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Ever-Changing Routines? Toward a Revised Understanding of Organizational Routines between Rule-Following and Rule-Breaking

Abstract

This paper advances research on the conceptual nature of organizational routines. We examine whether and how routines contribute to organizational stability, renewal, or change. We review the "routine as change" perspective and find several important shortcomings. To mitigate some of the conceptual problems of this perspective, we develop a rule-based understanding of routines that focuses on rule-following and rule-breaking. Our model of routines clarifies the primarily organizational nature of routines. We conceptualize ways in which organizations may react to a violation of their rules and argue that it is the subtle relation between rule-following and rule-breaking that drives routine dynamics.

JEL Classification: M10.

Keywords: Organizational Change; Routines; Rule-Breaking.

1 Introduction

Organizational routines are commonly understood to be a central element of organizations and a fundamental mechanism for coordinating work therein (Feldman and Pentland (2003); March and Simon (1958); Cyert and March (1963); Cohen, Burkhart, Dosi, Egidi, Marengo, Warglien, and Winter (1996); Ortmann (2010)). The conceptual and empirical nature of organizational routines is currently much discussed in organization and management studies. The concept of routines is the subject of many debates that examine organizational stability and change (Feldman and Pentland (2003); Pentland, Haerem, and Hillison (2011)), organizational capabilities and dynamic capabilities (Schreyögg and Kliesch-Eberl (2007); Eisenhardt and Martin (2000); Winter (2003); Teece (2007)), the discourse on organizational learning (Levitt and March (1988); Co-

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hen (1991); Huber (1991)), inertia and path dependence (Hannan and Freeman (1984); Schreyögg and Sydow (2010); Sydow, Schreyögg, and Koch (2009)), the implementation and use of software (Orlikowski (2007); Orlikowski and Scott (2008)), as well as on the emergence of strategic patterns (Koch (2011)). Despite the widely acknowledged importance of routines for organizational functioning, the conceptual nature of routines is still insufficiently explored (Becker (2005)). Common conceptualizations range from routines as stable, repetitive, standard operating procedures (SOPs) (March and Simon (1958); Cyert and March (1963)) to routines as the sources of organizational flexibility and change (Feldman (2000); Feldman and Pentland (2003); Howard-Grenville (2005); Pentland and Rueter (1994); Rerup and Feldman (2011); Turner and Rindova (2012)).

The first perspective focuses primarily on the organizational elements of routines by emphasizing efficiency, predictability, and stability. The second, 'routine as change' perspective interprets routines through the lens of the performing actors and their ability to enact routines in multiple ways. Consequently, various researchers tried to better clarify the conditions under which routines are sources of stability or change: Pentland and Rueter (1994) compare routines to the logic of grammar, suggesting that although routines follow particular patterns, they also enable a variety of actions. Howard-Grenville (2005) suggests that the context in which routines are embedded is an important variable that can drive change or flexibility in routines. Rerup and Feldman (2011) explore the role of trial-and-error learning in changing organizational routines from one iteration to the next.

In this paper we review the current conceptualization of organizational routines. We show that the dominant practice-based understanding of organizational routines developed by Feldman (2000) and Feldman and Pentland (2003) provides important insights into the functioning of routines, but also suffers from conceptual shortcomings that should be addressed. Our discussion shows that this practice-based perspective sees routines as continuously changing entities. Here, the primary focus is on the individual actor who performs the routine and who, in the course of this ongoing performance, continuously changes the routine. We, however, argue that organizational routines are not ever-changing but instead, because of their inherently organizational nature, are built on stable rules. Furthermore, we argue that if we think of routines as the source of continuous change in organizations (Feldman (2000)), then the important distinction in organizational analysis between micro and macro change erodes. In addition we make the point that the critical distinction between formal and informal structure, which allows an understanding of organizational phenomena such as organizational culture (Schein (1996); Alvesson (1989)) or political games (Burns (1961)), should be integrated into a conceptualization of organizational routines.

We develop a framework of routines that stresses their organizational, rather than individual, nature, thereby making it possible for us to shed new light on routine stability, flexibility, and change. We distinguish between routines and rules and note four salient characteristics of rules: first, that a rule represents a normative behavioral expectation;

second, that rules remain in place even if they are violated; third, that rules entail sanctioning power; and fourth, that rules are somewhat abstract, general in character, and thus cannot be merely applied. As a result, rules leave a varying degree of scope for interpretation. Following this understanding, organizational routines comprise rules as their basic building blocks, the interpretation of these rules in the context of an organizational framework, and the actual observable performance pattern. Such a rule-based model of organizational routines clarifies the primarily organizational nature of routines and their relation to the performing actors. Furthermore, the model sheds new light on routine dynamics by presenting three different possibilities of how organizations may respond to a violation of their rules: purposely not changing the routine despite the deviation from prescribed rules; a process of reflexive, double-loop learning that initiates change in the rules; an evolutionary drift of routines. We argue that it is this subtle relation between rule-following and rule-breaking that drives the dynamics of routines, and that as a result, routines are not ever-changing.

The paper proceeds as follows. In Section 2, we review the current debate about the nature of organizational routines and their relation to stability, flexibility, and change. In Section 3 we discuss the practice-based understanding of organizational routines and uncover some of its important shortcomings. In Section 4, we develop a revised understanding of organizational routines that focuses on the nature of organizational rules and the ways they are enacted in organizations.

2 Organizational Routines: Between Stability and Change

In recent years, there has been a dramatic shift in the understanding of routines and their role in organizations. The current debate about organizational routines examines the question of whether and how routines contribute to organizational stability and/or change (for a more detailed review see Geiger and Koch (2008)). The idea that routines are not only the source of stability and efficiency in organizations, but also the drivers of endogenous change has shifted the debate tremendously, both in terms of the underlying concept of routines and in terms of the consequences to our understanding of organizational change.

2.1 Routines as Performance Program

Traditionally, routines are seen as a source of stability in organizations and are designed to provide generalized solutions to recurring problems (Cyert and March (1963); March and Simon (1958); Ashforth and Fried (1988)). The basic idea behind this conception is that organizations respond to recurring tasks in predefined ways. By allowing actors to respond to ex-ante defined tasks in ways that are also ex-ante defined, routines operate in a quasi-automatic manner and are therefore seen as the source of efficiency. Accordingly, routines are: "…repeated patterns of behavior that are bound by rules and customs and

that do not change very much from one iteration to another" (Feldman (2000, 611)). From this perspective, routines are routines because they do not change, but instead provide automatic and mindless responses to stimuli defined ex ante, and through their application lead to a predetermined result. Thus, routines ensure efficiency, legitimacy, accountability, and reliability in organizations. Although research highlights this functional aspect of routines, a related stream of research points to the potentially dark side of mindless and routinized behavior. This research notes a number of potential problems, such as routines becoming sources of inertia (Hannan and Freeman (1984)), co-evolutionary lock-ins (Burgelman (2002); Sydow, Schreyögg, and Koch (2009)), inflexibility (Gersick and Hackman (1990)), and mindlessness (Ashforth and Fried (1988); Langer, Blank, and Chanowitz (1978)).

2.2 Routines to Change Routines

Because of this problematic aspect of organizational routines, current research is concerned with the question of how to inject flexibility into routinized organizations (Davis, Eisenhardt, and Bingham (2009)). For example, Nelson and Winter (1982) and Winter (2003) develop an evolutionary understanding of organizational routines that distinguishes between two types of routines, each of which fulfills different functions within organizations. The first type, operating routines, is the foundation of efficiency and stability. The second type, higher-order routines, provides the basis for learning and change (Nelson and Winter (1982)). Operating routines represent the genes of an organization and, just like the genetic code of humans, are imprints of the general behavior of organizations. Winter (2003) sees higher-order routines as "routines to change routines". Nelson and Winter (1982) design a set of higher-order routines to continuously review the underlying patterns of an organization by asking if the routines still do what they should. Thus, a double-loop learning process (Argyris (1976)) is initiated and because this process is recurring, it has the characteristic of a routine. Interestingly, a deviation from a given routine is regulated by another routine. This observation points to a dramatic shift in the concept of routines in organizations. Routines not only provide procedures for managing regularities, but also for managing deviations.

2.3 Routines as Sources of Continuous Change

In recent years the debate on routines has been completely transformed as a result of the rise of the practice-based perspective on organizational routines (Parmigiani and Howard-Grenville (2011)). This position, first introduced and popularized by Feldman (2000) and Feldman and Pentland (2003), presents a new distinction in research on routines that differentiates between the general idea (the ostensive aspect) of routines and the enactment of these routines (the performative aspect). A practice-based perspective views routines not only from their abstract and structural dimension, but also asks how these abstract patterns are actually enacted and performed in practice: "The ostensive aspect is

the ideal or schematic form of a routine. It is the abstract, generalized idea of the routine, or the routine in principle. The performative aspect of the routine consists of specific actions, by specific people, in specific places and times. It is the routine in practice. Both of these aspects are necessary for an organizational routine to exist." (Feldman and Pentland (2003, 101)). Such a practice-based understanding of organizational routines (Feldman and Orlikowski (2011)) shifts the focus to routines as performances. Of interest here is how the individual actor performs the actual routine. Routines are no longer abstract principles that prescribe behavior, but instead are at the same time both rules and the performance of rules.

In her study of student housing, Feldman (2000) analyzes five different routines, e.g., the allocation of students to dormitories, with a specific focus on how these routines are performed. Her analysis shows that each routine changed markedly from year to year, mainly because the administrators who performed the routines were dissatisfied with the results and therefore amended the routines the following year (Feldman (2000)). According to Feldman and Pentland (2003), actors use, and make reference to, the ostensive abstract aspect of routines in their performance, but in performing the routine they simultaneously create new ostensive patterns that build the template for subsequent performances. Therefore, the ostensive and performative aspects of routines are analytically distinct, but at the same time they are – borrowing from Gidden's (1984) idea of structuration – mutually constitutive of each other. The ostensive and performative aspects of routines are recursively interrelated in the sense of being dualities, rather than dualisms (Farjoun (2010)). Each aspect is constitutive of the other, and it is only by considering both together that we can reach the necessary and sufficient condition for understanding routines (Pentland et al. (2011); Feldman and Pentland (2003)).

Such a conceptualization of routines implies, following Feldman (2000), that routines are the source of continuous endogenous change in organizations. Actors continuously change patterns in the performance of a routine and each new performance gives rise to new ostensive aspects of the routine; hence, continuous change is the logical result. Pentland and his colleagues investigate invoice processing, which may initially appear to be a mindless routine that follows a simple stimulus response logic (Pentland, Haerem, and Hillison (2010, 2011)). However, a closer look at the way actors used software and other artifacts to correctly process invoices revealed that not a single invoice was processed in a similar manner. Actors continuously engaged in an almost unlimited variety of different performances of what was believed to be the same routine (Pentland et al. (2010, 2011)).

3 Routines as Ever-Changing: A Critical Review

A practice-based understanding of organizational routines certainly has its merits, particularly in terms of its useful differentiation between the ostensive and performative aspects of routines. However, it suffers from some conceptual shortcomings that may be problematic for our understanding of change in organizations.

3.1 Underestimating the Influence of Rules and Structure

One of the most fundamental difficulties of a practice-based understanding of organizational routines is its underestimation of the influence of rules and structure on the performance of routines. Practice-based approaches rightly stress that organizational rules are not action and do not adequately describe organizations and their performances. Therefore, the practice-perspective has significantly improved our understanding of the everyday life of organizations and the way that norms and practices become habitualized and institutionalized (Gherardi and Perrotta (2011); Feldman and Orlikowski (2011)). However, such an understanding fails to systematically consider the influence of rules and structure on routine performance, given that routines usually have their origins in rules and structures (March, Schulz, and Zhou (2000); March and Simon (1958); Beck and Kieser (2003); Luhmann (1995)). In these concepts, rules are viewed as artifacts that enable and constrain the performance of routines (Pentland and Feldman (2008); D'Adderio (2008); D'Adderio (2011)). Artifacts are somewhat arbitrary concepts that cover rules, schedules, and standard operating procedures (Turner and Rindova (2012)), but also machinery, tools, roadmaps, communication technologies (Nicolini (2011); Nicolini, Mengis, and Swan (2012); Orlikowski and Scott (2008)) and so on. Artifacts are meant to enable action, because they provide members of an organization with necessary tools, but such tools also constrain action because they limit the scope of possibilities and thus evoke a degree of consistency (Turner and Rindova (2012)). The question arises whether a tool such as a hammer, which is used for performing a particular routine, has the same conceptual status as a rule, which has been purposely designed for a particular context and which offers the possibility of sanctioning deviant behavior (Reynaud (2005)). In most cases artifacts are seen as the "material" within routines (D'Adderio (2011)). However, organizational rules do not usually have material qualities, and even in circumstances where such qualities are manifested in written form, this form is not their distinguishing quality.

3.2 Overstating the Influence of Individual Actors

A closer look at the practice-based understanding of organizational routines reveals that individual actors play a central role in this understanding. It is the ability of individual actors to enact organizational routines that results in new ways of performing a task, which in turn creates new ostensive understandings. Seen this way, organizational change is solely the result of individual choices on how to perform an organizational routine. Both the conceptual and the theoretical root of this perspective build on a methodological individualism. In ethnographic studies conducted under this umbrella, the focal point of interest is always the individual actor and her/his actions. The organizational dimension is sometimes taken into consideration in the form of context (Howard-Grenville (2005)) or artifacts (Turner and Rindova (2012)), but a systematic theoretical outline of both the relationship between individual performance and organizational context/artifact, and the consequences of this relationship are missing (Dionysiou and Tsoukas (2013)). By center-

ing its analysis on the role of the individual actor, the practice-based perspective blinds itself to the organizational dimension and cannot adequately address how organizational phenomena influence organizational change. This change in perspectives is remarkable for two key reasons.

First, the philosophical roots of practice theory are not particularly close to methodological individualism, and sometimes practice theory is even used deliberately to argue against methodological individualism (Geiger (2009)). Thus, from a sociological perspective, practices refer to social constructs that have emerged over time and that reflect, sustain, and reproduce shared norms, values, and knowledge (Foucault (1973)). According to this view, practices are means of institutionalizing what can and cannot be said and accepted within a society or group, and thus they order the social world (Bourdieu (1972)). This normative and institutionalizing dimension is central in sociological studies of organizational practices (Gherardi (2006)). Therefore, practices are normative constructs that on the one hand define the norms of a particular organization or group, and on the other hand reproduce these norms through ongoing practices: "…actors share a practice if their actions are appropriately regarded as answerable to norms of correct or incorrect practice" (Rouse (2001, 190)). Practice-based studies in this vein emphasize that it is imperative not to study the individuals in isolation, but instead to understand the social context in which they are embedded. Practices are collective action patterns and therefore cannot be viewed exclusively from an individual perspective (Gherardi (2006)).

Second, a viewpoint that centers on the individual actor as the only source of change or stability cannot integrate organizational factors that influence change, such as structural inertia (Hannan and Freeman (1984)), path dependence (Koch (2008); Schreyögg and Sydow (2011); Sydow, Schreyögg, and Koch (2009)) and simplicity cycling (Miller (1993)). All these concepts locate the source of stability in organizational mechanisms and explain why organizations remain stable despite individual efforts to bring about change. Concepts such as path dependence (Sydow, Schreyögg, and Koch (2009)) stress the persistence of organizational structures and rules in locked-in states that cannot be easily changed by individual efforts. Similarly, (neo-)institutional approaches (Walgenbach (2002); Tempel and Walgenbach (2012)) point to the stabilizing effects of institutions that are beyond the control of individual actors and thus cannot be changed through individual initiatives. As a consequence, the practice-based concept of organizational routines cannot easily incorporate these important insights, because it cannot explain organizational stability despite variations in individual performance. A theory of routine change must be able to explain both individual and organizational motivations for renewal and resistance.

3.3 Overstating Micro-Dynamics over Macro-Changes

Another distinction that is key to an explanation of organizational change, and one which cannot easily be integrated into a practice-based understanding of organizational routines,

is the difference between continuous micro-change and frame-breaking discontinuous change (Weick and Quinn (2011); Weick (2011)). Following the practice perspective, change is a product of continuous micro changes. Consequently, this perspective can only conceptualize change as a process that follows a trial-and-error logic (Rerup and Feldman (2011)) under which, if their performance falls short of a given task, then practitioners act differently in the next iteration of a routine. Change is emergent; new routines simply develop. It is certainly a merit of the practice perspective that it first integrates learning into our understanding of organizational routines and second it demonstrates that routines can change in an emergent, unplanned fashion. However, visualizing routine change in this way is problematic from at least two perspectives.

First, such an understanding of routine change cannot – at least not systematically – account for the difference between more radical, frame-breaking change and the emergent micro-changes that result from smaller variations in performance. On the contrary, researchers at least implicitly assume that the impetus for organizational change stems from the micro-dynamics of ongoing organizational routines (Feldman (2000)). However, the question still remains, if a small change in the performance of a routine has the potential to result in frame-breaking change. Imagine, for example, the routine of brushing teeth. Most people probably brush their teeth at least twice a day by taking the brush, putting toothpaste on it, and then starting to brush. Observing this routine through a micro-lens we would certainly register small changes in the way the teeth are brushed from one iteration to the next. One day the person might start from the left side and the next day from the right side, sometimes brush faster than at other times, and so on. But concluding that these micro-changes lead to a frame-breaking change in the overall tooth-brushing routine is certainly problematic, both empirically and conceptually. This is a question that hinges on what the perspective is. If we look closely enough at the details, we are almost certain to observe small changes everywhere. But these changes might not be significant in the overall functioning of the routine, and the underlying patterns and structures may remain stable despite variations between performances. (Neo-)Institutional theory demonstrates the stability of normative patterns even in the light of micro-dynamics, which are often not strong or substantial enough to bring about change in the overall structure (Tempel and Walgenbach (2012); Meyer and Rowan (1977)). Hence, the routine as practice perspective circumvents the distinction between frame-breaking and small, evolutionary changes (Tushman, Newman, and Romanelli (1986)). However, this distinction is important for understanding organizational change.

Second, an understanding of organizational change that is based exclusively on the performance of routines cannot recognize the fundamental difference between single- and double-loop learning (Argyris (1976)). Double-loop learning describes a process of reflection and insight that is not necessarily based on performance, but does also involve intellectual reasoning and discursive struggle (Geiger and Antonacopoulou (2009); Geiger (2010); Winter (2003)). Current practice-based studies of organizational routines see routines as the source of trial-and-error learning (Rerup and Feldman (2011)). But organizations cannot and do not rely exclusively on trial-and-error learning, as a multiplicity

of studies have shown (March (1991), Argyris (1990), Raisch, Birkinshaw, Probst and Tushman (2009), Kieser and Koch (2008), Geiger (2010)).

4 Rules as Building Blocks of Organizational Routines

To conceptualize the organizational dimension of routines we suggest reintroducing the differentiation between rules and routines into the routine debate (Cohen and Bacdayan (1994); Koch (2004)). Although most routine studies, including practice-based approaches, acknowledge the difference between standard operating procedures and routines, they usually fail to adequately conceptualize the role of these SOPs.

An organizational rule (such as a SOP) is first and foremost a normative behavioral expectation (Luhmann (1995)). Rules are essential for modern organizations (Weber (1978); March, Schulz, and Zhou (2000)): they define hierarchies, jobs, rewards, and work processes (Kieser and Koch (2008, 330)), and are even constitutive for the organization itself, representing on a general level the specific identity of the organization (Luhmann (1995); Schreyögg and Sydow (2010)). By defining behavioral expectations in the form of rules, organizations create and maintain their self-referential boundaries, thereby transforming the high level of complexity of the outside environment into meaningful patterns of lower complexity inside the organization (Seidl (2005)). Hence, rules are critical to the existence of organizations at large; without at least a minimum number of rules, organizations would lose their defining characteristics (Schreyögg and Sydow (2010)). Thus it is important to note that these normative expectations define the collective identity of an organization; therefore, they are by their very nature collective constructs.

Second, to construct and maintain the boundary of an organization, rules must be programmed in a contra-factually stable way (Luhmann (1995)). Contra-factual stability means that even in cases in which organizational members do not follow particular rules and thus might violate a behavioral expectation, the expectation itself still remains in place. If each and every stimulus would lead to a change in organizational rules, then organizations would eventually lose their boundary with the outside environment. As a consequence, the organization would no longer exist as a unique, identifiable entity (Luhmann (1995)). The contra-factual stability of rules is an indispensable feature of any organization.

A third characteristic of rules is that they entail sanctioning power, which means that violations of rules can be sanctioned within organizations. Being a member of a particular organization implies that the individual obeys the formal rules and at the same time accepts possible sanctions in cases of violation. Seen this way, the existence of formal rules over time can be ensured through the possibility of sanctioning misbehavior.

A fourth characteristic of rules is that they have to be somewhat general in character. Rules are necessarily abstract and generalized normative expectations, so it is impossible

to follow them precisely. Hence, the possibility of deviating from a generalized rule is a necessary requirement for the successful functioning of that rule (Ortmann (2010)). Therefore Ortmann (2010, 206), in reference to Wittgenstein (1958), sees rules as signposts; they indicate the direction, but they are not the path. Rules as abstract principles must of necessity leave a varying degree of scope for interpretation. Without this degree of flexibility in their interpretation, it would not be possible to adapt rules to specific situations.

Following the understanding of rules as behavioral expectations outlined above enables us to better explain the interrelationship between rules and routines. In practice, actors act in response and in relation to behavioral expectations. And as discussed above, organizational members must interpret rules in order to make the rules applicable to specific situations. Therefore, the interpretation of rules is an indispensable mechanism in the application of organizational rules; it is the interpretation of the rules that ultimately guides the performance of routines.

It is important to keep the performance of organizational rules conceptually distinct from the interpretation of organizational rules, because these two concepts have different consequences for our understanding of routine functioning. Rules as behavioral expectations are certainly different from material artifacts. Rules entail sanctioning power, which is not the case with artifacts. If, for example, a hammer is used in a different way than anticipated by the constructor, it is not the hammer that has sanctioning power, but the underlying rule on how a hammer should or should not be used. Further, because they are contra-factually stable, rules are also different from the ostensive aspect of routines. In cases in which the performance differs from the underlying rule, the rule is usually not changed. This is the case with the ostensive aspect of routines in Pentland and Feldman's (2003) framework. To understand the complex functioning of routines in organizations, we must be able to understand these conceptual differences.

Accordingly, we refer to organizational routines as collective performance patterns that are enacted on the basis of rules and their situation-specific interpretation. Seen this way, rules are the building blocks of organizational routines, the interpretation of rules is a form of sensemaking (Weick (1995)), and performance is the observable outcome of this interpretation of rules. Therefore, the performance of organizational routines operates between behavioral expectations, its interpretation, and organizational responses to observable performances.

5 Reintroducing the Organizational Dimension: Towards a Rule-Based Understanding of Organizational Routines

An understanding of routines based on rules and rule-following shifts the perspective to the collective character of routines.

5.1 The Collective Character of Organizational Routines

Our approach suggests that routines are comprised of rules that serve as the routines' building blocks, and that these rules are collective in nature. The organizational rules that constitute routines are the result of collective processes of institutionalization and negotiation and represent the provisional answer to ongoing contestations (March, Schulz, and Zhou (2000, 186)). Not only are rules collective entities, but their interpretation is also a collective endeavor. To be meaningfully enacted, organizational rules must be based on shared, collective understandings of underlying norms. Hence, organizational rules cannot be reduced or traced back to single individuals; they become meaningful only if they are collectively interpreted as rules. Individuals rely on shared rules and frames of interpretation to be able to act in organizations (Luhmann (1995)). In their study of the coordination of highly interrelated tasks on aircraft carriers, Weick and Roberts (1993) stress the importance of what they label as "heedful interrelation", which they define as an important mechanism for the meaningful enactment of organizational routines. The idea of heedful interrelation comes close to our understanding of the interpretation of organizational rules in a process of collective sensemaking.

The introduction of the concept of sensemaking (Weick (1995)) to our approach to routines shifts the focus from individual performance to the collective construction of rules and their shared interpretation. Notably, the collective nature of rules becomes apparent and public in cases where their performance is disrupted because of a deviation from the shared interpretation of the rules (Edmondson, Bohmer, and Pisano (2001); Zbaracki and Bergen (2010)).

5.2 Routine Change: Between Rule-Following and Rule-Breaking

In Feldman's (2000) view, routines are the source of continuous change because actors constantly perform in new ways which results in new ostensive aspects of routines. A rule-based understanding of routines helps us to problematize this view. Through this rule-based lens, an actor who deviates from an organizational rule first of all violates the organization's expectation of how that person should act (Luhmann (1995)). As a result, the pertinent question becomes how, as a social system (Luhmann (1995)), the organization responds to the violation of the rule. From an organization's point of view, there are three distinct ways to react to a violation of existing rules: the violation may be deemed unacceptable and the actor's deviation is sanctioned; the violation may be seen as an important impetus for learning, and as a result, the organizational rule is changed; the violation may be overlooked, either consciously or subconsciously, thereby leading to an evolutionary drift of routines. When an individual actor applies new interpretations of the rules that differ from the collectively accepted interpretations, then that actor breaks organizational expectations and his/her performance deviates from those expectations. Although the violation is hidden on the level of individual interpretation, it becomes visible on a performative level.

We define the three distinct organizational reactions to rule violation thus:

First, in cases in which a violation of the rule is both publicly observed and perceived as unacceptable within an organization, rule-breaking is sanctioned. The rule is thereby reinforced and violation is actively discouraged, and the contra-factual nature of the rule is reinforced (Luhmann (1995)). Thereby the original rule remains valid despite having been factually violated and despite the disrupted performance. In this way the routine remains unchanged and its future operation is ensured by the rejection of rule-breaking performances. Thus, rules amount to authoritative texts which are privileged behavioral expectations over deviating performances (Kuhn and Ashcraft (2003)). In these cases, new performances do not lead to the change of routines as posited by Feldman (2000).

Second, in contrast to treating violations as unacceptable deviations, organizations may respond flexibly to violations and actively adopt them. In these cases, the violation is seen as a valid response to new circumstances. The validity of the existing rule is called into question and as a result the rule might be changed. Such a reflective questioning of existing rules and the resulting re-creation and renewal comes close to concepts such as double-loop learning (Argyris (1976)) and reflective practice (Geiger (2009); Keevers and Treleaven (2011)).

It is very important to note the conceptual difference between a onetime change in a routine that occurs during its performance and a change that results from the revision of underlying rules. Although the practice of a routine happens on an action level, the discussion of the underlying rule that guides the performance of a routine takes place on a reflective level and is abstract from the concrete action (Habermas (1984)). The distinction between a practice mode and a reflective mode of argumentation is of fundamental importance for an adequate understanding of processes of learning and knowledge generation (Schreyögg and Geiger (2007)).

Furthermore, distinguishing between rules and routines in organizational learning makes it possible for us to connect ideas from practice-based studies with insights from the behavioral theory of the firm (Cyert and March (1963); March and Simon (1958); March and Olsen (1976); Gavetti, Greve, Levinthal, and Ocasio (2012)). This behavioral approach has a long-standing interest in how organizational rules are changed as a result of learning processes, and from its beginnings has emphasized that organizational learning means changing organizational rules (Cyert and March (1963)). Following this notion, organizations learn in case they change organizational rules as a result of deviations between expected and actual performance (Kieser and Koch (2008)). Therefore, changing a rule requires a process of questioning the appropriateness of prior rule-based behavior, making choices between alternative possibilities, and collecting, interpreting, and transforming feedback on performance to enable the reformulation rules with the intention of improving organizational behaviour (March, Schulz, and Zhou (2000); Kieser and Koch (2008); March and Olsen (1976)). Most importantly, such a perspective enables us to take into consideration the political and contested nature of organizational learning and

change (Argyris (1990); March (1994)), an issue that has so far been neglected in practice-based perspectives. Theories of organizational learning have always emphasized that learning and change is likely to be resisted by organizational members (Argyris (1990)), and may be perpetuated by structural characteristics such as inertia and superstitious learning (March (1994)).

Following this line of thought, change in routines can result from deliberate rule changes. A change in an underlying rule can significantly affect the performance of a routine. Prior research shows that small changes in the wording of a formal rule have the power to include or exclude organizational members from engaging in specific routines (Beck (2001)). However, it is also important to note that a change in the formal rules that results from organizational learning does not necessarily lead to a change in organizational routines. Practice-based studies of learning and knowing in organizations have convincingly argued that a change of formal rules does not necessarily result in a change of organizational practices (Gherardi (2006), Gherardi and Nicolini (2002)). The change of formal structures can be ignored or perceived as insignificant or organizational members may just not change their interpretation of the rule despite its formal change (Gherardi, Nicolini, and Strati (2007)).

A third possibility is that rule-breaking is merely overlooked. This overlooking may take place either on purpose, in the sense of being tolerated, or unintentionally, when violations are so small in scale that they are not noticed over time. Ortmann (2010) introduces the concept of drift to describe this phenomenon.

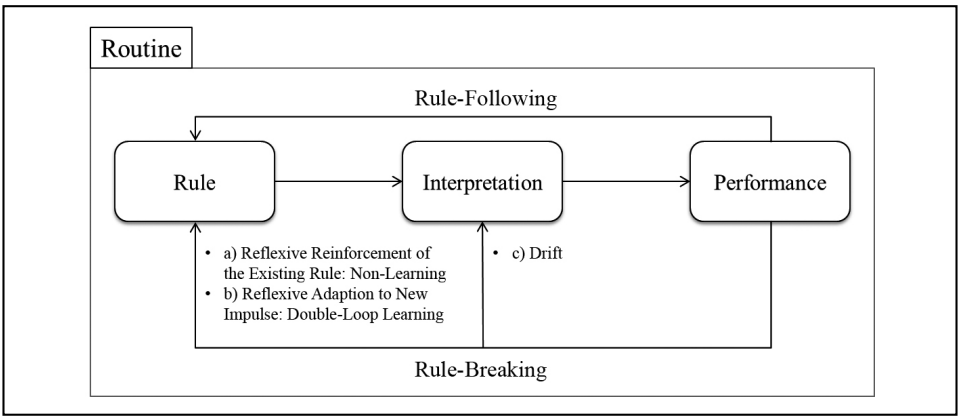
From a rule-breaking point of view, the first possible response (purposely ignoring a rule-break) refers to a paradox in routine functioning. Luhmann (1995) introduces the concept of "useable illegality" to capture these circumstances. Luhmann (1995) argues that the organization perceives the deviation from the rule as usable, since it allows the actor to accomplish the task at hand, but the action is also illegal, since it violates the underlying rule. Hence, maintaining the distinction between rule and interpretation opens avenues for a better understanding of issues such as power plays and political games (Burns (1961)), or the deliberate decoupling of formal institutional rules and the informal enactment of those rules (Meyer and Rowan (1977)). In cases of decoupling, organizations change their formal rules in response to institutional expectations, but, as numerous examples devoted to the adaptation of industry standards have shown (Beck and Walgenbach (2003, 2005)), the actual organizational routines may remain unchanged. However, the practice-based approach of understanding rules as artifacts does not allow for an explanation of this phenomenon of decoupling. In contrast to Feldman and Pentland (2003), a deviation in performance does not result in a changed general routine, since the underlying rule remains unchanged.

Another possible response (a drift that goes unnoticed) occurs when the deviations are so small in scale and/or appear over such a long time period that the difference in performance (i.e., the breaking of the rule) is simply not recognized. This gradual change in performance leads to gradual changes in the interpretation of the rule. In this case, the

deviation is either not visible or not publicly recognized. Therefore, the small or slow rule-breaking events are not perceived as either usable or illegal, they simply occur. Such gradual shifts in the interpretation of the rule results in a gradual, unnoticed change of the overall routine. As noted by Ortmann (2010), such a drift is a potentially dangerous process, since the emergent change of routines might result in irreversible, path dependent patterns (Sydow, Schreyögg, and Koch (2009)). When the organization's members do eventually perceive the change in the routine, it may be too late to reverse this emergent process (Ortmann (2010)). In contrast to changes of routines that happen as a result of a learning process, in the case of drift, the changes simply emerge without any reflection.

Figure 1 presents our model of routines and the way it sheds new light on routine dynamics. Case a) illustrates the possibility that rules are reinforced and as a result the routine remains stable. Case b) describes the possibility that rules are deliberately changed in the sense of double-loop learning. Case c) refers to a drift of the overall routine.

Figure 1: Routine Change: Between Rule-Following and Rule-Breaking



5.3 Mindfulness and Reflexive Stability of Routines

Our rule-based understanding of organizational routines confirms research that suggests that routines are not mindless processes (Feldman (2000)). Following our model, rules need to be interpreted in order to become enacted. This necessary first step of interpretation takes place on the basis of shared knowledge; the goal is to arrive at collectively agreed performances. The second step involves perceiving and questioning deviations from the rules and again relies on organizational frames. These two steps show that routines are by no means mindless, but necessarily involve mindful interpretation. These interpretations stem not only from prior experience of previous iterations, but also from formal expectations. Eventually they become habitual and quasi objective in character (Tripsas and

Gavetti (2000); Berger and Luckmann (1966)). From the outside, such a routine performance may appear to be mindless, since the frames are tacitly applied. However, from the 'inside', an act of interpretation based on existing, shared knowledge is still taking place. Nevertheless, being mindful should not be equated with reflection. As research on inertia and path dependence shows, the mindful application of existing rules in response to positive reinforcing feedback can lead to mindful inert states (Geiger and Antonacopoulou (2009)). Alternatively, interpretative frames can be questioned explicitly. This reflexivity can either lead to new rules, or it can reconfirm the suitability of existing rules, thus leading to what Farjoun (2010) calls "reflexive stability". Farjoun defines "reflexive stability" as those circumstances in which, after explicit reflection, the existing rule is reconfirmed and potential deviations are not accepted. Rules remain contra-factually stable, not as a result of blind repetition, but as a result of explicit, mindful problematization.

Table 1 provides a summary and comparison of the different conceptualizations of routines discussed in the paper.

Table 1: Summary and Comparison of the Four Routine Concepts

	Traditional Understanding (March/Simon/ Cyert)	Evolutionary Perspective (Winter/Nelson)	Practice-Based Perspective (Feldman/Pentland)	Rule-Based Approach (Geiger/Schröder)
Central Aspects	■ Ex-ante defined response to stimulus	■ Lower-order decision rule (operation rules) ■ Higher-order decision rule (rules to change lower-order rules)	■ Ostensive (the idea of a routine) ■ Performative (the actual enactment of a routine) ■ Artifacts (general physical settings or instruments that take different forms from written rules and procedures)	■ Rules (normative behavioral expectations) ■ Interpretation (based on a shared, collective understanding of the underlying norms) ■ Performances (specific actions taken by specific people)
Explanation/ Foundation	■ Stable and reliable decision processes	■ Evolution and change of organizational capabilities	■ Processual explanation of routines	■ Interplay between contra-factual stability and change
Learning Mechanism	■ Single- and double-loop learning	■ Double-loop learning	■ Trial-and-error learning	■ Single- and double-loop learning
Driver of Change	■ New stimulus	■ Reflective process	■ Individual action	■ Organizational reflection
Conceptualization of Formal Rules	■ Routines as explicit formal rules	■ Partly explicit formal rules, partly tacit	■ Formal rules as artifact	■ Formal rules as contra-factually stable behavioral expectation

6 Conclusion

Our paper advances a rule-based understanding of organizational routines. Our goal is to enrich the current debate on routine stability and change in organizational studies. We argue that differentiating between rule-following and rule-breaking provides a richer framework for the understanding of routines than does the dominant practice-based concept, which views routines as ever-changing.

Differentiating between rules, interpretations, and actual performances as different elements of organizational routines makes it possible for us to shed new light on routine dynamics. First and foremost, it shows that rules are the contra-factually stable building blocks of organizational routines, so routines are by no means ever-changing. Conceptualizing routines as ever-changing conveys a misleading picture of change in organizations. Routines are inherently organizational in nature and are comprised of organizational rules. Routine change is not a result of individual choices and actions, but instead depends on organizational responses to individual deviations. Second, our model points to the important dimension of interpretation and sensemaking and shows that organizational routines are enacted through an interpretative act of sensemaking. Third, our understanding sheds new light on routine deviations and learning, since it enables us to take into account both organizational and individual mechanisms. We argue that the subtle relation between rule-following and rule-breaking is the mechanism that drives routine dynamics. Integrating the organizational dimension of rules into our understanding of routines has the potential to enrich the ostensive-performative framework developed by Feldman and Pentland (2003).

This rule-based model may open up new avenues for future research. First, we have shown that routines may remain contra-factually stable due to the organizational character of their underlying rules. Nevertheless, some studies (Turner and Rindova (2012); Pentland and Rueter (1994); Pentland et al. (2010, 2011); Rerup and Feldman (2011)) argue that routines can exhibit flexible performances. Therefore, future research might perform an explorative and qualitative investigation of the situations in which routines are stable or flexible.

Second, our rule-based model stresses the importance of organizational rules. Since there is still considerable interest in the question of whether routines contribute to stability or flexibility (Farjoun (2010); Turner and Rindova (2012)), the role of rules in this context should be explored. In particular, further research should establish what kind of rules create and maintain flexibility or stability. Additionally, further research could explore whether different types of rules have different implications for the performance of routines. As we have suggested, a certain degree of rule-breaking may be necessary for the enactment of rules in specific situations. Therefore, it would be interesting to explore whether certain types of rules allow for more variety in their performance than others.

Third, the interpretation of rules and the emergence of interpretative patterns need further exploration. Indeed, the question of how a shared interpretation of rules becomes established, maintained, and adopted by new members is of interest (Howard-Grenville (2005)). Empirical studies that aim to understand how organizational routines emerge and are learned would be valuable.

Fourth, our paper focuses on the endogenous mechanisms of routines. However, the influence of external shocks and disruptions on rules and their interpretation should be further analyzed. Research could examine how, for the sake of enabling resilience, rules may be discarded in exceptional circumstances.

Fifth, to provide a deeper understanding it would be valuable to explore the role of routines in managing the unexpected, and how rules adopt and become used in novel circumstances.

Sixth, research has started to unravel whether and how organizations can replicate routines (Friesl and Larty (2013); Winter and Szulanski (2001); Bechky (2003)). In line with this research it would be particularly important to analyze how rules become transferred to a new setting, and how their interpretation is changed and adjusted to fit different settings so as to replicate routine performances. Empirical studies on the dynamics of routines could profit from the rule-based framework elaborated above and help to provide new insights into the nature of organizational routines.

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