participants' background (e.g., Taylor's work as a student assistant) and the management's general concern for their employees' work–life balance. Performance 5 illustrates the same mechanisms of how an emerging end-in-view in a specific performance ("enabling the continuous assembling of plates") leads actors to gain a different understanding of what the routine ought to accomplish (shifting from the goal of ad hoc production to a "reliable and predictable supply of plates").

However, emerging ends-in-view do not always lead to updating the goals for the routine. As is evident in Performance 4, participants did not experience the emerging end-in-view ("correct mistakes by Jacob and Lilly immediately") as something that they should generally aim for in assembling plates. Rather, the end-in-view made sense only for the first iterations when Jacob's and Lilly's limited experience in assembling plates still entailed a high risk of mistakes ("Eventually, [the student assistants] should be able to [assemble plates] on their own."). This example highlights that there is a difference between the *sense of purpose* that participants experience in *performing* (i.e., in a specific performance) and the sense of purpose that they experience in *patterning* (i.e., across multiple performances). In some instances, the emerging sense of purpose in performing can result in updating the goals for the routine, but this updating does not always occur.

***Insight 3: The unfolding situation generates progressive means–ends cycles and continuous routine change.*** Narrative 1 depicts how taking new actions in performing the assembling routine changed the unfolding situation for subsequent actions, leading the routine participants to enact new means–ends relationships continuously. This continuous change occasionally involved the foregrounding of new ends-in-view, informed by existing goals of the routine; in other instances of particular interest to us here, it was driven by the foregrounding of means. We refer to this unfolding of continuous routine change as progressive means–ends-cycles (see Table 2, arrows a to e). Two aspects of the unfolding situation particularly contributed to these progressive means–ends cycles. First, the unfolding situation continuously generated *new questions* that provoked foregrounding means. For example, staffing the assembling of plates with the student assistants in Performance 1 generated numerous questions for subsequent actions (Table 2, arrow a connecting Performances 1 and 2), which led the routine participants to foreground new means and conceive of new ends-in-view (see Insight 1). As the performances continued to unfold, they generated additional questions, prompting actors to further foreground means and conceive of new ends-in-view (Table 2, arrows e and f).

Second, the unfolding situation also generated *new assets* (e.g., qualities of relationships) that the participants engaged as new means for taking further new actions. In Performance 4, supervising the student assistants generated the trust that Taylor foregrounded when he suggested enabling more autonomous work for the student assistants (Table 2, arrow e). In the next iteration of the routine (Performance 5), John foregrounded Jacob and Lilly's newly won autonomy, which led him to conceive of a new end-in-view (i.e., enabling the continuous assembling of plates) (Table 2, arrow f).

Taken together, Insights 1 to 3 suggest that *continuous routine change* can result from the unfolding situation, which leads routine participants to foreground means and conceive of new ends-in-view in *performing* and to update the goals in *patterning*. Thus, routines can change in ways that the actors had not intended a priori; instead, the actors only developed the sense of purpose *through performing* the routine.

### Narrative 2: Tracing Means–Ends Dynamics across the Newsletter, Sales, and Shipping Routines

Narrative 2 depicts an additional aspect of the means–ends dynamics that we observed in the performances of CellCo's routines—that is, how these dynamics evolved across the performances of several routines. Specifically, Narrative 2 traces how the performance of the newsletter routine led actors to foreground new means and to conceive of new ends-in-view in performing the sales and shipping routines (see Table 1 for a short description of these routines).

***Performance 1 (marketing routine).*** In November, the marketing assistant, Carol, was preparing the final newsletter of the year. In the weekly management team meeting, she discussed what to communicate in the newsletter. At that point, the management team was particularly concerned about a new low-cost

competitor, CostCo, which had recently started to market aggressively a plate that was similar to CellCo's plate but substantially cheaper. A few of CellCo's contacts had already experimented with CostCo's plate; thus, the management team felt a need to position its product more clearly vis-à-vis CostCo's plate. For example, they decided to announce their pending patent application that, if granted, would put CostCo out of business. Chris also suggested the idea of an introductory trial kit:

> The other point that I discussed with Jim [one of the sales agents]—we would again like to offer a special end-of-year promotional event in the newsletter. Initially, we thought about a plate with [a specific type of] cell tissues, but now that we put more emphasis [in the newsletter] on the plate and we also want to retaliate a bit against CostCo, why don't we offer a good deal for the plates, like a kind of trial kit? We just have to see what fits in our box. It could be three plates of the production plate and three plates of the receiver plate.

***Performance 2 (sales routine).*** The idea of a trial kit in the newsletter raised questions for the sales routine. For example, the managers asked, "You can only order it once, right?," "How much should it be?," and "Shipping is extra, correct?" After some deliberation, they agreed that the trial kit would be sold only once to each customer, that the cost would be approximately US$ 190 and that shipping would be extra. As Chris contended, "It makes no sense to enter a price war with CostCo, but we can make it a cheap price, and I think this will create an incentive to order." Chris related the idea of the trial kit to what they had done during the previous year: "The last time, we said '10 percent off everything—except pet food.' . . . [Similarly, with the trial kit], we can land a few nice catches." Michel agreed with Chris: "Yes, we can capture some end-of-year money." On the next day, CellCo's customers received the newsletter with the following offer: "Introductory trial of the [product name] at US$ 195 [for six plates]. Offer expires on December 31, 2011. Now, there is an easy way to get firsthand experience with CellCo's patent-pending technology platform." On that same day, Chris received three orders for the trial kit.

***Performance 3 (shipping routine).*** Together with John, the export manager, Chris immediately began to prepare to ship the trial kits, addressing the most pressing questions: In what box should the trial kit be shipped? How should it be labeled? Which shipping provider should be used? John ordered new boxes and designed the label for the trial kit based on previous products. Chris, who realized that the shipping costs were fairly high in relation to the discounted trial kit (approximately 25% of the price of the entire kit), asked John to compare the shipping costs for the three shipping providers with which they were familiar; he wanted to minimize the shipping costs. The idea of saving on shipping costs was not new in performing the shipping routine; on a few earlier occasions, John had asked staff members to take shipments with them when he knew that they were visiting customers who had ordered products. However, the routine participants did not expect that, generally, reducing costs would be part of the shipping routine at CellCo.

***Performance 4 (sales routine).*** During the following week, Chris had a sales call with two sales agents, Jim and Mark, both of whom lived abroad. When discussing their experience with the trial kits, Chris had the idea that they could use Mark's home base to distribute trial kits: "This would be very economical because we only would have the shipping and custom costs into the EU, and then you could ship the trial kits for us in the EU." The sales team knew that a significant number of CellCo's customers were located in that region, and Chris had already received a few orders from there. Mark agreed with Chris: "For a customer, if he buys only three plates, something like this trial kit, shipping costs can be a problem. He has to pay something like 100 euros for shipping and customs. And he doesn't like it." Chris was enthusiastic: "Great, then we will immediately prepare a box with several trial kits for you. And then you only have to put the addresses on them." He also promised that he would include the cheaper shipping and customs costs in the quotes provided to customers. Mark proceeded as discussed and worked with John to distribute the subsequent orders of trial kits from his home; he also established a small stock of trial kits at his home so that he could ship immediately when CellCo received a new order. This way of saving costs differed from previous performances of the shipping routine because the participants did not save costs internally but instead passed the savings on to the customer.

***Performance 5 (sales routine).*** At a sales meeting held a few weeks later, the sales team discussed the products they currently offered. Chris described what selling the trial kit meant to him:

> We have a trial kit where we say, "It's heavily discounted, it's cheap, let's say it's affordable." But at no point do we create a price anchor to which the customer could later return; we say that this is a special offer.

He related this experience to previous difficulties with what to tell new customers when they ask about price. Specifically, he complained that CellCo typically told customers the price for *one* plate, although this price was misleading because customers would likely buy larger amounts of plates, for which they would receive a discount. The experience led Chris to see that the trial kit provided an opportunity to "offer a price to the customer without making a commitment to offer that price in the future, and [to] sort of lead [the price] discussion down at this point." Jim backed up Chris's idea with his sales experience: "We're talking about a fairly classic situation in sales. I mean, I always try to delay the discussion on price. First, you want to talk about the value that the customer gets." Nevertheless, the sales team remained uncertain about whether they wanted to offer the trial kit as a regular product, because they felt that it was also "a newsworthy thing." Chris confirmed, "If [the trial kit] is a way that would allow you to get the customer in touch with the technology without starting to discuss price . . ., then it could be very valuable." After some deliberation, the sales team decided to do both—that is, they decided to "keep [the trial kit] permanently at a higher price and only make it US$ 195 USD [for six plates] every now and then" so that they would maintain "an actionable point for the newsletter." At the end of the meeting, Chris drew the following conclusion: "It's not a product that we sell to make a profit; it's a product to get customers on board." Jim confirmed this point: "This emphasizes the point that because it's a loss-making activity, it's really important that [the customers] are satisfied."

***Performance 6 (shipping routine).*** During a break in the sales meeting, Chris, John, and Mark discussed their experience in distributing from Mark's home base, which they began to refer to as "shipping from the regional hub." Chris began the discussion by saying, "So, basically, the idea of the hub works well. We not only save shipping and customs costs, but can also communicate this to the customer when we send them the quote." John agreed: "Yes, we all save money, and it is much faster. And it is more convenient for the customer [than receiving a shipment from CellCo's headquarters]." Chris pursued the idea further: "This would also make sense for the academic kit [a product tailored to academic customers]." John elaborated on how distributing from a regional hub would make the kit "a better deal for the customer." Chris added, "If we talk about a bigger shipment to a customer who wants 200 plates or something like that, then we simply ship it from here. And then, if the customer pays 100 [currency] for customs, then that's fine." Mark accepted the arrangement with the hub, but cautioned that they would have to see how much work would be required of him.

A few weeks later, Mark left CellCo to start a new job elsewhere. Although Mark's home was no longer available for distributing CellCo's products, Chris and John continued to pursue the idea of a regional hub. Eventually, they established a small subsidiary in the European Union, and, once a week, a CellCo employee crossed the border with a load of products and distributed them from the local office.

### Analysis of Narrative 2

The flexible performances and routine changes depicted in Narrative 2 provide many of the insights that we described in the context of Narrative 1. We do not want to reiterate those insights here; rather, we provide a detailed analysis of them in Table 3. Below, we concentrate on *a new insight* that can be gained from the analysis of Narrative 2—that is, how the unfolding situation connects the performances of different routines and how this connection prompts actors to foreground new means, to conceive of new ends-in-view, and to update the goals for other routines.

***Insight 4: The unfolding situation and emerging ends-in-view drive change across multiple routines.*** Narrative 2 shows how performing the newsletter routine at the end of the year changed the context in which subsequent performances of the sales and shipping routines occurred (see Table 3, arrows a to f). Specifically, by marketing the trial kit as a special end-of-year offer, the performance of the newsletter routine generated a *new asset* (i.e., the trial kit) and *numerous questions* about how to sell and how to ship it for the other two routines (Table 3, arrows a and b). The unfolding of the situation prompted actors to foreground the trial kit as new means in the sales routine (Performances 2 and 5) and Mark's home base as a new means in the shipping routine (Performances 4 and 6), which, in both routines, led to emerging ends-in-view in performing and the updating of goals in patterning. Below, we unpack how these changes occurred.

In the sales routine, selling the trial kit as a promotional event (Performance 2) generated questions about whether the trial kit should be included as a regular product in the price list (Table 3, arrow d). In pondering this question, Chris foregrounded the

**TABLE 3**
**Performing and Patterning in the Newsletter, Sales, and Shipping Routines (Analysis of Narrative 2)**

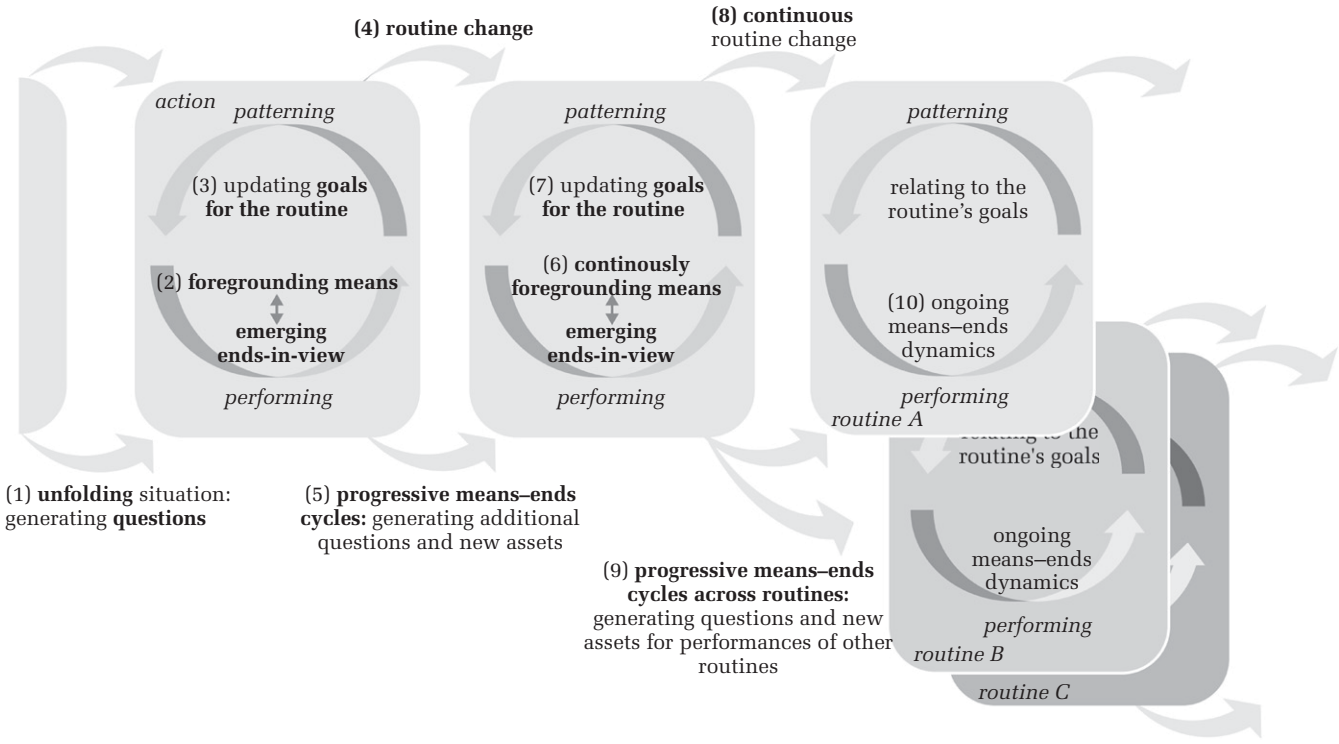
| | Unfolding situation: Generating questions | Action | Performing: Enacting means–ends relationships | Patterning: Experienced regularities across multiple performances |
|---|---|---|---|---|
| a | *Perf. 1:* How should CellCo position itself in relation to CostCo in the newsletter? What must the customer know about CellCo's activities in relation to CostCo? | *Newsletter routine:* including the trial kit as a special end-of-year offer | The actors *foreground the end-in-view* (retaliate against CostCo), leading them to conceive of new means (trial kit). | The actors experience the action ("including a promotional event in the newsletter") as similar to previous performances of the newsletter routine. Although the end-in-view is different, the action remains aligned with the routine's goal of attracting customer attention. |
| b | *Perf. 2:* How often can customers order the trial kit? How much should it cost? Does the price include shipping costs? | *Sales routine:* selling the trial kit as a promotional event at the end of the year | The actors *foreground a new means* (trial kit), leading them to conceive of a new end-in-view (capture end-of-year funds). | The actors experience the action ("doing a promotion") as similar to previous performances of the sales routine. It accomplishes the routine's goal of promoting CellCo's products. |
| c | *Perf. 3:* In what box should the trial kit be shipped? How should it be labeled? Which shipping provider should be used? | *Shipping routine*: shipping the trial kit | The actors *foreground the end-in-view* (saving shipping costs), drawing on existing means differently (cheapest shipping provider). | Although they perform the routine differently, the actors experience the action ("shipping plates") as continuing the existing pattern of shipping plates. The end-in-view pursued by actors differs from the routine's goal of speedy delivery, but it is considered appropriate in the specific circumstances of the trial kit. |
| d | *Perf. 4:* Will the customer be dissatisfied with the comparatively high shipping and customs costs? | *Shipping routine:* distributing the trial kit from Mark's home base | The actors *foreground a new means* (Mark's home base), leading them to alter the end-in-view (save shipping and custom costs for customers). | The actors experience the action ("distributing plate shipments from a hub") as different from previous performances, involving both different ways of coordinating (e.g., between John and Mark) and a different way of relating to the customer. |
| e | *Perf. 5:* Should CellCo keep offering the trial kit as a regular product? | *Sales routine:* including the trial kit as a regular product in the price list | The actors *foreground a new means* (trial kit), leading them to conceive of a new end-in-view (offering a price without creating a price anchor). | The actors develop a different sense of what the sales routine should accomplish ("introducing customers to the technology" compared with the past goal of "making a profit"). This emerging sense of purpose results in *updating the goals for the routine* and creating a new pattern of "getting the customer on board" that is enacted alongside a pattern of "making a profit". |
| f | *Perf. 6:* Should CellCo continue distributing shipments from the "regional hub"? | *Shipping routine:* extending distributing from the hub to other plate shipments | The actors *foreground a new means* (Mark's home base), leading them to alter the end-in-view (making shipments faster, cheaper and more convenient). | The actors develop a different sense of what the routine should accomplish ("providing a better deal for the customer.") This emerging sense of purpose results in *updating the goals for the routine* and creating a new pattern of "distributing from a regional hub," in addition to the pattern of "shipping from CellCo's headquarters," which they continue to enact. |

trial kit as a new way of offering the plate, leading him to conceive of a new end-in-view ("offering a price without creating a price anchor") (Performance 5). In patterning the performances of selling the trial kit, participants gained a different sense of what the sales routine should accomplish. Specifically, in light of constant uncertainties about how to respond when new customers ask about price, participants started to develop the idea that the sales routine should aim at "get[ing] the customer in touch with the technology without starting to discuss price." In other words, participants updated the goals for the routine, which thus included not only "making a profit" but also "introducing the customer to the technology." They created a new pattern of selling plates that avoided a price discussion with new customers by offering a trial kit at a lower price only once. This "loss-making activity" emerged as an additional pattern of action that the actors enacted alongside a pattern oriented toward making a profit.

In the shipping routine, we observed the same mechanism. The shipping of the trial kit prompted actors to foreground a new means (Mark's home base), which, in turn, led them to alter the initial end-in-view to "saving shipping and customs costs for the customer" (Performance 4, Chris: "This would be very economical because we [save] the shipping and customs costs into the EU") and subsequently even to "making shipments faster, cheaper, and more convenient" (Performance 6, John: "It is much faster. And, for the customer, it is more convenient."). In patterning these performances of shipping the trial kit from Mark's home base, participants started to develop a different sense of what the shipping routine should accomplish. That is, they updated the goals for the routine; shipping was no longer aimed only at ensuring a speedy delivery but more broadly at "providing a better deal for the customer" (including costs and convenience in addition to speed). Participants described the pattern associated with this goal as "distributing from a regional hub," and they continued to enact it even when Mark's home base was no longer available. For large plate shipments, the routine participants continued to enact the old pattern of "shipping from CellCo's headquarters."

Overall, these data show how performing one routine changed the unfolding situation for the

**FIGURE 1**
**A Process Model of Emerging Intentionality in Routine Dynamics**




performances of two other routines. It generated both new questions and new assets for further actions in these routines, as a result of which the actors developed a different sense of purpose in patterning. What is interesting in Narrative 2 is that, although the participants did not experience any change in the pattern of the newsletter routine (e.g., "we would again like to offer a special end-of-year promotional event in the newsletter"; see Table 3, Performance 1), performing this routine substantially changed how the actors performed and patterned the sales and shipping routines. Narrative 2 thus shows how the unfolding situation connecting the performances of interdependent routines can drive change across multiple routines.

## Toward a Process Model of Emerging Ends-in-View in Routine Dynamics

Based on the analysis above, we integrate the four main insights from our field study at CellCo into a process model of continuous routine change (see Figure 1). Whereas means–ends dynamics generate routine stability and change in many different ways, in our model, we zoom in on the means–ends dynamics that go beyond existing routine theory. In particular, we focus on the new mechanism that is the focus of our paper—the foregrounding of means and the emergence of new ends-in-view. To keep the model as parsimonious as possible, we do not include all possible aspects that influence means–ends dynamics (e.g., actors' background and experience, power relations, etc.). Starting on the left side (arrow 1), the model illustrates how the unfolding situation can open up various possibilities for action in the continuous process of performing routines, thereby generating questions about what to do next. Routine participants engage these questions by exploring different means–ends relationships in *performing*. In particular, they foreground new means, leading them to conceive of new ends-in-view that might be unrelated to the routine's initial goals (arrow 2). This mechanism constitutes a form of *emerging intentionality* because foregrounding means results in ends-in-view that go beyond the goals that actors might initially have brought to the performance. In other words, the end-in-view *emerges through* performing the routine. In *patterning* actions that involve new means–ends relationships, actors can gain

a different sense of what the routine generally ought to accomplish. In other words, actors *update the goals for the routine* (arrow 3) and the associated pattern, resulting in routine change over time (arrow 4). However, the emerging ends-in-view do not always lead to updating the goals for the routine. As our data show, participants can also experience the emerging sense of purpose as an exception that is only temporarily enacted in a specific performance and does not become part of enacted patterns. In such a case, the existing goals for the routine are reconfirmed in patterning.

The CellCo data reveal how the unfolding situation can generate additional questions and new assets (such as objects, relationships, and qualities of relationships) (arrow 5), resulting in *progressive means–ends cycles*. That is, routine participants can continue to foreground means and conceive of new ends-in-view in performing the routine (arrow 6). If, in patterning these actions, actors continue to update the goals for the routine (arrow 7), foregrounding means leads to *continuous routine change* over time (arrow 8). In addition, as depicted in Narrative 2, the progressive means–ends cycles can extend *across the performances of several routines* (arrow 9). Similar to within-routine dynamics, the performances of several routines are connected through the unfolding situation—that is, performing one routine can generate new questions and new assets for subsequent actions taken to perform other routines.

Another dynamic that becomes evident in both narratives is that, over time, actors can shift between foregrounding means and foregrounding ends. Close observation of these *ongoing means–ends dynamics* in performing (arrow 10) reveals that, for the actors at CellCo, means and ends-in-view were fluid and flexible: they continuously tinkered with means in relation to ends-in-view and with ends-in-view in relation to means. Means and ends-in-view are not fixed categories that exist to be taken up in action; instead, they are brought into existence through action. For example, in Narrative 2, in performing the shipping routine, Chris initially foregrounded the end-in-view of saving shipping costs, tentatively engaging with different means (e.g., the cheapest shipping provider, Mark's home base). Engaging with these means somewhat altered the end-in-view as the participants began to aim for "saving shipping and custom costs" and later on even for "making shipments faster and more reliable." Narrative 1 also demonstrates how the end-in-view pursued in one action can become the means for subsequent actions; in Performance 4, the end-in-view of enabling the student assistants to assemble plates on their own turned into a means (i.e., trust) for taking further actions.

## DISCUSSION

Our study was motivated by an important challenge in existing research on routine dynamics (Feldman, 2016; Feldman, Pentland, D'Adderio, & Lazaric, 2016): routine scholars appear to be unnecessarily held back by implicit taken-for-granted assumptions about intentionality, such as, for example, the idea that actors bring certain ends to the performance of the routine and choose the means for accomplishing those ends accordingly. This assumption prevents them from exploring the "[full] spectrum of intentionality" (Feldman, 2016: 32) and from recognizing important sources of routine change. By focusing on the other end of the spectrum of intentionality, our study aimed to uncover how the enactment of means influences actors' ends and how this influence contributes to routine change.

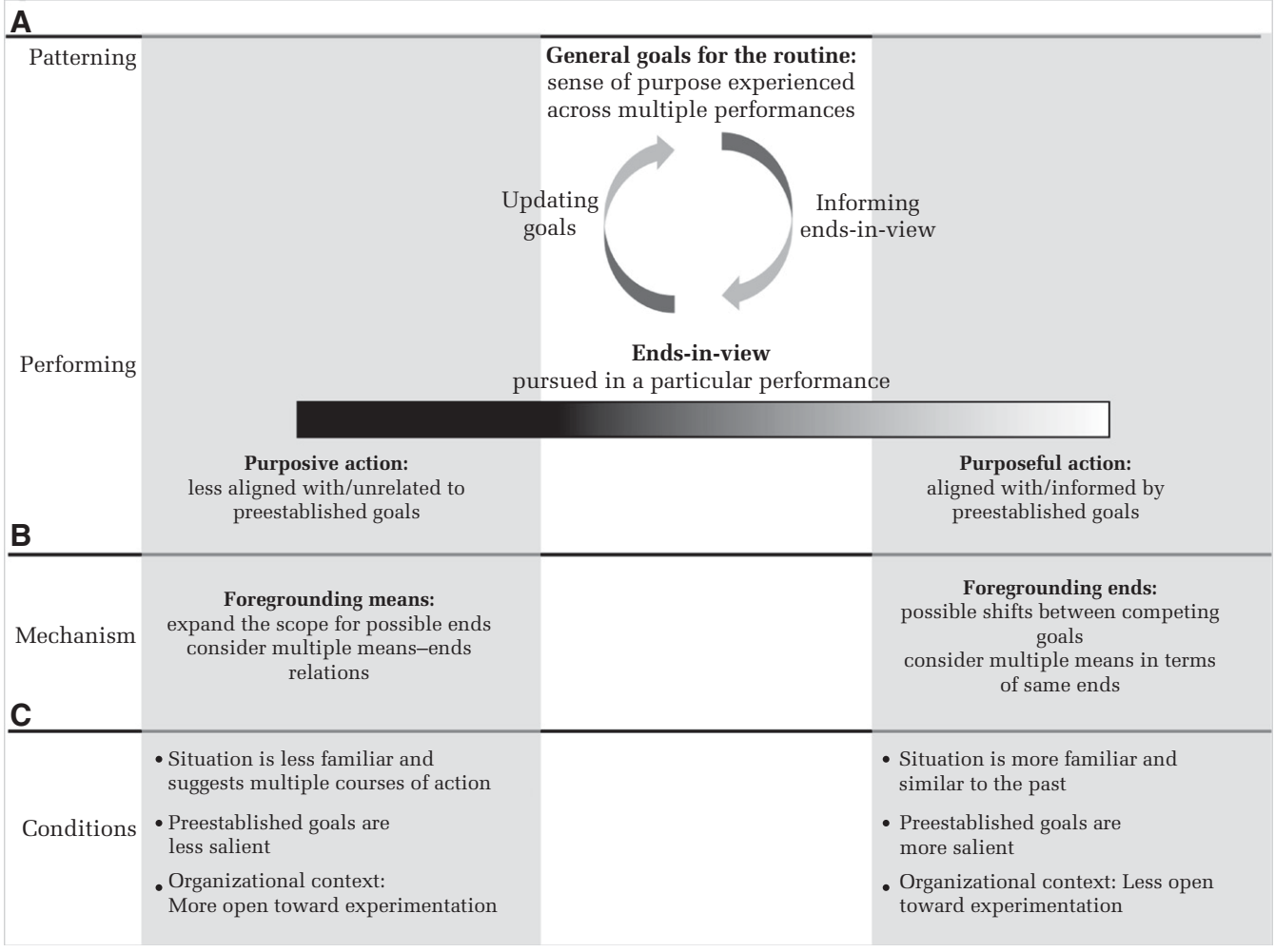
Using a pragmatist perspective on intentionality (Dewey, 1957; Joas, 1996), we analyzed how actors enacted means and pursued ends-in-view in four selected routines at our case company. The main contribution of our study is to uncover how the situated emergence of means draws forth different ends-in-view in performing routines and different goals in patterning. Whereas previous research has primarily focused on how actors *bring particular intentions to* the performance of a routine (e.g., Deken et al., 2016; Feldman, 2000; Howard-Grenville, 2005), our study brings to the fore how *intentions emerge from* foregrounding means within the concrete situation at hand and how this emerging sense of purpose can result in updating the goals for the routine. In this sense, we go beyond earlier studies that have shown how means might "present opportunities for pursuit of [pre-established] ends" (Howard-Grenville, 2005: 629) by highlighting that means might give rise to entirely new ends-in-view and goals. This contribution allows us to paint a fuller picture of the spectrum of intentionality involved in routines, to challenge key taken-for-granted assumptions about intentional action in routine dynamics, and to shed new light on the potential for routines to change.

### The Spectrum of Intentionality in Routine Dynamics

The theory of routine dynamics is based on the claim that actions in routines "are motivated by will and intention" (Feldman, 2000: 613). Empirical studies certainly document intentionality as a sense of purpose in performing routines, but what this purpose is and how it can be conceptualized is not always clear. Figure 2 outlines how we can understand intentionality in routine dynamics (part A), its underlying mechanisms (part B), and the conditions under which we can expect to observe the different mechanisms (part C).

Part A of Figure 2 depicts how, drawing on a pragmatist view, we can distinguish between the sense of purpose experienced in *performing* (i.e., the *end-in-view* pursued in a specific performance) and the sense of purpose experienced in patterning (i.e., the *general goals for the routine* enacted across multiple performances). Prior routine studies have focused either on the *ends-in-view in performing* (e.g., Howard-Grenville, 2005) or on the *goals in patterning* (e.g., D'Adderio, 2014), or have *conflated the two* (e.g., Bruns, 2009). If scholars do not clearly distinguish between these two aspects of intentionality, they cannot analyze the relationship between them—for example, whether goals inform ends-in-view or whether emerging ends-in-view lead to updating goals—and they might struggle to explain the discrepancy between ends-in-view and goals. Bruns's (2009) study of safety routines in a biology lab illustrates this problem. Because the author does not distinguish between ends-in-view and goals, she finds that actors were "inconsistent in their

**FIGURE 2**
**Spectrum of Intentionality**



behavior" and she was "prevented from building theory or recognizing a pattern that would predict safety behavior, not even on the level of the individual scientist" (Bruns, 2009: 1414). Distinguishing more clearly between the ends-in-view that scientists pursue in a specific performance and how these ends-in-view are informed by either organizationally sanctioned goals of safety or the scientists' goals of protecting their experiments from contamination might have helped her theorize the differences in safety behavior.

Another important implication of our study is that we should understand intentionality in performing routines as a *spectrum* (see Figure 2, part A, bottom) ranging from ends-in-view that are primarily informed by and aligned with pre-established goals (*purposeful action*) to ends-in-view that are unrelated to any pre-established goals (*purposive action*). This distinction corresponds with Chia and Holt's (2006: 644) contrast between "purposeful planned action" and "purposive practical coping." It is crucial to recognize that action in routine is *always intentional*, in the sense that it is pursuing a particular end-in-view. The only question is whether the ends-in-view pursued in a specific performance are informed by and aligned with pre-established goals, or whether they are directed toward coping with the immediate circumstances "without any presumption [of] some overall, longer-term outcome" (Chia & Holt, 2006: 648).

Some scholars (e.g., Aldrich & Rueff, 2006) might label purposive action that lacks a clear goal orientation as "unintentional," creating the misleading impression that these actions are devoid of any sense of purpose. Labeling action as "unintentional" is problematic because doing so might lead scholars to view it as automatic or mindless behavior (Ashforth & Fried, 1988; Cyert & March, 1963), or as "blind variation" that results from "accidents, chance, luck, conflict, malfeasance, and so forth" (Aldrich & Rueff, 2006: 18). In other words, these scholars reduce the range of action that is considered "agentic" by suggesting that certain actions lack intentions. In contrast, uncovering purposive action allows us to acknowledge that action is always infused with a sense of purpose, but, instead of searching for any pre-established goals that motivate it, we can ask how the unfolding of the situation and the engagement with potential means has given rise to a particular sense of what one ought to do.

Part B of Figure 2 outlines the *specific mechanisms* that underlie purposive and purposeful action and how they can be viewed as differential enactments of means–ends relationships in performing routines. Previous studies focusing on *purposeful action* have clearly delineated the underlying mechanism as the *foregrounding of ends*. For example, D'Adderio (2014) demonstrated how selectively orienting toward one goal rather than another allows actors to shift between competing goals as the situation unfolds, thereby helping organizations to perform contrasting goals simultaneously. Rerup and Feldman (2011) showed how foregrounding ends enables participants to survey multiple possible means in terms of the same goal and thereby overcome problems and obstacles in performing routines. These two studies illustrate how purposeful action is informed by and oriented toward the *goals for the routine*. In turn, Howard-Grenville (2005) highlighted how purposeful action can also be informed by *other goals that actors bring to* the performance of a routine. In her study of a chip manufacturer, the members of an environmental group used the roadmapping routine to pursue the group's goal of enhancing their legitimacy in the organization.

By focusing on the other end of the spectrum, our study adds to this research by identifying the mechanism that drives *purposive action*: the *foregrounding of means*. Our findings show how foregrounding means expands the scope of possible ends that actors consider in their performance of the routine and can lead them to conceive of new ends-in-view unrelated to any pre-established goals. Foregrounding means also allows actors to consider multiple means–ends relationships, considering both different means and different ends simultaneously. This way of enacting the routine allows actors to develop a sense of what they ought to do, not by orienting toward existing goals but by engaging fully with the unfolding situation.

As our findings indicate, the distinction between purposeful and purposive action does not constitute discrete categories but, rather, spans a *continuum* of intentional action. Routine participants always bring with them certain preferences, dispositions, and preformed goals (e.g., Howard-Grenville, 2005; Turner & Fern, 2012), and, at the same time, acting always involves engaging with existing and emerging means in the unfolding situation. Hence, intentional action can be more or less strongly oriented toward pre-established goals and more or less influenced by the situational emergence of means. Our study also shows that the unfolding situation can lead actors to shift flexibly between foregrounding goals and foregrounding means in their performance

of the routine. For example, an unfamiliar situation can lead actors to foreground particular means, as a result of which they conceive of new ends-in-view, which, in turn, can lead them to foreground these ends and survey possible means.

Uncovering how actions differ in terms of foregrounding ends or foregrounding means also allows us to explore *under what conditions* we are likely to encounter which form of enactment of the means-ends relationship (see part C of Figure 2). Our findings point toward two important conditions. The first condition concerns the familiarity with the unfolding situation. When the situation was less familiar and suggested multiple courses of action, actors often foregrounded means as a way to probe the different possibilities. In contrast, when the concrete situation at hand seemed familiar and similar to the past, actors tended to foreground ends rather than means. The second condition concerns the salience of pre-established goals in the concrete situation at hand. The less salient or the less applicable existing goals were in the unfamiliar situation (e.g., because it involved addressing a new facet of the routine), the more actors tended to foreground means rather than ends. In contrast, the more salient the existing goals were (e.g., when Jacob's limited experience with assembling plates endangered the existing goal of ensuring quality), the more likely it was that they would foreground ends.

In exploring the conditions for the differential enactment of means–ends relationships, we must draw attention to important boundary conditions of our study. First, because CellCo was a relatively young company at the time of our observations, the two conditions supporting the foregrounding of means are likely to have been more prevalent than in more established organizations. In other words, at CellCo, the likelihood that routine participants would encounter situations that they experienced as unfamiliar or in which existing goals were less salient was particularly high. Second, we noted a particularly high propensity among CellCo's members to experiment with new means whenever goals were less salient or situations unfamiliar. This openness toward experimentation is likely due to the fact that the routines that we observed were relatively simple and the outcomes of different actions were highly predictable. In addition, CellCo was marked by a pronounced entrepreneurial spirit. In contrast, the routines literature describes settings in which organizational members are less willing to experiment with new means and new ends-in-view, such as high-reliability organizations (Bigley & Roberts, 2001), catastrophe situations (Danner-Schröder & Geiger, 2016), or more complex routines in which pursuing new ends-in-view can bear the risk of generating unexpected and negative effects (see, e.g., D'Adderio, 2014). For example, Danner-Schröder and Geiger (2016: 22) uncovered how actors in catastrophe situations actively foreground existing goals for the routine and prioritize particular activities "to suppress possible irregularities and novelties, which may emanate from the context." Hence, comparing the particular setting of our study to settings described in the literature, we can identify the openness toward experimentation as a third condition for the differential enactment of means–ends relationships.

Taken together, Figure 2 refines the understanding of intentionality in routine dynamics by (part A) clarifying the difference between the sense of purpose experienced in performing and in patterning and the interplay between the two, (part B) uncovering the underlying mechanism of purposive action, and (part C) specifying the conditions that are likely to lead to more purposeful or more purposive action.

### Challenging Taken-for-Granted Assumptions about Intentionality in Routines Research

Our pragmatist view on intentionality is inherently a relational view that treats social phenomena as outcomes of relations rather than as inherent (essentialist) characteristics of social entities (Farjoun et al., 2015). Although the routines literature has made great progress toward theorizing different aspects of routine dynamics in terms of relations rather than entities (Feldman, 2016; Feldman et al., 2016), its conceptualization of intentionality remains wedded to the traditional entity-based view of intentions as rooted in individual actors and as a phenomenon of the mind. Our relational view of intentionality allows us to challenge and revise these taken-for-granted assumptions that unnecessarily hold back the field of routine dynamics.

***Challenging assumption 1: Intentionality as rooted in actors.*** Existing routine studies typically treat intentionality as an aspect of the individual. Accordingly, they speak of "individual intentions" (Howard-Grenville, 2005: 619, 628), "personal ... objectives" (Bruns, 2009: 1400), "individuals' goals" (Nigam, Huising, & Golden, 2016: 4), or "intentions of organizational actors" (Glaser, 2017: 1). Certainly, actors bring with them certain pre-reflective aspirations and tendencies (Joas, 1996)—the importance

of experience and background has been noted in several routine studies (Sonenshein, 2016; Turner & Fern, 2012)—that affect the emergence of intentions; however, these aspirations and tendencies do not determine the ends-in-view that actors eventually come to pursue in their actions. Instead, as our study highlights, intentionality is constituted *through action* rather than being *brought into the action* by the actor. Accordingly, if we want to understand the origin of intentionality, we must examine the different aspects of situated action. In this context, means take on a central role because acting necessarily involves the means by which "the end-in-view can be brought into existence" (Dewey, 1939: 35). Moreover, we cannot speak of ends-in-view without considering the means employed to accomplish them and vice versa.

Understanding how intentionality is constituted through action sheds light on D'Adderio's (2014: 23) suggestion that "actors' preferences are rarely stable as often assumed" and highlights that ends-in-view are more flexible, provisional, and dynamic than the literature typically portrays. Such a view also sensitizes us to the idea that intentionality can be highly unpredictable (even to the actors themselves) and might potentially be constituted anew in every routine performance. This understanding might prevent practitioners from blaming routine participants for pursuing personal motives when they are not acting according to espoused goals. Instead, practitioners and scholars alike should turn their attention both to the activities in which people are engaged and to the means which they engage in their actions to understand why and how certain ends are pursued.

***Challenging assumption 2: Intentionality as a phenomenon of the mind.*** By focusing on purposeful action, previous research might have created the misleading impression that intentional action in routines is necessarily motivated by prior mental ideas or goals. For example, Feldman (2000: 624) showed how reflecting on the outcomes of action led routine participants to either change the routine to achieve existing goals (repairing), set themselves new goals for the routine (expanding), or set themselves even higher goals (striving). Similarly, other works (e.g., Bertels, Howard-Grenville, & Pek, 2016; Obstfeld, 2012; Rerup & Feldman, 2011) have focused on how actors initially envision a particular goal and then engage in trial-and-error learning in routine performances to enact these goals. This line of research reveals a more cognitivist explanation of intentionality that relies on reflections in the mind to explain how new intentions emerge.

Notwithstanding the importance of individual and collective reflection in routines (Dittrich et al., 2016), our study allows us to more clearly understand intentionality as a *phenomenon of action*—that is, as something that is dynamically enacted in routine performances instead of envisioned in the mind. In particular, our study highlights how routine participants can develop an emerging sense of purpose from action *without* consciously reflecting on action. In other words, intentions emerge from the engagement with a particular situation and emerging means without necessarily preceding mental representations. In this way, situated action maintains the *illusion of purposeful action*[2] because the actors develop a "purposive" sense of what they ought to do, not by actively reflecting on action but, rather, through the flow of action itself. Mistaking purposive action for purposeful action is problematic insofar as doing so further solidifies the view that actors' minds are the source of intentions. Acknowledging that situated action gives rise to new intentions allows us to uncover the full potential of the creativity of action (Feldman, 2016; Joas, 1996) in routine performances.

## Implications for Understanding Routine Change

In uncovering the full spectrum of intentionality and challenging two key assumptions about intentionality, our study has important implications for understanding the potential for routine change. Ever since publication of the seminal papers on routine dynamics (Feldman, 2000; Feldman & Pentland, 2003), intentionality has been recognized as a key driver for routine change. In particular, prior work notes that actors' orientation toward new goals drives continuous routine change, the formation of completely new patterns of action, and change across multiple routines. Our study extends this research by showing that routine change might similarly be driven by the situational emergence of means that gives rise to new ends-in-view and subsequently different goals for the routine. Thus, on this other end of the spectrum of intentionality, continuous routine change is *not driven by orienting* toward different goals, but updated goals *are the result of* routine change.

***Implication 1.*** Feldman (2000) has shown how actors' orientation toward new goals drives continuous routine change by showing how participants continue to change routines when they set themselves new goals (expanding) or higher goals

[2] We thank one of our reviewers for this observation.

(striving) for the routine. In the context of Figure 2, we may say that Feldman (2000) has developed a model of continuous routine change based on *purposeful action* and *emerging goals*. We extend her findings by identifying an additional mechanism of continuous routine change in which *purposive action* and the *situated emergence of means* lead to continuous change. Thus, both Feldman's (2000) model and our own (Figure 1) can be described as demonstrating *continuous routine change through emerging intentionality.* In Feldman's case, the mechanism is actors' reflection on and updating of goals (*emerging goals*); in our case, it is foregrounding means and conceiving of new ends-in-view (*emerging ends-in-view*).

Emerging intentionality in the form of emerging ends-in-view implies that continuous change results from engaging with the open-endedness and potentiality of *action itself* rather than from solely responding to the *outcomes of action* and *existing goals*. Consequently, performing routines might have an even higher potential for continuous adjustment than Feldman (2000) originally suggested because every action taken to perform a routine holds the potential for expanding—that is, for conceiving of new ends-in-view and for updating the goals for the routine and associated patterns. In other words, routine participants can expand the routine not merely in response to selected outcomes that present new opportunities; rather, every action-situation presents an opportunity for discovering new ends-in-view. Another implication of this expanded view of emerging intentionality is that we can also understand striving in routine dynamics differently. Instead of seeing the continuously changing standard for doing work (Feldman, 2000) as the *reason* for continuous routine change, we might also understand it as *the result of* continuous change—that is, the result of specifying new ends-in-view in performing and developing different goals in patterning.

***Implication 2.*** Several studies have noted how actors' orientation toward a goal drives the formation of completely new patterns of action that are markedly different from existing patterns. For example, Bertels and her colleagues (2016) described how a major oil producer developed a new pattern of operational compliance through actors' active reflection on the company's operational problems and the articulation of a vision (goal) for organizational compliance. Similarly, other studies (e.g., Chen, Pan, & Ouyang, 2014; Obstfeld, 2012) have shown how actors' reflection on organizational problems led to the "projection of a new end state [goal] and the pursuit of that projected end state through emergent action" (Obstfeld, 2012: 1572). In all these studies, the formation of a new pattern of action is initiated and its evolution is *orchestrated* through actors' reflection on and orientation toward particular goals. The assumption appears to be that, without this reflection and goal orientation, a significant departure from existing patterns of action would not be possible. As Obstfeld (2012: 1572) argued, the continuous enactment of existing patterns of actions only leads to "incremental adjustments" at best. Without conscious reflection on evolving patterns of action, routines might even run the danger of drifting haphazardly and unpredictably, oftentimes into an undesirable or even dangerous direction (Ortmann, 2010). In other words, the cautionary tale of routines research is that, without conscious reflection, incrementally adjusting routines might lead to utter chaos.

In contrast, our findings suggest that completely new patterns of action that are coherent—and, in our case, also desirable—can emerge from engaging with the unfolding situation and the situated emergence of means. Routine participants gain a sense for what they ought to do through *acting*—instead of through *reflecting* on and *orienting* toward a particular goal. In other words, the formation of new patterns of action is not rooted in *actors' active reflection on and orchestration of practice* but is more directly *rooted in practice itself*—that is, in how performing routines brings to the fore new means and new ends-in-view. The evolution of these patterns of action might remain unpredictable in the sense that actors do not envision a new end-state, but it is by no means haphazard or without direction. With the notion of progressive means–ends cycles, our study offers an approach for capturing this emergence. Tracing how actions unfold over time and how participants develop a sense of what they ought to do through performing routines can help practitioners and scholars alike to understand surprising or unanticipated changes in routines.

***Implication 3.*** Recent studies have highlighted how actors' orientation toward (new) goals drives change in networks of interdependent routines. For example, Kremser and Schreyögg (2016) showed how actors streamlined the interactions between several production routines toward three particular strategic goals. Deken and her colleagues (2016: 659) showed how actors accomplish novel outcomes and novel actions across several routines by "intentionally striving for novelty." We add to this emerging line of research by identifying the *unfolding situation* and

*emerging ends-in-view* as the way in which change can propagate across several routines. Specifically, the performance of one routine can generate new questions and new assets for the performance of other routines, potentially prompting actors to conceive of new ends-in-view and to update enacted patterns. Instead of actors' projected goals, the unfolding situation that connects several routines drives change within the network of routines. In responding to the unfolding situation, routine participants do more than adjust and flexibly perform routines in light of other routines (e.g., Birnholtz, Cohen, & Hoch, 2007; Spee, Jarzabkowski, & Smets, 2016); they can also engage in new patterns of actions because of the emerging sense of purpose. In other words, we identify emerging ends-in-view as a motor of the "internal dynamics of routine ecologies" (Sele & Grand, 2016: 2).

### Opportunities for Future Research

Our theorizing of intentionality in routine dynamics generates interesting questions for future research. First, the pursuit of goals and ends-in-view is often associated with politics and power (Feldman & Pentland, 2003; Howard-Grenville, 2005). In line with this understanding, our data indicate that power relations can influence which ends-in-view are enacted and which ways of patterning dominate over time. A central assumption in the routines literature is that enacted patterns constitute a truce between otherwise competing parties and conflicting goals (Nelson & Winter, 1982; Zbaracki & Bergen, 2010). Forming a truce that is enacted through routine performances thus presupposes actors with heterogeneous, stable preferences. If, however, ends-in-view can be more flexible, provisional, and dynamic than previously depicted and entirely new ends-in-view might emerge from the situational engagement with means, then the question becomes what constitutes the truce and how is it enacted? Future studies could therefore re-examine the notion of truce in the context of our relational understanding of intentionality and provide a richer, more dynamic understanding of truce in routine dynamics.

Second, theorizing intentionality in relational terms can also help us overcome the conceptualization of routine participants as autonomous, self-motivated individuals, which is "still evident in work on routines" (Feldman, 2016: 32). Although some routine scholars propagate a relational view of the individual (e.g., D'Adderio, 2008, 2011, 2014), most studies continue to fall back on the traditional view that action emerges from a self that is not connected to others (Feldman, 2016). We suggest that one of the reasons for doing so is the taken-for-granted assumption that intentionality is located in the individual. By observing how actors gain a sense of what they ought to do through the flow of interdependent actions, we can start to appreciate how "action in organizational routines is especially bound up in what others do" (Feldman, 2016: 32). Based on a relational view of intentionality, future studies can begin to explore in greater depths how actors emerge as particular selves (D'Adderio, 2014; Feldman, 2016) through pursuing certain ends-in-view in routine performances, and how—similar to the spectrum of intentionality—action in routines can display a *spectrum of social autonomy* (Feldman, 2016).

## CONCLUSION

By drawing on a pragmatist view on action (Joas, 1996), this study develops a fuller and more nuanced view of intentionality as a sense of purpose that is experienced in performing and patterning routine performances. This paper revises three important taken-for-granted assumptions about intentionality in routine dynamics as follows: (1) intentionality is not solely rooted in individual actors but is constituted through action; (2) intentionality is not a phenomenon of the mind, but a phenomenon of situated action; and (3) intentionality does not only drive routine change but can also emerge through routine change. This relational understanding of intentionality in routine dynamics directs the attention of researchers and practitioners toward situated action as a source of intentions, which, in turn, defines the course of action. Instead of seeing "intended [goals] through the other's eyes to accommodate their intended goals" (Deken et al., 2016: 676), this perspective suggests that, to understand intentions, we should turn our attention to people's actions and the means they engage in action. For practice, this view on intentionality in routine dynamics centrally implies that we must intervene in actions rather than in people's cognition to bring about change.

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