ON THE NATURE AND RELATIONSHIP OF ROUTINES, CAPABILITIES AND KNOWLDEGE: AN ACTION-BASED APPROACH

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Abstract
Much of recent research in strategic management and organizational studies focuses on collectivistic and individual-less conceptualizations of organizational routines and capabilities, and, therefore, implicates a lack of agency. Additionally, these concepts miss an explanation of the endogenous origins and development of routines and capabilities. Due to these identified research gaps, the central aim of this paper is to develop a theoretical framework that is based on a newer understanding of organizational routines as organizational and social practices, which investigates the origins and dynamic aspects of organizational routines and their relationship to capabilities and knowledge on the basis of an action-based approach.

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1. INTRODUCTION

According to Teece & Pisano (1994), the historically developed capabilities of an organization represent the origin and true sources of a firm's competitive advantage. Thus, the capability-based view of strategic management puts emphasis on capabilities defined, for example, as '…a firm's capacity to deploy resources, usually in combination, using organizational processes, to effect a desired end' (Amit & Shoemaker, 1993: 35). Organizations are considered to be a unique bundle of capabilities and routines that represents firm-specific and primarily implicit and collective knowledge which enables organizations to perform distinct activities (Spender, 1994; Foss, 1996; Langlois & Foss, 1997). Unfortunately, the theoretical explanation of the relationship between capabilities and organizational routines 'as the building blocks of capabilities' (Winter, 1995) remains widely unclear (Abell et al., 2008). One major problem in the field of evolutionary economics and strategic management is that researchers have '…prematurely moved to higher level or higher order constructs, without first getting clarity on the underlying notion of routines' (Felin & Foss, 2004: 11). As Felin & Foss (2005) state, much of recent research in strategic management and organizational studies focuses on collective and individual-less conceptualizations of routines and capabilities.

Several authors criticize the methodological collectivism of the capability-based view (e.g. Felin & Foss, 2004, 2005, 2006; Gavetti 2005) respectively of the knowledge-based view (Felin & Hesterly, 2007). Consequently, dominant approaches in studying organizational routines treat them as black boxes and, therefore, implicate a lack of agency (Feldman & Pentland, 2003; Pentland & Feldman, 2005). Particularly the evolutionary foundation of the concept of organizational routines seems to hamper a deeper understanding of the internal and dynamic mechanisms underlying the development of capabilities and routines by moving '…the focus of attention away from decision making in organizations' (Gavetti et al., 2007: 524). From that perspective, individuals are deliberately seen as more or less 'interchangeable' (Nelson, 1995: 65; also Teece, 2007: 1323) and '[t]his line of reasoning has placed all of the explanatory burden on the context and environment (over individual causation)' (Felin & Foss, 2005: 443). Thus, strategic and organizational behavior is regarded to be more or less determined by external factors or social constraints (Bourgeois, 1984) as, for example, the properties of a certain situation or pre-given organizational objectives. Additionally, the concept of routines puts strong emphasis on stability and behavioral continuity rather than on organizational change (e.g. Cohen & Bacadayan, 1994; Feldman, 2000; Gavetti & Levinthal, 2004; Cohen, 2007). The questions of how new combinations of resources are actually built, where do new capabilities and routines come from and how they change over time seems to remain still in the 'black box of process' (Priem & Butler, 2001; see also Ethiraj et al., 2005; Abell et al., 2008).

Due to these identified research gaps, the central aim of this paper is to develop a theoretical framework which investigates the origins and dynamic aspects of organizational routines and their relationship to capabilities and knowledge. In order to do so, we propose a departure from the evolutionary foundation and methodological collectivism of the capability-based view by referring to a practice theory perspective (e.g. Bourdieu, 1972; Giddens, 1979, 1984). This approach recently has been applied to broaden our understanding of organizational knowledge (Gheradi, 2000; Orlikowski, 2002; Nonaka & Toyama, 2007), organizational routines (Feldman & Pentland, 2003; Pentland & Feldman, 2005; Cohen, 2007) and innovation (Dougherty, 2008). In reference to routines, this line of reasoning highlights that '[t]he internal structure of a

routine can produce a wide range of different outcomes on the continuum between 'very stable' and 'constantly changing', depending on circumstances…' (Pentland & Feldman, 2005: 794-795) and thereby acknowledging that the rules guiding routine behaviour are necessarily incomplete and imply a certain degree of improvisation and creativity within the act of rule application and that is (social) action (Joas, 1997; Ortmann, 2003; Becker, 2004; Whittington, 2006). However, in the literature on routines and capabilities, it still remains unclear under what circumstances either stable or changing outcomes are produced, or more broadly, how individuals in social settings actually refer to and, thereby, change social rules and practices.

Following this praxeological path, we focus on the cognitive, creative and normative processes of how individuals apply organizational rules and knowledge and, thereby recursively shape the conditions they are situated in (and their objectives). By further elaboration of the concept of modalities as 'main dimension of the duality of structuration' (Giddens, 1984: 28), we aim to provide some conceptual and terminological clarity on both the central constructs of routines, capabilities and knowledge and the relationship among those constructs by offering a framework which describes the change of organizational routines by capabilities.

2.   ORGANIZATIONAL ROUTINES: A REVIEW OF THE LITERATURE[3]

From this theoretical starting point, we will first turn to the concept of organizational routines that is central for our analysis. We will briefly describe the dominant metaphors, main characteristics and central effects of organizational routines and thereafter analyze their potential for stability and change in general. In doing so, we will, furthermore, analyze and differentiate two different but mutually constitutive dimensions of organizational routines: structure versus agency (Giddens, 1984).

2.1.   Main characteristics and central effects of organizational routines

Organizational routines represent a central concept in organizational analysis. Since Stene (1940) introduced the concept to the scientific community, routines have been regarded to be the central organizational mechanism through which the majority of a firm's tasks are accomplished.[4] Despite several centuries of intensive research, many inconsistencies have been manifested in the increased literature on organizational routines (Cohen et al., 1996; Feldman & Pentland, 2003; Becker, 2004; Becker et al., 2005) and progress in our understanding of concept of routines 'has been frustratingly slow' (Cohen, 2007: 774). However, a core definition can be identified which states: 'There is considerable agreement in the literature that organizational routines can be defined as repetitive, recognizable patterns of interdependent actions, carried out by multiple actors' (Feldman & Pentland, 2003: 95).

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[3] The chapters 2 and 3.1 are based on a former conference paper (Hansen & Küpper, 2008).

[4] Besides the work of March & Simon (1958) and Cyert & March (1963), especially Nelson & Winter's 'Evolutionary Theory of Economic Change' (1982) can be regarded as a 'milestone' in this field (Cohen et al., 1996; Feldman & Pentland, 2003; Becker, 2004; Cohen, 2007).

From the literature on organizational routines, Feldman & Pentland (2003) identify three *dominant metaphors*: (1) routines as habits or skills of an organization (Stene, 1940; Simon, 1945; Nelson & Winter, 1982), (2) routines as performance programs (March & Simon, 1958; Cyert & March, 1963) and (3) routines as genes (Nelson & Winter, 1982). Against this multifarious background, Becker (2004) develops a fundamental review of the literature on organizational routines and identifies their main characteristics and central effects on organizations. He differentiates between eight aspects as *main characteristics* of organizational routines. First of all, routines are *activity patterns* (1) that are *recurrent* (2) and *collective* (3). Becker (2004; see also Reynaud 2005) points out that there is a great disagreement in the literature whether these recurrent activity patterns are '*mindless*' (Ashforth & Fried, 1988) or '*mindful*' (Feldman, 2000) respective '*effortful'* accomplishments (4) (Pentland & Reuter, 1994; Feldman, 2003). A further characteristic of routines is central for the explanation of organizational change: *routines are processes* (5). These processes are *context-dependent*, *embedded* and *specific* (6): 'Routines are embedded in an organization and its structures, and are specific to the context' (Becker, 2004: 651, with reference to several sources). They are specific in three ways: Routines are, first of all, *relation specific* (6a) depending on the particular actors and their implicit knowledge involved. Due to local learning processes, routines are furthermore *locally specific* (6b). Last but not least routines are *historically specific* (6c) because at a certain moment in time internal and environmental constellations will be unique. Closely related, their *path-dependency* (7) is another central characteristic: 'Recognizing that routines change in a path-dependent manner highlights the importance of feedback effects' (Becker, 2004: 653). Last but not least routines are *triggered* (8): they are initiated by 'actor-related triggers and external cues' (Becker, 2004: 653).

Besides these central characteristics routines have several positive *effects on organizations* (Becker, 2004): Routines have the power to *coordinate* and to *control* (1) the complex organizational activities because they enable simultaneous and consistent interactions of multiple actors. In this coordination process, routines provide the participants with concrete instructions and establish an implicit *organizational truce* (2) (Nelson and Winter, 1982) between organizational members who give orders and those who receive the instructions. Routines suspend or even suppress organizational communication and negotiation to a certain degree, and allow for efficient problem-solving behavior (see below). Instructions are accepted 'without conscious questioning of the authority of those who give the orders' (Becker, 2004: 656). Therefore, organizational routines 'foster coordination' for two reasons: First of all, as a decision base they allow the participating actors to form confident expectations of each others behavior in future periods and second of all, the resulting decisions have a high degree of 'mutual fit' (Becker, 2005: 827).

In addition to these positive coordination effects, organizational routines *economize on* the limited *cognitive resources* (3) – in form of a 'limited information processing and decision-making capacity' (Becker, 2004: 656-657) – of individuals. They enable the human agents to focus their attention on non-routine activities and to respond to recurring and familiar occurrences with a semi-conscious performance of routinized actions. Routines, therfore, reduce uncertainty (4): In insecure and especially pervasively uncertain situations, routines enable the organizational members to be and remain capable of acting. Routines support rule governed and predictable behavior because they fix parameters and economize on cognitive resources and, thereby, set them free. They promote cognitive efficiency and, furthermore, reduce complexity and

the routinization of processes 'may be viewed as an uncertainty decreasing strategy' (ibid.: 658).

Becker (2004) identifies two additional positive effects of organizational routines: *stability* (5) and *storing knowledge* (6). We will come to the central aspect of stability in the next section in which the interplay of stability and change is the subject of discussion. At this point, we focus on the sixth effect of organizational routines, their capability to save knowledge: 'Routines store knowledge' (ibid.: 660) and can be seen as the 'memory' (Nelson & Winter, 1982) or 'collective mind' (Weick & Roberts, 1993) of an organization. They especially store the firm-specific (production) knowledge that is primarily implicit and collective and enables organizations to perform distinct activities (Foss 1996; Langlois & Foss, 1997).[5]

2.2.   Stability and change of organizational routines

A further and very important effect of organizational routines is their capacity to generate *stability* and, therefore, efficiency, predictability and legitimacy in organizational interactions (Becker, 2004; Feldman & Pentland, 2003). Especially the dominant approaches to studying organizational routines – routines as habits (Stene, 1940; Simon, 1945; Nelson & Winter, 1982), performance programs (March & Simon, 1958; Cyert & March, 1963) and genes (Nelson & Winter 1982) – conceptualize routines as *stable* (Feldman, 2003) or *rigid* (Cohen, 2007).[6] Due to their recurrence, organizational routines provide stability for two reasons: First of all, when routine results are satisfactory and no alternative way of problem solving has to be found, they spare the limited cognitive resources of involved actors as mentioned above. Beside the reduction of transaction costs (Becker 2004), stability of organizational routines allows valuable feedback effects and so 'provides a baseline against which to assess changes, compare and learn' (ibid.: 659). However, although there are feedback processes within the reproduction of an organizational routine, negative feedback might be ignored by the performing agents. In the worst case such 'defensive' routines (Argyris, 1985, 1990) can lead to 'competency traps' (Levitt & March, 1988) and 'structural inertia' (Hannan & Freeman, 1984). From this classical perspective on routines, organizational 'routines are seen as the antithesis of flexibility and change, locking organizations into inflexible, unchanging patterns of action' (Feldman & Pentland, 2003: 98) and, thereby, highlighting the effects of stabilization rather than change.

Nevertheless, as newer research shows, organizational routines are not inert because their processual character implies some internal dynamics (Feldman & Pentland, 2003; Becker, 2004; Pentland & Feldman 2005).

> 'The internal structure of a routine can produce a wide range of different outcomes on the continuum between 'very stable' and 'constantly changing', depending on circumstances.' (Pentland & Feldman, 2005: 794-795.)

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[5] It is still unclear where and how exactly knowledge is stored in or by routines and, thus, how routines exactly serve as memory (Cohen, 2007).

[6] Cohen (2007) who states that organizational routines are assumed (at least in the traditional perspective on routines) to be '*rigid* in their execution, that they are *mundane* in content, that they are *isolated from thought and feeling*, and/or that their underlying action patterns are *explicitly stored somewhere*' (Cohen, 2007: 774, emphasis added).

Due to the fact that at a certain moment of time environmental constellations can become complex (and uncertain or even ambiguous), the probability that an exact reproduction of the on certain routine can be performed in a subsequent iteration is very low. General rules that govern the routinized actions of a large number of organizational members have to be incompletely specified and, therefore, have to be interpreted by the performing individuals who adapt the established routines to local and situated demands (Becker, 2004; for an elaborated philosophical discussion on that see, for example, Ortmann, 2003).[7] There are several reasons for the performing actors to adapt and, thereby, change organizational routines: For example, when existing routines do not produce the intended outcomes, or, as a result of existing routines, new problems occur and then have to be solved. Furthermore, routine outcomes can produce new organizational resources that offer new opportunities for the performing actors (Feldman 2000, 2003; Baker & Nelson, 2005).[8] Routines almost always are 'in flux' (Becker et al., 2005: 776) and 'cannot be understood as static, unchanging objects' (Feldman & Pentland, 2003: 95). They are both: a source of stability *and* change (Becker, 2004; Feldman & Pentland, 2003; Pentland & Feldman, 2005).

From this perspective, routines have a 'dual nature' (Feldman & Pentland, 2003: 112) and, in addition to this, play a central role for the flexibility of an organization (Pentland & Reuter, 1994). Some routines are even explicitly designed to produce change, for example, new product development routines and, therewith, connected learning processes (Becker, 2004).[9] However, from our perspective the focus of attention should not be directed to 'meta-routines', 'higher-order routines' or 'routines for changing routines', but rather to 'something more basic: the inherent capability of every organizational routine to generate change, merely by its ongoing performance' (Feldman & Pentland, 2003: 94). As a result of adaptation processes, routines are 'continuously emerging' (Pentland & Feldman, 2005: 794). Because (tacit) knowledge evolves and continually changes in its application, routines in particular are a source of *endogenous change* (Becker, 2004), as a 'change that comes from within organizational routines' (Feldman & Pentland, 2003: 112). In this context, the performing actors play a crucial role as central drivers of change. The focus of attention is switched, on the one hand, from the episodic to the continuous change of organizations and, on the other hand, from external pressure and the explicit change of routines through managerial decision making[10] to their incremental and primarily endogenous changes triggered by

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[7] See also the classical study of Bensman & Grever (1963). These authors show that suspension of (formal) rules is not only tolerated but functionally necessary in order to 'keep the system alive' and adaptive.

[8] It may be important to note that in the practice-based perspective resources (and routines and knowledge) are not considered as objectified entities or as simple means brought into sequences of action in order to reach pre-given ends. More over, means and ends, or resources and rules, recursively constitute each other in situation of acting (Joas, 1997).

[9] Especially, the literature on dynamic capabilities (e.g. Teece et al., 1997; Eisenhardt & Martin, 2000; Winter, 2000, 2003; Helfat & Peteraf, 2003; Helfat et al., 2007) focuses on this kind of 'routine-based change of routines'. Dynamic capabilities represent some sort of 'higher-order routines', explicitly targeted toward the change of lower-order or operational routines or capabilities. Because of the problem of an infinite regress (Collis, 1994) we are skeptical regarding the explanation of power of these approaches (see also Schreyögg & Kliesch-Eberl 2007).

[10] From the traditional perspective on routines it is (at least implicitly) assumed that managerial decision-making is not routine-based or rule-based. Or to put it differently,

the performing practitioners (Feldman, 2000; Feldman & Pentland, 2003; Pentland & Feldman 2005*).*

3. THE DUALITY OF ORGANIZATIONAL ROUTINES

The notion of stability and change in organizational routines refers to specific interactions within organizational routines: routines are 'generative systems with internal structures and dynamics' (Pentland & Feldman, 2005: 793) and can not be seen as 'static objects' (ibid.: 794). The underlying perspective on organizational routines explicitly differentiates and studies different aspects or dimensions of organizational routines and their interactions (Feldman & Pentland, 2003; Pentland & Feldman, 2005). This practice-based perspective on routines 'brings agency, and, therefore, subjectivity and power back into the picture' (Feldman & Pentland, 2003: 95), thereby trying to enlarge the widely structuralistic respectively functionalistic and depersonalized analysis of routines towards more individualistic elements and to bring 'the individual back in' (Kilduff & Krackhardt 1994; see also Barley & Kunda 2001).

3.1. Dimensions of and interactions within organizational routines

Feldman's and Pentland's (2003) central aim is to offer a new ontology of organizational routines that takes the specific process through which organizational routines change into account:

> 'Our goal here is to create a new theory of organizational routines that retains the valuable insights of prior work while enabling us to account for the empirical observations that expose the limitations of this work.' (Feldman & Pentland, 2003: 100)

Pentland & Feldman (2005) consider different distinctions that can be applied to analyze the two aspects of organizational routines: structure versus agency (Giddens, 1984), objective versus subjective (Bourdieu, 1990), disposition versus behaviour (Hodgson, 2003) and ostensive versus performative (Latour, 1986). Feldman & Pentland (2003; 2005) themselves follow Latour's (1986) terminology and identify two interrelated dimensions of organizational routines: (1) an ostensive aspect as the abstract idea or pattern of a specific routine that can 'be thought of as a narrative, or a script' (Pentland & Feldman, 2005: 796) of organizational routines and (2) a performative aspect as specific and actual actions of organizational members at a certain time and space 'that bring the routine to life' (Feldman & Pentland, 2003: 94).

In this sense, organizational routines embody a duality of structure and agency like all social phenomena (Giddens 1984). 'They consist of both abstract understandings and specific performances' (Pentland & Feldman, 2005: 794). We take this perspective into account, to differentiate between those two dimensions of organizational routines and their interactions with physical artifacts (Feldman & Pentland, 2003; Pentland &

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this view is 'treating managers as rule-makers and employees as rule-followers' (Spender, 1996: 42). This view on routines, capabilities and knowledge is in some respect problematic since those conceptions are based on different and contradictory types of logic or rationality (Schreyögg & Kliesch-Eberl, 2007; see also Kilduff, 1993). Such a hierarchical solution of 'mind-body paradox' is based on the assumption that 'the subject (*the management*) […] stands in a privileged, if not exclusive, relationship with knowledge' (Gheradi, 2000: 213; emphasis added).

Feldman, 2005): organizational structures and specific organizational practices (or routines, we use those two terminologies synonymously) as two related and recursive dimensions. From this perspective, routinized social practices have a dual sense: They are 'something that guides activity' and, at the same, time they represent the 'activity itself' (Whittington, 2006: 619). Or to put it slightly different, 'practice is both our production of the world and the result of this process' (Gheradi, 2000: 215).

> 'On one hand, routines can be characterized as abstract patterns that participants use to guide, account for and refer to specific performances of a routine. … On the other hand, routines can be characterized as actual performances by specific people, at specific times, in specific places.' (Pentland & Feldman, 2005: 795.)

The *first dimension* or the structural aspect represents an abstract and partially narrative description of organizational routines (Feldman & Pentland 2003; Pentland & Feldman, 2005) that takes the form of an explicit (e.g. written instructions, formalized planning or budgeting procedures) and implicit collectively held knowledge about a specific organizational activity. In that sense, the structural dimension refers to the existence of collective knowledge about structure – rules and authoritative or allocative resources (Giddens, 1984) – that enable organizational members to refer to, to guide their work activities and to account for their behavior (Feldman & Pentland, 2003). At the same time, these structural aspects of organizational routines constrain the actions of organizational members. All together organizational structure can be seen as the virtual order of an organization and its reproduction.

As an abstract property of a social community, social structures are subject-less and outside of time, they only exist in the instantiations in social practices and as memory traces of knowledgeable human agents (Giddens 1976, 1984). Since contextual details always 'remain open – and must remain open – for the routines to be carried out' (Becker, 2004: 648, *as well as* Pentland & Feldman, 2005: 797; see also Ortmann, 2003), the structural dimension cannot imply or even determine specific performances of organizational routines (Feldman & Pentland, 2003).

The *second dimension*, the agency dimension as the actual performance of organizational routines by human agents, refers to reproduced social practices that create, maintain and modify the structural dimension of organizational routines (Feldman & Pentland, 2003; 2005). In contrast to the abstract social structure, social practices are situated, spatially and temporally located and presuppose a subject or an actor (Giddens, 1976).

> 'For practice theory, the nature of social structure consists in routinization … Structure is thus nothing that exists solely in the 'head' or on patterns of behavior: One can find it in the routine nature of action. Social fields and institutionalized complexes – from economic organizations to the sphere of intimacy – are 'structured' by the routines of social practices. Yet the idea of routines necessarily implies the idea of a temporality of structure: Routinized social practices occur in the sequence of time, in repetition; social order is thus basically social reproduction.' (Reckwitz, 2002: 255.)

The specific interaction of the two recursive and mutually constitutive dimensions of organizational routines determines the degree to which routines can change, to which they are flexible and to which extent they can be transferred to other contexts (Feldman & Pentland, 2003; Pentland & Feldman, 2005).

> 'Some routines show a lot of variation; others do not. Some are flexible; others are not. Some are easy to transfer; others are not. These variations may seem like noise or bad measurement, but they are not. They are indications of underlying phenomena and dynamics.' (Pentland & Feldman, 2005: 794.)

These dynamics within organizational routines represent the more or less firm-specific process of the recursive constitution of a particular organizational structure – certain organizational rules and resources – and thus form the unique organizational routines over time. Organizational routines represent the routinized application of rules and resources in situations. This firm-specific structuration process can be seen as 'an on-going opportunity for variation, selection, and retention of new practices and patterns of action within routines and allows routines to generate a wide range of outcomes, from apparent stability to considerable change' (Feldman & Pentland, 2003: 94). In the course of time and action the structural dimension of routines is varied through the (varied) enactment by organizational members in their day-to-day activities. It is mediated through firm-specific *modalities of structuration* – interpretative schemes, norms and facilities (Giddens, 1979; 1984) – that become thematic priority in the next section.

3.2.   Modalities of structuration

The mediation between the abstract structure as the space- and timeless conception of rules and resources, and social practices respectively social action is captured within the concept of modalities which can be considered the 'main dimension of the duality of structuration' (Giddens, 1979: 81; Giddens, 1984: 28). Although several authors (e.g. Pentland & Rueter, 1994; Feldman 2000, 2003, 2004; Feldman & Pentland, 2003; Pentland & Feldman, 2005) have used practice or structuration theory in order to enrich our understanding of the nature of routines, the concept of modalities of structuration has experienced only rarely a closer elaboration within that vein of research. Thus, a clear definition and solid conceptual ground seem to be missing (for valuable exceptions see Duschek, 2001, 2002; Sydow et al., 2003). A closer look at the concept of modalities may help to bring some clarity on the structuration process and, thereby, offers some insights to enrich our understanding of the development or change of organizational routines. Thereby, we are trying to show that the application of rules (and resources) in social practices implies an active but not necessarily (fully) conscious performance of individuals (and collectives).

Routine behavior is mainly rooted in the practical consciousness of individuals and largely reflects routinized action, since actors '[…] know tacitly about how to go on in the context of social life without being able to give them direct discursive expression' (Giddens, 1984: xxiii). From this perspective, all social life is mainly considered as being rooted in the routinized and largely unconscious proceeding of social practices which are connected to practical, tacit or pre-reflexive knowledge. The practice-based perspective helps 'us to see organizations as systems of practices, existing in the world of tacit knowledge. That is, tacit knowledge that is simply usable but that becomes the object of reflection when a breakdown occurs' (Gheradi, 2000: 215; see also Joas, 1997). As long as there is no breakdown or crisis, understood as the interruption of smooth and unopposed action – or, more precisely, when the skills and knowledge of individuals are sufficient to reach their objective within routinized action (Joas, 1997) – the prime mode of action is pre-reflexive and the distinctions between subject, object, thought or context is (temporarily) dissolved (Gheradi, 2000). Therefore, it is central for this understanding to consider knowledge (and learning) as knowledge-in-practice or knowledge-in-action that is neither in the head (mentalistic version of knowledge) nor does it represent a commodity (objectified version of knowledge) (Gheradi, 2000).

Social practices, rooted in the pre-reflexive knowledge, allow for the structuring of a basically unstructured world and, thereby, guide and shape the processes of sense-making (Reckwitz 2007). In the terminology of Alfred Schutz (1970, 1970b, 1980), this process of structuration is labeled 'social typing' or 'typification'. The mundane experiences that individuals make in daily situations are interpreted through an individual's pre-existing and generalized stock of knowledge or schemas of the world (Faircloth, 2001). Or as Schutz puts it: '[…] all forms of recognition and identification, even of real objects of the outer world, are based on a generalized knowledge of the type of these objects or of the typical style in which they manifest themselves' (Schutz, 1970b: 118-119; quoted form Faircloth, 2001: 334). In this perspective, '[…] experience of everyday life [is] filtered through a set of categorical definitions or typifications about what the world is and how one should act within it. This stock of typical meanings and recipes for action provide people with a sense that the everyday social world can be taken for granted, that it exists independently of our immediate experience of it, and that, for all practical purposes, others experience it in a similar fashion' (Pfohl, 1985: 292). Within this process of social typing or abstraction, the specific properties of given objects, events or actions are transformed into typical categories by an act of idealization (Duschek, 2001). The unknown properties of a certain situation, the uniqueness of its objects, events and actions – their indexicality – are reduced or transformed into known and pre-existing categories or schemas and, thus, classified. Once socially typified, a situation is transformed into 'objective reality' and becomes an indexical feature of our next interaction and interpretive process.

It is important to note that the pre-existing types or schemata or the existing stock of knowledge, are also modified recursively within in the process of typification. Ongoing situations are classified or intermediated with foregoing expectations, but on the other hand, the new properties of a certain situation are never fully eliminated. The adaptation of new experiences into existing schemas and the coincidental shaping of the schemas themselves is an active process and involves an 'effortful accomplishment' (Pentland & Rueter, 1994) although this accomplishment does not necessarily have to be conscious. Routine behavior, although often not fully conscious for the agents, is, therefore, not an automatic and unchanged response to a certain stimulus, as mainly presumed in the earlier literature on routines (e.g. March & Simon, 1958; Cyert & March, 1963; Nelson & Winter, 1982), but rather 'the performance of acting subjects that unfold anew each time' (Pentland & Rueter, 1994: 486, with reference to Giddens, 1984). Organizational routines are representations of practical or pre-reflexive performance of knowledgeable actors which can be characterized by a certain degree of creativity and flexibility. Although not discursive and more or less rooted in the implicit knowledge, this practical or procedural knowledge allows for the solutions of even complex problems (Cohen, 1991). From this point of view, organizational routines are not static since they require active actors to put governing rules and resources into action and, therefore, actively shape the situation they are embedded in (Joas, 1997). So far, organizational routines are conceptualized as being rooted in the pre-reflexive knowledge but not being necessarily static, leaving open the question what role (rational or conscious) reflexivity plays for the development of routines and how this kind of reflexivity comes into the picture.

4. ORGANIZATIONAL ROUTINES AND CAPABILITIES
4.1. Capabilities as conscious-reflexive action

In the present literature, the relationship between organizational routines and capabilities seems to be conceptually vague and a clear distinction between these two concepts is still missing (Abell et al 2008).[11] Organizational routines are often regarded to be the 'building block of capabilities' (Winter, 1995; Dosi et al., 2000) and, besides the level of aggregation and importance, it is (at least implicitly) assumed that there is no fundamental difference between those two concepts. In these definitions, organizational routines evolve mainly through the application or the cause of higher-order constructs or meta-rules 'with varying degrees of tacitness and automaticity, intertwined with explicit, purposeful acts of strategic discretionality' (Coriat, 2000: 216). Although capabilities, in contrast to routines, are sometimes also separated from each other by referring to the level of intentionality (e.g. Helfat et al., 2007), the differences between those two concepts still remain largely unclear and may be traced back to the fact that researchers in the field of evolutionary economics and strategic management '[…] prematurely moved to higher level or higher order constructs without first getting clarity on the underlying notion of routines' (Felin & Foss, 2004: 11).

However, in order to allow for a conceptual distinction between routines and capabilities, we suggest introducing the criteria of *conscious reflexivity* as a distinctive feature of organizational capabilities. More precisely, *conscious reflexivity* refers to the conscious evaluation of goals, circumstances (situation) and consequences of the outcomes of established organizational routines in order to develop new ones, to change or even to maintain existing organizational routines within an act of deliberate dissociation from established organizational routines.[12] Thus, capabilities represent creative, reflexive and conscious social action in order to deliberately introduce new or to change, maintain or eliminate existing organizational routines to enable an organization simply to proceed.[13] This is in some respect consistent with most of the definitions of capabilities (or competence) since '[v]irtually every definition of competence in the literature refers to some purpose the firm is able to achieve […]' (McGrath, 1995: 254, with reference to other sources). By refereeing to social action, we insist that both capabilities and routines represent collective constructs which both involve collective action and multiple actors (e.g. Nelson & Winter, 1982; Dosi et al.,

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[11] We do not further distinguish between competences, core competences, capabilities and dynamic capabilities, although those concepts may address slightly different issues. For an attempt to separate those constructs from each other see, for example, Dosi et al. (2000). Our main focus is on the differences between organizational routines and capabilities and their relationship.

[12] We use the term 'conscious reflexivity' synonymous to 'rational reflexivity' as, for example, suggested by Dominques (2000). Conscious reflexivity could be distinguished from unconscious reflexivity and practical reflexivity. The latter two types of reflexivity are considered to be part of the concept of organizational routines, accounting for (incremental) adaption and change and being connected to pre-reflexive knowledge and learning.

[13] From this point of view, individual and organizational goals are not considered to be pre-given in the sense that they exist (fully) before action or situation (Joas, 1997). Thus, the definition of (in some sense always) preliminary and changing goals is considered to be captured by capabilities and object of negotiation, communication and feedback.

2000; Levinthal, 2000; Becker, 2004; Abell et al., 2008) and, thus, both concepts are placed analytically at least at the group level.[14]

Important to add to this preliminary definition is that capabilities are rooted in social practices and can only be understood in relation or dissociation/deviance to existing social practices within one social system. From this point of view, capabilities are not social practices themselves but rather the ability to consciously dissociate from existing social practices. In contrast, organizational routines represent more or less unconscious, repetitive patterns of action that a certain organization (or an organized group within an organization) performs or, at least, can rely upon without any explicit processes of negotiation, communication and conscious reflection. Since adaption and change can also be based on numerous unconscious efforts, even for complex problems (Cohen, 1991), routines are not considered as static. Thus, routines can be a powerful source of adaptation and change and could even lead, due to the so called 'deliberation-without-attention-effect' (Dijksterhuis et al., 2006; Dijksterhuis & Meurs, 2006), to better subjective and objective results. The main point of difference between organizational routines and capabilities is that routine-based adaption or change is based to a large degree on practical or tacit knowledge and, thus, is unconscious. Tab. 1 shows the characteristics of routines and capabilities from this perspective.

	Routine	Capability
Change	• unconscious, not indented, creative and practical-reflexive, • goals, circumstances and consequences of action are not consciously evaluated • no deliberate dissociation from existing social practices but practical or tacit dissociation	• conscious, intended, creative and reflexive, • goals, circumstances and consequences of action are consciously evaluated, • deliberate dissociation from existing social practices in order to change social practices
Stability	• unconscious, not indented, non-creative, • goals, circumstances and consequences of action are not consciously evaluated, • no deliberate or practical dissociation from existing social practices	• conscious, intended, creative and reflexive, • goals, circumstances and consequences of action are consciously evaluated, • deliberate dissociation from existing social practices resulting in the maintenance of existing social practices (because possible alternatives are considered to be inadequate/less powerful in relation to existing routines)
Type of knowledge	• Tacit, pre-reflexive, implicit knowledge	• Discursive, reflexive, rational knowledge

Tab. 1: Routines and capabilities as sources of change

Important to note is that the differentiation between routines and capabilities is an analytical one and relative. Thus, complex and collective problem solving activities can be only placed ideally on a continuum ranging from pure conscious reflexivity to pure unconscious reflexivity (see also Lillrank 2003). In reality, the solution of complex problems may involve conscious and unconscious solutions to problems simultaneously (e.g. Hutschins, 1991).

As mentioned before, capabilities are considered to be creative-conscious-reflexive action which is rooted in social practices but goes beyond it. Thereby, creativity is defined as the 'capability to act or think innovatively in relation to established modes of

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[14] Notwithstanding, the starting point of our theorizing is the socially embedded actor.

activity' (Giddens 1991: 41) which is embedded in concrete situations of problem-solving rather than being the outcome of some genialistic actors or a mentalistic construct (Joas 1997; see also Ford, 1996; Drazin et al., 1999). In reference to action (or social practices), creativity is intertwined with action in situations and is only sufficiently understandable (and to be set free) in the context or the situation the action is embedded in. It may be important to note that creativity is not an objectively given proposition of an outcome, but rather it 'should be defined as a socially constructed label used to describe actions embedded within particular contexts' (Ford & Gioia, 2000: 707). As such, it is open for the influence of internal and external power since the description of a certain sequence of action as being creative (or an actor as being capable) depends at least partly on power (Sydow et al., 2003). More precisely, if a certain action or an idea should be further developed (and that is roughly the first step of the deliberate development of new organizational routines), not only cognitive and normative factors, but also the constellation of power relations (and the availability of resources) within one certain social system have a substantial influence (Giddens 1984).

4.2.   Framing the development of routines

In order to understand the sequential steps of how routines are deliberately developed over time by making use of capabilities, we refer loosely to the classical framework of the conception of choice as provided by March & Olsen (1976).[15] We differentiate between four phases of the development of routines, which can only be analytically separated from each other. In reality, these phases are overlapping and could be characterized by multiple interdependencies. However, for analytical clearance, we need to discuss them separately and neglect the interdependencies among those phases.

The four phases are interpretation and sense-making (1), coordination and negotiation (2), transformation and stabilization (3) and elimination and unlearning (4).[16] These phases have to be thought of as being guided by social practices which, according to the concept of duality of structure (Giddens, 1984), determine but also enable action and which, in turn, are shaped by organizational practices. By referring to organizational practices, we highlight that these processes are constituted by social settings or situations and are not the properties of single individuals.[17] The understanding of capabilities as proposed here is then exactly to be seen in the factors that positively influence the conscious and reflexive dissociation from existing social practices and

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[15] In their 'complete cycle of choice' March & Olsen (1976) differentiate between the individuals' cognitions and preferences, their 'models of the world' (1), individuals actions or participation in a choice situation (2), organizational actions: 'choices' or 'outcomes' (3) and environmental actions or 'responses' (4) which, in turn, affect individual cognitions and preferences (1).

[16] For a conception of 'creative managerial decision making' see Ford & Gioia (2000). These authors suggest that the process or better circle of managerial decision making can be characterized by eight factors or steps: feedforward (1), issue interpretation (2), alternative generation and scripted action (3), expectations (4), general character of the decision process (5), variation introduced (6), choice selection (7) and feedback reflecting legitimacy of retained action (8).

[17] Notwithstanding, that the impact of different individuals (top management, senior management, workers) on these processes may vary.

lead to the deliberate development of new or changed organizational routines or to the maintenance of existing organizational routines.[18]

4.2.1. Interpretation and sense-making

In the practice-based or action-based perspective as proposed here, creative action '…is pictured as an instrument in the development of interpretation, rather than the other way around' (March, 1996: 286).[19] As such, it is primarily action which allows for the development of new and appropriate interpretations of the world. 'Imaginative action-based decision making entails nonlinear, recursive, interactive [...] interpretive processes intertwined with taking action. It is a dynamic process in which interpretations tend to change as result of the process' (Ogilvie, 1998: 51).[20] Creative action and processes of interpretation and sense-making (and, thereby, learning) are inextricably bound together and constitute each other. Therefore, creativity is not the potential to simply find solutions for existing problems, but it is rather a way of making sense of the world and, as such, it is the precondition for a disclosure of possibly new sequences of actions (Joas, 1997).

Individual sense-making is embedded in the unique organizational culture but also recursively influences the organizational culture (Harris, 1994).[21] One starting point for the change of existing patterns of interpretation and sense-making is the (interpretative) concept of ambiguity, whereas '[a]mbiguity refers to a lack of understanding and the existence of multiple conflicting interpretations. It differs from uncertainty in that it can not be resolved by collecting additional information' (Ford & Ogilvie, 1996: 55; see also March & Olsen, 1976: 12). In contrast to uncertainty, ambiguity as the lack of 'socially constructed interpretations of subjective information' (Ford & Ogilvie, 1996: 54) cannot be resolved by additional information, but rather by action as processes of trial-and-error (Gheradi, 2000).

In terms of interpretation and sense-making, elements of the unstructured world can not be transformed into existing types or schemas by the use of existing social practices (e.g.

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[18] Since our starting point for the dissociation from existing social practice is a breakdown or crisis, or more generally the concept of ambiguity, the maintenance of existing routines has to be thought as being founded in the inability to find a (subjective) better substituting routine.

[19] In this paper we do not distinguished between action-based (or activity theory) and practice-based view on organization since action theory could be regarded as one of the main strands of influence on practice-based thinking (Gheradi, 2000). The three other strands are, according to Gheradi (2000), actor-network theory (ANT), situated learning theory (SLT) and cultural perspective to organizational learning (CP).

[20] 'The important contribution [of phenomenology] to practice-based theorizing is its methodological insight that practice is a system of activities in which knowing is not separate from doing. Further, learning is a social and participate activity rather than merely a cognitive activity' (Gheradi, 2000: 215).

[21] Quite similar on the organizational level: 'The fourth assumption is that organizations differ systematically in the mode or process by which they interpret the environment. Organizations develop specific ways to know the environment. Interpretation processes are not random' (Daft & Weick, 1984: 285-286). Or in our words, organizations have different (cognitive) organizational routines or social practices of how to interpret the world.

cognitive scripts). 'Schemas refer to the cognitive structures in which an individual's knowledge is retained and organized. In addition to being knowledge repositories, schemas also direct information acquisition and processing' (Harris, 1994: 309).[22] Since schema-guided sense-making can occur relatively unconsciously or consciously (Harris, 1994, with reference to other sources), it is important to note that in order to speak of capabilities, the central question is under which circumstances the process of unconscious sense-making is interrupted.[23] Or in other words, although some of these derivations may be handled by unconscious reflexivity, from a certain point in time or in a certain situation this may not be sufficient nor possible anymore. We refer to this state as breakdown (Gheradi, 2000) or crisis (Joas, 1997).

The interruption of routinized and, thus, mainly unconscious or pre-reflexive processes of sense-making can be triggered by external and internal factors leading to ambiguity. In that sense, factors stimulate the level of ambiguity that may provide a powerful source or trigger of conscious reflexivity since '[o]ver time and through social information processing, organizational members come to develop similar schemas. As individuals' schemas become more similar, the social information they provide others becomes more focused, clear, consistent, and persuasive. As a result, the group's shared schema knowledge becomes somewhat self-perpetuating' (Harris, 1994: 314). External factors that lead to ambiguity may be perceived as crises, a breakdown or a (radical) shift in the environment.[24] For example, new entrants in existing markets may lead to different competitive markets and, thus, force an organization (or certain members of an organization) to re-evaluate their goals and possible strategies of competition. This may include a re-consideration of existing sources of information, but also a re-evaluation of the importance of the selected information and the methods applied for interpretation.[25]

Internal factors are, for example, that different members of an organization hold different points of view or interests. This even accounts for organizations with a high level of cultural integration or in highly-ordered contexts (Golden, 1992). From this cultural point of view, Golden (1992) shows that even in a highly-structured organizational culture a certain degree of ambiguity always exists. This type of ambiguity may be a powerful impact factor or stimulus for conscious reflexivity and is, for example, positively stimulated by newcomers: 'Given their inexperience in the

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[22] Harris (1994, with reference to Taylor & Crocker, 1991) identifies seven functions of schemas: Schemata provide a structure against which experience is mapped (1), direct information encoding and retrieval from memory (2), affect information processing efficiency and speed (3), guide filling gaps in the information available (4), provide templates for problem solving (5), facilitate the evaluation of experience (6) and facilitate anticipations of the future, goal setting, planning, and goal execution (7).

[23] In our conception, the existence of a capability is based on the existence of conscious reflexivity. Since we assume that social life is largely embedded in social practices and, thus, guided by implicit and often unconscious rules (Reckwitz, 2007), we are looking for the factors that lead to conscious reflexivity in order to understand capabilities as the dissociation from social practices in order to deliberately change (or maintain) social practices.

[24] Important to note, external factors such as perceived crisis have to lead to different perceptions and, thus, ambiguity. Based on the assumption that a high level of similarity between the individual's schemas exists, it seems to be logically contradictory that crisis are perceived differently and, thus, lead to (interpersonal) ambiguity.

[25] Daft & Weick (1984) refer to these or, at least similar activities as scanning the environment.

organizational setting, organizational newcomers are particularly likely to engage in conscious, reflective sensemaking' (Harris, 1994: 315). It is important to note, as social institution theory high-lights, that due to similar socialization of professionals in universities and other institutions, the impact of professionals as a source of conscious, reflective sense-making may be limited (Meyer & Rowan, 1977; DiMaggio & Powell, 1983; Simon, 1991). However, despite this important point, we hypothesize that newcomers as alumni and professionals from other organizations, or more precisely from different social systems with different social practices (e.g. other industries), may provide a powerful stimulus for a change in established processes of sense-making guided by social practices and, thereby, according to the dual figure of recursiveness, change existing social practices.

Additionally, as Fazio (1990) states, the variety of former experience of certain individuals has an impact whether external changes in the situation or context are registered consciously or not.[26] To put it simply, the more universalistic the knowledge or experience of certain individuals is, the lower is the likelihood that the differences in situations or the stimulus domain are reflected upon consciously. That is because differences or changes in the environment (that is outside of the individual) are transformed into pre-existing categories by unconscious information processing.[27] To turn it the other way, these findings point to the importance of unlearning (see below) in order not to fall (unconsciously) back into old patterns of actions and, thus, to be capable of developing and introducing efficient, new or modified routines.[28] To be considered as being capable, the ability to consciously manipulate existing schemas of sense-making plays an important role. In addition to the influence of former experience, time pressure may play an important role whether these schemas of sense-making are consciously reflected upon or not (see also Becker, 2004).

4.2.2. Coordination and negotiation

The involvement of multiple actors (and different resources) in sequences of socially embedded action demands the coordination of different resources (e.g. skills and knowledge of individuals, technologies, money) and often opposing interests. This notion underlies the consideration of organization as systems of ongoing negotiations in which alternatives (also sense-making) are negotiated directly and indirectly in processes of bargaining among various parties involved in interaction (Harris, 1994). These negotiations are surpassed to a certain degree by organizational routines representing an 'organizational truce' (Nelson & Winter, 1982) that allows for the

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[26] Quite similar: 'In conscious processing, some conscious schema manipulation, reflection and reconciliation is required. The degree of conscious processing that is required is largely determined by the extant of experience with the stimulus domain: more experience is likely to facilitate more unconscious, tacit processing' (Harris, 1994: 315).

[27] Of course, those changes or differences are not perceived consciously by the individuals as changes or differences.

[28] This reasoning is based on the assumption that the repertoire of routines could not be enlarged endlessly without substantial losses of efficiency. See also the problems connected to the trade-off between exploration and exploitation (March, 1991; Levinthal & March, 1993). In order to allow for exploration (development of new routines), we assume that activity of exploitation (that is in our perspective ongoing routine-based activity) has to be reduced.

efficient problem-solving within established sequences of action or practices. Although one may admit that even '[t]he existence of a routine does not necessarily indicate that a truce has been achieve' (Pentland & Feldman, 2005: 808), we have proposed that capabilities, in contrast to organizational routines, can be characterized by a higher level of different and often conflicting interests than routine-based change (that is change which is based on unconscious reflexivity) and, thus, involve, in contrast to routines, a higher-level of negotiations.

Similar to the process of sense-making, the process of negotiation can also be regarded as schema-based and '[w]ithin the organizational context, individuals encounter social entities (e.g., themselves, others, and organizational groupings), events and situations, and nonsocial objects and concepts that must be perceived and responded to' (Harris, 1994: 312). Taking the individual as a theoretical starting point, change in the coordination of different resources (or routines) may be first described as a process of mental dialog which allows for the development of social order concerning multiple actors (Harris, 1994, see also Mead, 1934).[29] The mental dialog perspective highlights that social coordination that is based on the ability of individuals to 'take the perspectives of others to guide intrapsychic debate regarding the construction of reality and behavioral decisions' (Harris, 1994: 316). Thereby, in processes of action individuals consider different aspects within this mental dialog perspective (Harris, 1994): Their own preferences (1), the preferences of their workgroup (2), their supervisor (3), the management (4) and the organizational entity (5).[30] To put it simply, conscious reflection upon these (mental) processes of negotiation may be determined by the level of agreement or disagreement since the 'outcomes serve to elaborate the schema for the stimulus under consideration' (Harris, 1994: 316) and especially 'for familiar or routine stimuli, the results of previous, conscious dialogues (conducted when the stimulus was not familiar or routine) which have been incorporated into the schema for the stimulus inform sensemaking in a relatively tacit, unconscious, and 'effortless' manner' (Harris, 1994: 317). Assuming that 'the distinctive feature of organization level information activity is sharing' (Daft & Weick, 1984: 285), communication plays an important role in resolving disagreement based on mental dialogs.

Different factors or dimensions may influence the level of reflexivity (or disagreement) within these processes of mental or communicative negotiation. A first listing of such influential factors which, in turn, leads to disagreement or negotiation and, thus, allows conscious reflexivity, is provided by Strauß (1979, quoted from Joas, 1999: 55): number (and interests) of participants (1), experience of participants (2), characteristic of issue or items being negotiated (3), number of negotiations (4), imbalance in power of the participants (5), relevance of the negotiations (6), external visibility of the negotiations processes (7), number and complexity of the objects of negotiations (8) and alternative options of the participants (9). All these factors may influence the processes of negotiation in different directions. For example, it seems plausible to assume that in negotiations about complex and important issues, with a huge number of heterogenic

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[29] Harris (1994) refers to organizational culture and not to social practices, but as already mentioned, practice-based theorizing seems to be influenced by cultural perspectives to organizational learning (Gheradi, 2000) and as such they seem to be more or less commensurable.

[30] Additionally, the preferences or expectations of the external environment may also play an important role in shaping action, especially in order to legitimate (organizational) action (see, for example, Meyer & Rowan, 1977; DiMaggio & Powell, 1983).

participants involved and a low level of imbalance in power, processes of conscious negotiation and, thus, reflection are more likely to arise in settings with a few experienced participants in these processes. Additionally, a high-level of common knowledge (that is the similar experience of the members of an organization or a group within an organization), the redundancy of knowledge and a high-level of transactive knowledge (that is knowledge about knowledge held by others) may allow the effective coordination of multiple actors and, thus, increase the (largely unconscious) 'corporate elasticity' (van Fenema, 2005). However, on the other hand, these factors also reduce the likeliness of deliberate negotiation and of dissociation from existing social practices.

4.2.3. Transformation and stabilization

Within the phase of transformation and stabilization, coordinated action has to be transformed into reliable patterns of action (or even behavior) since organizational routines can be characterized by a high-level of reliability and stability and 'brilliant improvisation is not a routine, and there is no such thing as a general purpose routine' (Winter 2003: 991).[31] While improvisation (e.g. Miner et al., 2001) and creative resource bricolage (e.g. Nelson & Baker 2005) may play an important role within the two foregoing phases, at this point of our circle it is about the transformation of one (successful) single activity (e.g. a modification of an existing practice or a new practice) into a reliable pattern of interaction. We refer to this activity as the institutionalization of new social practices. In our view this process is also a function of capabilities, since the development of routines necessarily implies the transformation of something unique into something reliable in order to allow for the leverage of resources and that is efficiency.[32]

Basically, the adequacy or inadequacy of a certain sequence of novel social action can be thought of as a function of the aspiration level (Winter, 2000). In contrast to neo classical economies, the assessment of new or modified routines, or more precisely the outcomes produced by those routines (e.g. new products, new processes) depend on the level of subjective aspiration rather than on any kind of cost-intensive optimization

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[31] Since we conceptually distinguish between routines and capabilities by making use of a clear criteria to differentiate between those two concepts, we do not follow the traditional argumentation that capabilities are routine-based and, thus, we move away from the classical view on routines and capabilities which could be summarized as follows: 'The concept of a capability as a set of routines implies that in order for the performance of an activity to constitute a capability, the capability must have reached some threshold level of practiced or routine activity. At a minimum, in order for something to qualify as a capability, it must work in a reliable manner. Taking a first cut at an activity does not constitute a capability' (Helfat & Peteraf, 2003: 999). In doing so, capabilities (not routines) can be based on improvisation and ad-hoc problem solving mechanism (Winter, 2003), but these processes of improvisation and ad-hoc problem solving mechanism are, further on, rooted in social practices and could only be understood as dissociation of these practices.

[32] As already mentioned, efficiency can be considered as one important characteristic of organizational routines. At this phase of our framework, we see the transition from exploration to exploitation (March, 1991) while the latter is efficiency or allows for value appropriation (Moran & Goshal, 1999).

(Winter, 2000).[33] Thereby, the assessment of alternatives and action are interlinked: 'A search for alternatives may be conceived as involving creation, rather than mere discovery and assessment of alternatives that are in some sense pre-existing' (Winter, 2000: 984; see also Joas, 1997). Important to note is that the 'discussions of search in the limited rationality tradition emphasize the significance of the adaptive character of aspirations themselves' (March, 1991: 72, cited from Winter, 2000: 984). In this sense, the aspiration level is also the object of an ongoing negotiation (referring to the foregoing phase), of power relations and of possibilities (resources but also other routines) at hand (Nelson & Baker, 2005).[34] Internal and external feedback and the (negotiated) perception of this feedback generated by the outcomes of new or modified routines may be the most powerful factors leading to the selection and further reinforcement of certain routines.

4.2.4. Elimination and unlearning

The last phase of our framework – elimination and unlearning – is central for preventing an organization from facing a crisis in dynamic environments that require continuous adaption (Nystrom & Starbuck, 1984). As established modalities of structuration in form of social rules and norms become shared beliefs of organizational members and reliable patterns of action are manifested in organizational routines self-reinforcing processes are fostered in the organization. Shared beliefs can become ideologies that serve as a source of stability or even structural inertia (Hannan & Freeman, 1984), so that signs and triggers of change in the organizational environment remain unnoticed by the organizational actors (Meyer & Starbuck, 1993). However, if organizations can exhibit organizational capabilities understood as the ability to conscious-reflexive action, they are able to unlearn if necessary and, thus, are able to prevent a crisis that threatens their existence. In general, organizational unlearning is a presupposition for organizational learning and change that can be conceptualized as the elimination of organizational memory in form of collective beliefs, routines and artifacts (Akgün et al., 2007). Whereas, organizational learning reflects learning new knowledge on the basis of existing knowledge structures and routines, unlearning refers to the 'discarding of obsolete and misleading knowledge' (Hedberg, 1981: 3). So, 'the aim of unlearning is not performance improvement *per se*; rather it is a catalyst for the change process' (Akgün et al., 2007: 801).

Beyond this general definition of organizational unlearning, Tsang & Zahra (2008) give an overview of corresponding aspects of existing definitions of organizational unlearning in the literature: There is a consensus that unlearning can be seen as 'a process of getting rid of certain things from an organization' (Tsang & Zahra, 2008: 1437). For example, getting rid of the existing artifacts in an organization that shape organizational processes in form of official rules, organizational tools and programming as well as current product features and lines represent the 'results of prior learning as noted by Moorman and Miner (1997, p. 93) and are closely related to the organizational knowing rather than learning (Orlikowski, 2002)' (Akgün et al. 2007: 799). Referring to

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[33] That comes close to the response of the environment as formulated by March & Olsen (1976), although we do not considered the environment as something outside the organization but rather as structure outside of the relevant individuals.

[34] In that sense, rationality and intentionality are not considered as (fully) pre-given but as constituted by action within situations and, as such, object of ongoing negotiations and modification (Joas, 1997).

the dominant definitions of organizational unlearning firms have to eliminate and replace 'obsolete, misleading, redundant or unsuccessful' (Tsang & Zahra, 2008: 1437) knowledge structures, routines and artifacts to improve their performance. Against this theoretical background, Tsang & Zahra (2008) draw the following distinction between learning and unlearning: By referring to Levitt and March (1993), Tsang & Zahra (2008, p. 1437) 'view organizational learning as the process of 'encoding inferences from history into routines that guide behavior' (Levitt & March, 1988: 320)'. In contrast, 'organizational unlearning refers to the discarding of old routines to make way for new ones' (Tsang & Zahra, 2008: 1437). Unlearning is explicitly defined as an intentional process, whereas, organizational learning can occur unintentionally. For successful elimination of an established organizational routine, its ostensive as well as its performative aspects have to be eliminated. In the first step, the structural dimension of an obsolete routine has to be replaced and the 'corresponding adjustment of work practices by the affected organizational members' (ibid.: 1443) is necessary. So organizational unlearning requires individual unlearning and the abandoning of the enactment of the discarded routine through organizational members. Especially in older organizations with long-term attachments and employees who have worked in the organization for a long time, it is difficult to overcome the legitimized but obsolete patterns of action (Tsang & Zahra, 2008). So the organizational capability to deliberately eliminate old organizational routines is of great importance for the survival of a firm.

In a process of organizational change, unlearning as the elimination of collective cognition or knowledge structures and organizational routines can be seen as an inevitable stage. From this theoretical starting point, Akgün et al. (2007) differentiate between four types of organizational unlearning by referring to the labels of Gynawali and Stewart (2003): (1) reinventive unlearning, (2) formative unlearning, (3) adjustive unlearning, and, (4) operative unlearning. These four types of unlearning reflect potential differences of the actual degree of change and the unpredictability of environmental conditions as noted by Glazer & Weiss (1993), so 'in practice, the magnitude of the changes in beliefs and routines may vary' (Akgün et al., 2007: 801).

(1) The first type of organizational unlearning – the *reinvention* – is very difficult and risky, because it requires radical and fundamental changes. Due to high-level changes in the organizations' environment and a great unpredictability, both, the existing shared beliefs of organizational members and the established organizational routines have to be eliminated. This leads to a general strategic reorientation and to an exploitation of new business domains.

(2) With *formative* unlearning the emphasis of unlearning lies on the elimination of existing knowledge structures and shared schemes to enable a reinterpretation of incoming information that reflect a high level of environmental change. While changes of organizational routines are incremental, the organization is going to tend to reformulate their strategies and to exchange their staff and, herewith, their skill base.

(3) Fundamental changes through the radical elimination of organizational routines, but only incremental changes in organizational knowledge structures characterize the third type of unlearning described by Akgün et al. (2007): the *adjustive* unlearning. Adjustive unlearning occurs when evolutionary change takes place, and innovations are developed so that the organization can introduce new business units in connection with new

product lines. Environmental circumstances are very unpredictable but uncertainty is very low.

(4) In times of relatively stable environments the last type of organizational unlearning is adequate, the *operative* unlearning where elimination of organizational knowledge structures and routines are only incremental but take place continuously. The organizational change that is fostered through this kind of unlearning is ongoing and gradual, the dominant strategy is maintained, because uncertainty is low and the environment is less unpredictable (Akgün et al., 2007).

To conclude, the ability of an organization to perform reinventive, formative, adjustive, and operative unlearning (Akgün et al., 2007) is 'an important condition for successful adaptation to environmental changes, promoting organizational learning and enhancing a firm's performance' (Tsang & Zahra, 2008) and, through this, secure the survival of an organization.

5. DISCUSSION & CONCLUSION

As mentioned, routines and capabilities are often used interchangeably or synonymous in literature and the relation between these two concepts and their connection to knowledge and learning remains largely unexplored. Additionally, the concept of routines is widely treated as being static in nature. By referring to practice- or action-based reasoning as part of the 'practice turn' (Schatzki, 2001) in sociology, a new and in many respects different perspective recently appeared in literature on organizational routines, highlighting the internal or action-related mechanisms of routines that account for their change. In that view, organizational routines or social practices have a dual nature: Routines are the recurrent social or coordinated behavior of individuals and, at the same time, they are the result of these activities. By showing, that routines necessarily imply some sort of 'effortful accomplishment' (Pentland & Rueter, 1994) of working tasks, this perspective brings dynamic elements towards the conceptions of routines and that is agency. The concept of modalities as the heart of the intermediation between structure – as the abstract and time- and space less rules and resources – and action – as the application of these rules and resources in specific situations – shows that an active and creative actor is to be presumed in order to understand the development of routines sufficiently. This is broadly based on the general and, that is, interpretative character of rules and resources and, in a strict sense, the impossibility of strict repeatability of situations (Ortmann, 2003). Important to note is that based on the concept of modalities, creative action doesn't necessarily imply fully conscious action or reflection.

From this theoretical starting point and in deviation from most definitions of capabilities in the literature, the term capabilities in this paper is reserved for and conceptualized as the conscious reflexivity of an organization or group within an organization (collective actor). In this sense, reflexivity refers to the conscious evaluation of goals, situations and consequences of established routines in order to introduce new or to change or even maintain existing routines. Since the underlying practice-based perspective views all social life as rooted in pre-reflexive social practices, connected with practical or tacit knowledge respectively knowing, capabilities can only be understood as the conscious dissociation from existing social practices. The type of knowledge connected to capabilities, in contrast to routines, is, therefore, discursive or reflexive knowledge.

By developing a framework which describes the deliberate development of routines without referring to higher-order construct, we aim to provide some clarity of the identified research gap. In this paper, we have hypothesized that the deliberate development of new routines or the change of existing routines are shaped by the use of capabilities. The process of routine development can analytically be described as consisting of four phases: interpretation and sense-making (1), coordination and negotiation (2), transformation and stabilization (3) and elimination and unlearning (4). In each of these phases, capabilities fulfill a different function or to put it different, are constituted by different processes and elements which all of them have influence on the level of conscious reflexivity as central characteristic of capabilities.

However, many important questions have not been not addressed in this paper. For example, a closer examination of the character of and relationship among the different types of knowledge and knowing connected either to routines or capabilities may help to deepen our understanding of the development of routines by capabilities as proposed here. Closely connected to this issue, we have not investigated the role of learning in any detail. Since in the practice-based perspective, learning arises from participating and experience rather than from any kind of mental activities (Gheradi, 2000), individual and organizational learning could be placed along the first three phases of our framework. Additionally, the factors influencing conscious reflexivity as presented here are still in some respect preliminary and unstructured, and should be regarded as a first approximation. For this reason, some further theoretical work is necessary in order to develop a framework to be tested empirically. Despite these issues, and others that probably could easily be noted, we consider that the presented conception of organizational routines and capabilities may reflect a more realistic approach toward organizational behavior and individual behavior in organizations which helps to better understand 'organizations as they happen' (Schatzki, 2007).

6. LITERATURE

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