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## CONTEXTUAL EFFECTS ON ROUTINE PERSISTENCE: THE CASE OF A SOCIAL SUBSYSTEM

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Organizational routines form the background and ensure the linkage of most everyday activities inside an organization. They have also been the subject of extensive scholarly inquiry over the last thirty years. Nevertheless, extant Routine Theory does not explain unequivocally their origin. It also provides only poor guidance on how to shape them in practice. In particular, there is a dilemma of how to facilitate their persistence whilst reducing the randomness of this process on the one hand, and, on the other, to maintain its effectiveness, dependent on the right degree of management involvement (and the associated cost). This article drafts one of the possible approaches to address this issue, referred to as incubation, and identifies factors influencing routine persistence (based on a thorough review of the literature), specific to the social subsystem of the organization. The identified set of factors may be further used to steer the routine incubation process.

**Keywords:** organizational routines, social system, routine persistence, incubation

### 1. INTRODUCTION

It is assumed that organizational routines are “repetitive, recognizable patterns of interdependent actions, carried out by multiple actors” (Feldman, Pentland, 2003, p. 95). Despite the availability of other approaches to routine conceptualization, in which they are defined as programs or standard operating procedures (Simon, 1976; March, Simon, 1958; Cyert, March, 1963) or “organizational meta-habits, existing on the substrate of habituated individuals in a social structure” (Hodgson, 2003, p. 375) in the form of “dispositions [that] energize conditional

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patterns of behavior within an organized group of individuals, involving sequential responses to questions” (Hodgson, 2009, p. 26), it seems that the recalled definition by Feldman and Pentland (2003) is widely recognized and used by researchers.

The notion of organizational routines (as defined above) intertwines with many well-researched themes in management science. For instance, routines constitute a subset of behavioral artifacts in most models of *organizational culture*. They are frequently associated with standard operating procedures, co-creating the degree of formalization and/or standardization, i.e. the dimensions of an *organizational structure*. Effective routines tend to be labeled also as *best practices* and as such replicated inside (multisite) organizations.

The term “organizational routines” was introduced for the first time to the conceptual apparatus of the management sciences in 1940 by E. Stene (1940). Routines were also subject to research within the behavioral decision theory (Simon, 1976; March, Simon, 1958; Cyert, March, 1963). The scientific inquiry on organizational routines gained a remarkable momentum after Nelson and Winter (1982) published their seminal work – “An Evolutionary Theory of Economic Change”. Early routine research provided preliminary explanations regarding their chief characteristics, functions, effects on organization and first attempts at their conceptualization. It primarily concerned the so-called operational routines, i.e. “those governing short-term behaviors” (see Strużyna, 2013, p. 30). From the turn of the 20th and 21st centuries, scholars began to pay more attention to the replication and transfer of routines (largely driven by the works of Winter and Szulański, e.g. 2001, 2002, 2012), models of their internal structure and dynamics (Feldman, 2000; Feldman, Pentland, 2003), methodology of routine research (Pentland, Rueter, 1994; Pentland, Feldman, 2005; Becker, 2005; Pentland 2003a, 2003b), the role of artifacts in routine dynamics (enhanced significantly by D’Adderio, 2003, 2008, 2009, 2011) and endeavors to identify methods for their purposeful and effective formation (e.g. Danner-Schröder, Geiger 2016, Kandora, 2017). Additionally, other types of routines, including the so-called creative ones, characterized by their variability and the necessity for recurring alignment of their performances with the peculiarity of the situation in hand, were researched as well. In this case, it seems that this stream of routine research was strongly influenced by the development of the concept of dynamic capabilities, initiated by Teece, Pisano and Shuen (1997), due to a strong relationship between both concepts<sup>1</sup>.

Although research on organizational routines is part of contemporary trends in management science, it tends to be criticized for providing poor advice towards business practice (Kaiser, Kozica, 2013). Hence, it should motivate scholars to address practice-relevant issues when planning and conducting their research on routines in order to better bridge the gap between theory and practice.

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<sup>1</sup> More details on the conceptual links between both concepts can be found in J. Strużyna, 2013.

Analyzing the literature on routines, one can distinguish two divergent views on the emergence and evolution of routines in organizations<sup>2</sup>.

The first, *evolutionary*, is close to Hayek's (1980) concept of spontaneous order (*ger. spontane Ordnung*). According to it, the interdependent activities of the organizational participants can follow patterns that do not have to be devised by anyone (Witt, 2011). They develop spontaneously as a result of mutual collaboration and interaction with the environment (Malik, Probst, 1981), evolving in consecutive iterations over time, eventually converting into taken-for-granted collaboration patterns (Feldman, Pentland, 2003). It is an unplanned, involuntary process, subject to only a small degree to managerial control, in which participants are relatively free to make their choices, being at the same time influenced by the organizational context. The context represents a kind of ecosystem in which the evolution of routines takes place. Its influence seems to be important, but from the evolutionary perspective, routine participants, who both shape and perform the routine, do not mindfully take advantage of these effects.

In line with the second view, *engineering*, routines can be designed and made persistent by means of formal organizational regulations (Geiger, Schröder, 2014) and managerial command (Witt, 2011). In the most extreme version, as in some works of Carnegie School, organizational routines are identified with standard operating procedures or programs, providing predictable responses to *ex ante* identified situations (Simon, 1976; March, Simon, 1958; Cyert, March, 1963). The elaboration on routine origin by Geiger and Schröder (2014) is close to such line of reasoning, though less extreme. They claim that organizational routines are "collective performance patterns that are enacted on the basis of rules and their situation-specific interpretation" (Geiger, Schröder, 2014, p. 179).

This conceptualization of routine emergence and development assumes that the management is actively and intensively involved in the design, implementation and control of their performance, ensuring their compliance with the espoused pattern (fixed in the rules) and dealing with any variances. When the variance (espoused routine – actual performance) becomes small over time, the management steps back and decreases the intensity of supervision, but ensures routine embeddedness and performance control through controlling and motivation systems.

Summarizing, both approaches differ in terms of (1) the degree of intentionality (purposefulness) of this process, (2) the intensity of management involvement and (3) the strength of the contextual effects on routine development and the degree of its conscious usage (see Table 1). In the evolutionary approach routines emerge and develop largely in a random manner<sup>3</sup>, under strong influence of the dynamics

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<sup>2</sup> Some parts of this section have also been partially published in M. Kandora (2017) "In search for effective methods of routine formation".

<sup>3</sup> This statement should not be reflected as a critique towards the evolutionary perspective, but rather a statement of facts since, as F.A. Hayek (1952) informs, many social entities, such as language or money, are the result of human activity, and not of human design.

taking place in the organization's social subsystem. Contrarily, seen through the engineering lens, the course of a routine is institutionalized through formal rules, intensive training and managerial supervision and aims at ensuring consistency between the espoused routine and its performances.

Both approaches have their advantages and drawbacks. The advantage of the evolutionary approach is the low absorption of managerial time and attention, and in the case of the engineering one, the high likelihood of compliance between the espoused routine and its performances. The disadvantage of the evolutionary approach seems to be the randomness of the routine emergence and related dynamics, and of the engineering one, the excessive absorption of managerial attention (associated undoubtedly with substantial overhead costs and costs of missed opportunities).

Table 1. Divergent perspectives on routine development

	Evolution	Incubation	Engineering
Key principle	Spontaneous order without prior design	Persistence through mindful crafting of contextual conditions	Mindful design & implementation or routines complemented with tight control
Purposefulness	Low	High	High
Management involvement and related costs	Low	Medium	High
Usage of contextual effects	High- unconscious	High-deliberate	Low-formalization only

It seems that the advantages of both approaches could be leveraged in a less radical concept, labeled for the purposes of this study as *incubation*. In this proposal, the development of routines should advance in an evolutionary manner. However, this evolution should take place in a purposefully crafted (by management) organizational ecosystem, which plays the role of a kind of incubator, setting conditions that accelerate the formation of routines in line with managerial intentions and their (routines') further development in the expected direction.

In this concept, senior management influences the evolution of routines indirectly. Steers their development through mindful shaping of the organizational context. Steps back from intensive supervision and does not perpetually engage in detailed design and preservation of routines, whilst being fully aware of the direction they (routines) follow. The effectiveness of such an approach to routine formation will largely depend, as it seems, on the knowledge about which factors might influence *routines' persistence* and the relative strength with which they

contribute to it. These factors can be compared to the steering parameters of the mentioned incubator, the variables of its incubation function, whose changes in intensity may accelerate or slow down the time of reaching the expected degree of routine persistence.

In line with the above, this paper represents an attempt to outline a draft of an approach to analyze the contextual effects on routine persistence and, in particular, aims to identify factors in the social subsystem of an organization which may influence routine persistence. It draws on a thorough review of extant literature.

The secondary aim of this article is to sketch a draft conceptual framework for the analysis of the contextual effects on routine persistence and to provide a brief account of the models used.

The article consists of four major sections. Following a brief introduction, the general conceptual framework for further analysis and the outline of the research approach were presented. Next, drawing on a literature review, a set of possible routine shaping factors was identified within an organization's social subsystem, complemented by a brief explanation of their likely impact on routine persistence. The final section of this paper contains main conclusions and suggests directions for further research.

The identification of contextual effects on routine persistence contributes to both management science and management practice. Seen through the theoretical lens, it will facilitate the development, refinement and, above all, systematization of knowledge about contextual, social variables that impact the persistence of organizational routines. From the practitioners' perspective, it will enable the development of approaches and methods for routine incubation that will facilitate their formation in line with managerial intentions.

Furthermore, it is important to analyze such factors in-depth, as their intensity can be deliberately steered by the management in order to indirectly influence the formation and persistence of routines. The word "indirectly" requires particular attention here. The point is to eventually work out a routine incubation model, which will ensure the development of selected routines in the desired direction in an evolutionary way. In other words, it is supposed to leverage the advantages of both approaches and limit their drawbacks, i.e. limit the randomness (evolution) and reduce (but not eliminate entirely) the intensity and costs related to management involvement (engineering). It is to be less absorbing for the management, which, as already mentioned, should navigate the formation of routines not directly, but through the conscious shaping of the contextual conditions. This aspect deserves special attention since extant literature provides evidence of unwanted formation of routines, when the intensity of managerial involvement in their development decreased (Becker, Billinger, Gorski, 2015; Knott, 2003; Kaplan, 2015). A routine incubation model that meets the above criteria, would contribute significantly to the normative vein of management science and provide useful advice for managers which the Routine Theory seems to be lacking (Kaiser, Kozica, 2013).

In accordance with this line of reasoning the analysis conducted in this paper contributes partially to the delivery of a larger research program intended to identify an incubation model for organizational routines, by means of which their development could be purposefully steered. This program fully acknowledges Cohen and Bacdayan's (1994, p. 554) statement, that "while the knowledgeable design and redesign of routines presents a likely lever for those wishing to enhance organizational performance, the lever remains difficult to grasp because routines are hard to observe, analyze, and describe". Nevertheless, it represents an effort to "grasp the lever" and provide business practitioners with useful guidelines on how to do it.

## **2. IDENTIFYING FACTORS CONTRIBUTING TO ROUTINE PERSISTENCE – DRAFT OF THE RESEARCH APPROACH**

### **2.1. Outlining the conceptual framework for further analysis**

In order to narrow down the search for factors affecting the persistence of organizational routines, reference should be made first to their internal structure and related dynamics. The first proposals for such a model were presented by Feldman (2000) and Feldman and Pentland (2003) (see Fig. 1-1a). Over time they were further detailed in the works of Pentland and Feldman (2005) (Fig. 1-1b) and D'Adderio (2011) (Fig. 1-1c). It should be emphasized that the basic structure of the model (i.e. the identification of the ostensive and performative aspects of a routine and their interplay) found significant acceptance among the scholars involved in routine research and underwent only minor alterations over time. Most of them (adjustments of the model) were related to the role of the so-called artifacts and their effects on both the ostensive and performative aspects of a routine.

The ostensive aspect of a routine is understood as the way it is perceived and interpreted by its participants, i.e. what it is and how it should be enacted (Feldman, Pentland, 2003). On the other hand, the performative aspect depicts the actual performances of a routine (Feldman, Pentland, 2003). Artifacts are in turn "physical manifestations of the organizational routine" (Pentland, Feldman, 2005, p. 797). What is more, a growing conviction (amongst scholars) can be noted that artifacts are not merely manifestations but "actively shape the course of routines" (D'Adderio, 2011, p. 208). The collection of artifacts entangled in routine performance is practically infinite (Pentland, Feldman, 2005). They facilitate learning and understanding (forms, process maps, schedules, heuristics of activities, etc.) and are sometimes used during design and adjustments in work organization (checklists, forms, operational procedures) and their preservation (e.g. when configuring and fixing the course of an espoused routine in an IT system or by means

of a particular arrangement of space and technological devices utilized in its execution) (D'Adderio, 2011).

As a conceptual framework for subsequent analysis the proposal of D'Adderio (2011) presented in Fig. 1-1c will be further adopted. It positions the artifacts in the center of the routine model and acknowledges their interaction with both the ostensive and performative aspect of a routine. This model seems to represent an attempt to find the right balance between two extreme views on the interplay between artifacts and routines. One of them leans more toward an almost deterministic influence of artifacts on routines, and in the second one their role is underestimated (D'Adderio, 2011). They are therefore two extremes of the continuum and represent interactions that are rare in practice.

In D'Adderio's (2011) conceptualization, artifacts are not just "passive" objects that reflect the course and/or essence of the routine or its elements. Contrariwise, they participate in recursive interactions between the ostensive and performative aspects and constitute a coequal element of a routine's internal structure.

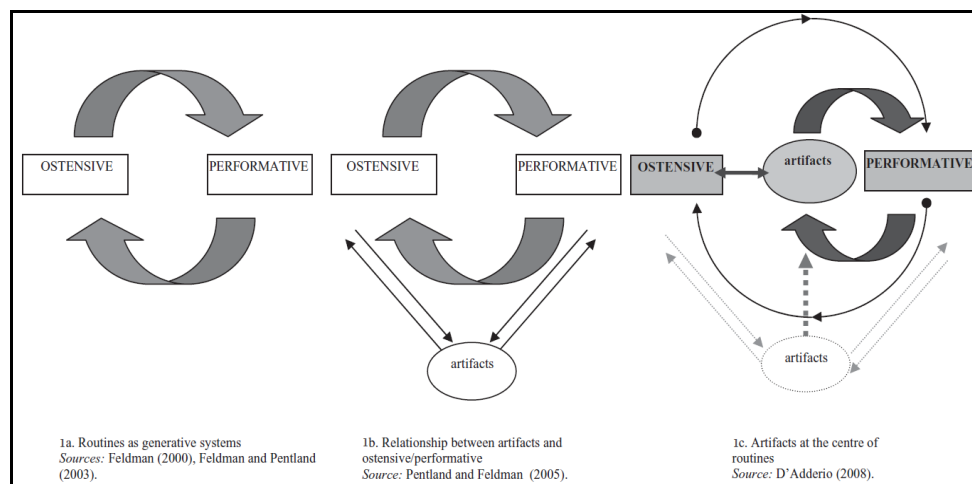


Fig. 1. Models of routine structure and its dynamics. Source: L. D'Adderio, 2011, p. 224

## 2.1. Research approach

In line with the model adopted for further analysis, the impact of potential factors contributing to routine persistence should (for methodological precision) be described from the point of view of both (1) the ostensive aspect and (2) the performative aspect. Moreover, acknowledging the positioning of artifacts in the center of routines and referring to their role in the (mentioned) routine dynamics model, it can be assumed that there is a high likelihood of finding amongst them (artifacts) some that contribute to routine persistence. Going further, because organiza-

tional routines are embedded in the context of an organization, their persistence is expected to be dependent on contextual effects (Feldman, 2003; Howard-Grenville, 2005; Narduzzo, Rocco, Warglien, 2000). In other words, the organizational context represents a promising area to seek for various factors contributing to the persistence of organizational routines. In the further analysis, however, factors will be studied for which (1) the literature provides evidence of their impact on routine persistence and (2) which can deliberately be controlled by management (e.g. by means of approaches or methods recognized in management science), since the ultimate goal of this inquiry is to provide partial input to the knowledge on how to indirectly but purposefully steer the process of routine incubation.

When reviewing the literature on routines one can encounter (mainly) case studies or theoretical articles in which researchers present various contextual factors influencing the persistence of organizational routines. They cover, among others, the effects of technology, including operational technology (Edmondson, Bohmer, Pisano, 2001; Howard-Grenville, 2005) and information technology (D'Adderio, 2003; 2011; Orlikowski, Robey, 1991; Orlikowski, 2000), organizational structure (Geiger, Schröder, 2014; Davis, Eisenhardt, Bingham, 2009; Felin et al., 2012, pp. 1364-1365), social settings (individuals, groups, culture) and agency (Foss, Foss, 2000; 2005; Witt, 2011; Howard-Grenville, 2005; Eisenberg, Riley, 1988; Aime et al., 2010; Bertels, Howard-Grenville, Pek, 2016) as well as the way a particular organization is managed, including the leadership style and intensity of managerial involvement in the selection and formation of routines (Knott, 2003; Becker, Billinger, Gorski, 2015; Kaplan, 2015).

The contextual effects on routine persistence are particularly acknowledged in Feldman's (2003) case study of a budgeting routine, where despite several attempts to adjust its course (by organizational participants), the routine was still enacted the "old" way. Going one step further, Howard-Grenville (2005) attempts to develop a general model of these impacts by examining a technology roadmapping routine at a chip manufacturer. Recognizing previously identified (by Pentland, 1995) routine persistence contingencies, technological, coordination and cultural structures, she introduces the concept of routine *embeddedness*<sup>4</sup> (in those structures) and comes to the conclusion that the stronger the embeddedness of the routine in the context, the lower its variability over time (Howard-Grenville, 2005). It seems therefore that the evidence provided by the literature justifies searching for routine persistence factors in the context of an organization.

For the purpose of further exploration the organizational context will be represented by the elements of Leavitt's (1965, p. 160) organization model (with the modification by Bielski, 1996, i.e. inclusion of the management subsystem as central to this model). As the collections of artifacts (as conceptualized in the Routine Theory) and elements of the organizational context partially overlap (Fig. 2), the

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<sup>4</sup> The concept of embeddedness is elaborated on in detail in J. Howard-Grenville, 2006, p. 631.



set of routine artifacts is assumed to be a subset of the artifacts specific to other contextual areas.

Summarizing, the search for routine persistence factors will be carried out in the organizational context, and identified characteristics must take into account the strength and type of impact on both the ostensive and performative aspects.

The discussed research approach is aiming to provide, in first step and in reasonable time, sufficient evidence to formulate hypotheses about the impact of individual factors on routine persistence. It will be utilized subsequently to collect, at a later stage of the program, data from a larger sample of organizations in order to conduct afterwards a confirmatory (not exploratory) factor analysis to determine the contribution of each factor to the degree of routine persistence.

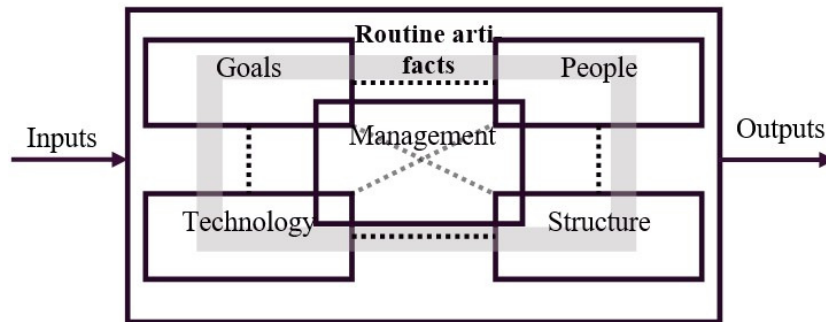


Fig. 2. The overlap of routine artifacts and elements of the organizational context. Source: own work based on M. Bielski, 1996

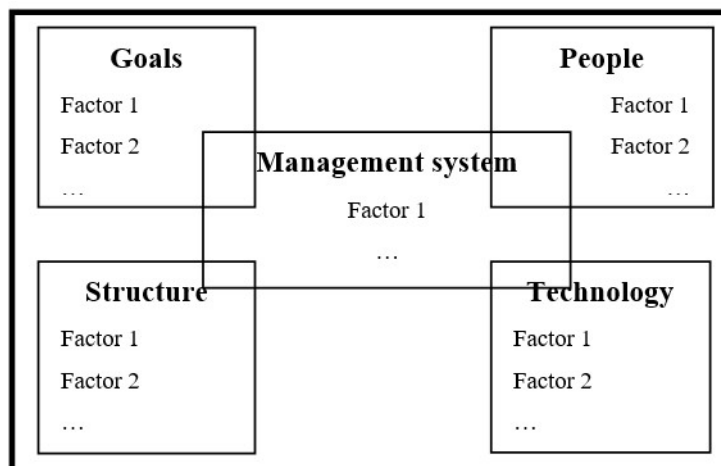


Fig. 3. Areas for analyzing contextual effects on routine persistence. Source: own work based on Bielski, 1996

The detailed conceptualization and operationalization of the identified factors is not the subject of this paper, as it will be done later, prior to the preparation of a data collection tool. The key criterion for the identification of the factors is here the availability of evidence (in the literature) about their potential influence on routine persistence, understood as the average degree of variation of routine performances in a set period of time and which can be further operationalized by means of the measures for sequential variety as developed by Pentland (2003a, 2003b).

### **3. CONTEXTUAL EFFECTS ON ROUTINE PERSISTENCE IN THE SOCIAL SUBSYSTEM**

#### **3.1. Key individuals**

The social subsystem of an organization plays a crucial role in preserving organizational routines. People and their habits are the “substrate” on which routines emerge and develop (Hodgson, 2003, p. 375). Therefore, it is surprising that in many publications the relation between the individual and routine level (collective) is underestimated (Nelson, Winter, 1982; Levitt, March, 1988). Levitt and March (1988, p. 320) state for instance that routines are “independent of the individual actors who execute them and are capable of surviving considerable turnover in individual actors”.

Although organizational routines are a collective phenomenon, it is hard to imagine that the activity of individuals would not affect their enactment (Felin, Foss, 2005; Becker, Billinger, Gorski, 2015). It is even claimed that the persistence of certain capabilities built of routines may be related to the acquisition of key individuals (Lacatera et al., 2004), or in other words, learning-by-hiring (Song, Aleida, Wu, 2003). Thus, key individuals seem to play a key role in influencing the persistence of organizational routines. The notion of key individuals relates in particular to the founders of an organization, the managers who actively shape its internal order (Foss, Foss, 2000) and take decisions of long-term impact (Felin, Foss, 2005, p. 449). On the one hand, they co-create the organizational context (in all its dimensions) in which routines emerge and develop, and on the other, they recurrently adjust routines through their directional behavior (Witt, 2011; Piórkowska, Stańczyk, 2014, p. 791). Whether a routine will be flexible or persistent depends largely on their design skills (Bapuji et al., 2012). The behavior of key individuals sets the standards and guidelines for action followed by others. They influence the group’s identity. They outline success patterns. There are numerous examples which support this view, predominantly within the empirical school of management science (Bielski, 1996, pp. 31-32), and theories of leadership elaborate on various mechanisms of influence.

As Feldman and Pentland (2003) demonstrated, routines are not entities that change solely under external influence. They evolve (artifacts) in recursive performances over time where the ostensive and performative aspects interact with each other. However, whether particular deviations from the espoused pattern will become structurally incorporated into subsequent routine performances, depends often on the degree of influence and power of individual participants of the routine or its stakeholders. The authors underline clearly that “some actors, but not others, have the power to turn exceptions into rules” and power translates here to the possibility “to anoint [particular] performances as legitimate or appropriate” (Feldman, Pentland, 2003, p. 110). Practical examples of such interactions are described in the case studies of Howard-Grenville (2005) and S. Kaplan (2015). Howard-Grenville (2005, p. 634) emphasizes also, referring to the already mentioned concept of embeddedness, that “the more strongly embedded a routine is in other structures, the greater command an individual must have over these structures in order to produce change over time”.

It seems that a fairly good summary of the impact of key individuals on routine was provided by Aime and colleagues (2010). After analyzing about 412 matches of the San Francisco 49ers NFL team, which over 24 years perfected a tactic (a collection of harmonized routines) labeled as West Coast Offence, the authors concluded that “routines are stable to the loss of key employees, but the advantages derived from them are not” (Aime et al., 2010).

It seems that the presented evidence of key individuals’ influence on routine persistence may be synthesized in the following hypothesis:

*H1: The more intense the involvement of key individuals in routine design, the more likely it is to become persistent and matching the initial design.*

The involvement of key individuals at the design stage, at the very beginning of the routine formation process, ensures legitimization of the routine and / or its expected course. It reduces the number of alternatives when searching for the right pattern. However, it must be complemented with employees’ participation (in the design process) in order to ensure their commitment, sense of ownership and motivate them to take responsibility for a proper implementation of the routine in practice. As some case studies show (e.g. Kandora, 2017), co-creation of the espoused routine (by key individuals and other participants) facilitates subsequently a smooth clarification and communication of the ostensive aspect to other routine participants.

An obvious question arises at this point, why not propose to keep the high degree of key individuals’ involvement throughout the whole process of forming and making a routine persistent? In this case the answer must be related to the superordinate goal of this research, i.e. the design of an incubation model which accelerates routine persistence and development in an evolutionary way, characterized by a low intensity of managerial interventions but in line with managerial expectations, through a skillfully steered contextual influence.

### 3.2. Individual skills

Felin and Foss (2004; 2005) emphasize that the analysis of the social subsystem, especially at the individual level, can provide a better understanding of the origin of routines and valuable input for developing approaches to their deliberate shaping.

One of the essential elements of the social subsystem are the skills of organizational participants. Organizational routines partially build on those skills (Hodgson, 2009; Cohen, Bacdayan, 1994). They “[routines] are the means through which individual skills are triggered and energized” and serve as “repositories and carriers of knowledge and skill” (Hodgson, 2009). Also, individual skills become sometimes framed in the context of collective activities (Narduzzo, Rocco, Warglien, 2000).

Thus, the relationships between individual skills and the persistence of routines seems to be reciprocal. From the routine incubation perspective, however, those effects should be analyzed first which relate to the impact of skills on routines.

Unfortunately, “the link between individual skills and organizational routines has not been examined systematically” and “there is no clear understanding of how individual-level competencies relate to firm-level routines and capabilities” (Salvato, Rerup, 2011, p. 474). Some studies show that even quite simple and standardized routines can vary substantially, depending (among other factors) on the degree of actors’ experience (see Pentland’s et al. (2011) study of the invoice processing routine). Others do not provide evidence of such relationship. Analyzing the level of variability of a customer complaints handling routine at a ventilation systems manufacturer, Becker, Billinger and Gorski (2015) state that the results of the research do not support a clear statement about the impact of individual skills on routine variability. In some of the analyzed periods it was significant and in others it was not. The authors therefore conclude that this influence is modified by other factors specific to the individual level and other contextual areas (Becker, Billinger, Gorski, 2015).

Despite the unequivocal findings in the literature, one cannot resist the impression that some impact of individual skills on routine persistence is taking place in business practice. Certain routines cannot simply be enacted properly when the individual skills are insufficient, which is particularly evident in the field of team sports, surgeries in hospitals or disaster-responding teams (see e.g. Danner-Schröder, Geiger, 2016). On the contrary, the involvement of employees in the enactment of routines that do not properly use their knowledge, experience or talents (i.e. when individuals are overqualified for the type of work to be done) may be demotivating for them, and the routine performances may even become sabotaged. Precisely, as shown by Danner-Schröder and Geiger (2016), it is mainly not about skills and knowledge themselves, but about their subtle combination with experience in action, the so-called knowing (Orlikowski, 2002, p. 251), which de-

velops over time during multiple applications of knowledge in actual performances (e.g. during training and execution of activity in actual conditions).

This leads to the following hypotheses:

*H2: The greater the knowing of the routine participants, the higher the routine persistence.*

*MV1: The influence of the degree of knowing on the degree of routine persistence is modified by the goodness of fit between the type of routine and the skill level of routine participants.*

In addition, the skill level of routine participants may impact (as well) the type of routines which can be effectively enacted. Creative routines might require broad and interdisciplinary skills, extensive experience, complemented, on the one hand, with self-reliance, and on the other, the ability to collaborate in a team. In the case of operational and standardized routines, such high skills are rather not necessary (or can be even counterproductive as already mentioned).

### **3.3. Interactions and communication amongst routine participants**

Referring to the evolutionary view on routine origin (labeled sometimes as well as the so-called invisible hand explanation), Felin and Foss (2005, p. 451) state that well-structured patterns are “the unintended and unforeseen result of interdependent actions of agents” and come up with the example of “local imitative behavior among employees”. As such, “interactions among individuals and processes within organizations may provide insights into how capabilities and routines emerge” (Felin et al., 2012, p. 1632). This is not an isolated opinion since other researchers also emphasize the importance of the impact of mundane mutual interactions on the formation of routines (Eisenberg, Riley, 1988; Felin et al., 2012, p. 1363). These interactions concern both direct relations between organizational participants as well as between them and the various groups they belong to. For example, deviations from a well-accepted way of enacting a routine “tend to be informally sanctioned by social ostracism against the deviator” (Witt, 2011). Interactions among organizational participants can often take the form of collective learning processes affecting subsequent routine performances (March, Simon, 1958, p. 182; Cohen, Bacdayan, 1994, p. 556)

In all interactions among organizational participants the quality of communication is essential, with the communication of intentions as to the expected course of a routine being particularly vital. As stressed by Eisenberg and Riley (1988), everyday conversations and meetings that may seem insignificant at first glance, if repeated often enough, shape patterns of interaction, conventions and habits that can be difficult to change. It also seems that the type of communication will most likely have an impact on the formation of routines.

As studies show, direct communication is not the only communication type that contributes to routine formation. At times, routines may also evolve through the use of intermediaries (such as e.g. kanban cards in lean manufacturing) which can facilitate the coordination between routine participants, e.g. by signaling to other actors to start working on the next task. When fixed in artifacts intermediaries obtain symbolic meaning. As shown by Bapuji and colleagues (2012), if intermediary objects clearly communicate intentions, they lead to the formation of a so-called “strong routine”, i.e. the case when “a given action more often meets the expected response across interactions”. If intermediaries communicate them vaguely, a routine exhibits greater variability. When direct, face-to-face communication can be ensured the likelihood of stronger routine persistence is greater. The findings from Yamauchi’s and Hiramoto’s (2016) study of customer service routines in Tokyo’s sushi bars prove that even in the case of different perception about the espoused routine (by its participants) direct face-to-face communication facilitates its performance through iterative exchange of remarks between participants about the current understanding of its essence. Moreover, if direct communication is complemented with a skillful use of intermediaries, overall communication efficiency further increases, as it is the case e.g. in agile project management where SCRUM boards are often used during the daily stand-ups of the project team and everybody involved has an ongoing visibility to the progress of the sprint.

The conducted analysis allows the assumption that routine emergence and persistence will be positively correlated with (1) the frequency of interaction between potential routine participants, (2) the intensity of collective learning processes, (3) the degree of group cohesion (formed by routine participants), (4) the directness (more direct less formal) and synchronousness (synchronous - asynchronous) of communication between routine participants. It seems that the set of factors should be also complemented with (5) the dominant type of relationships between routine participants (operational, functional, hierarchical) and (6) their physical proximity (close to each other - remote). However, it is expected that the variable (6) will strongly correlate with the variable (1), (3) and (4), and therefore should be treated *ex ante* as a mediating variable. This leads to the following set of hypotheses:

*H3: The greater the frequency of interaction between routine participants, the greater its persistence.*

*H4: The more common the collective learning processes are for routine participants, the greater the routine persistence.*

*H5: The greater the degree of group cohesion (consisting of routine participants), the greater the routine persistence.*

*H6: The more direct and synchronous, and the less formal and asynchronous, is the communication among routine participants, the greater the routine persistence.*

*H7: When the dominant type of relationships between routine participants is operational, routine persistence will be greater than in the case of functional and hierarchical relationships.*

*MV2: The smaller the physical distance between routine participants, the greater the routine persistence. This is because it facilitates direct contacts, unrestricted and synchronous communication and influences the increase of group cohesion.*

The hypotheses formulated, and in particular the directions of dependence between the factors and the dependent variable (the degree of routine persistence) assume that, in general, the stronger the bonds between the routine participants, the greater the likelihood of a high degree of routine persistence. Cooperation becomes easier. Communication is more direct and open and strengthens the foundation for open feedback and, thus, intensifies collective learning processes. The development of strong ties may in turn occur evolutionarily, involuntarily and spontaneously, but it can be strongly facilitated through the effects of a purposefully crafted organizational context, and among others appropriate work organization (structure), the right technological support (technology), a sense of a common goal (goals and values) and, perhaps above all, trust. Trust, however, requires mutual respect and is built most simply by keeping promises. This in turn should result from the norms and values underpinning a deliberately shaped organizational culture.

### 3.4. Organizational culture

An organizational culture constitutes an important element of the organizational social subsystem. When attempting to thoroughly describe the relationship between organizational culture and organizational routines, the researcher encounters quite a problem. This relationship is poorly described in the literature on routines. Moreover, both phenomena seem to partially permeate each other. For instance, both in the case of organizational culture and organizational routines, artifacts can be identified and it seems that “the artifacts emerging from organizational routines are part of cultural artefacts” (Stańczyk, 2014, p. 48). Organizational routines can be perceived as culturally conditioned (through norms and values). In some interpretations they are even considered as cultural artifacts (if one acknowledges that cultural artifacts can be of physical, linguistic and behavioral type). For example, a particular approach to customer service by the company’s salesforce or workers’ reaction to a potentially accidental event at the shop-floor can be seen as a manifestation of dominant cultural norms and values associated with a customer or health and safety respectively. It is therefore not surprising that some scholars claim that “organizational culture is a broader phenomenon and routines are part of it” (Stańczyk, 2014, p. 47). Additionally, when the culture of an organization is seen through the lens of its coordinating effects (more on this in Kieser, Walgenbach,

2003, pp. 129-135) then the cultural impact is expected to be stronger in those areas where the activities of the organizational participants are interdependent, which undoubtedly is the case of organizational routines.

According to Bertels, Howard-Grenville and Pek (2016) “culture plays a role in shaping how routines are performed through the specific actions it enables or condones, and it can influence the emergence or suppression of new patterns of action”. The cultural impact on routines is expected thus to manifest strongest during attempts to integrate new routines that are inconsistent with the cultural context of the organization.

Analyzing the implementation of a new compliance routine in a North American oil company, the authors identified that the cultural impact on the integration of a new routine consisted of three types of activities: (1) molding, (2) shielding and (3) shoring. Molding “influences a routine by shaping the artifacts and expectations associated with its performance” (Bertels, Howard-Grenville, Pek 2016). Shielding involves various cultural strategies of action meant to protect workarounds or hindered routine performances from scrutiny (e.g. by rationalizing them) and shoring encompasses activities aiming at protecting the integrity of the routine (Bertels, Howard-Grenville, Pek 2016).

Successful and persistent introduction of a routine, as it was the case in one of the plants (Northsite) of the abovementioned oil company, needs to be preceded by managerial adjustments of the culture, involving the removal of cultural strategies of action that are inconsistent with the routine subject to adoption. Contrarily, as the evidence from other sites shows, the performances of a routine might be different than expected by the management but effectively shielded from scrutiny by the routine participants (Bertels, Howard-Grenville, Pek, 2016).

The values and norms deep-rooted in a given organizational culture will therefore be conducive to some patterns of action whilst hampering others (Canales, 2013, Tucker, Edmondson, 2003; Bruns, 2009), even those officially legitimated by senior management (Reynaud, 2005). Therefore, the goodness of fit between a given routine and the cultural values and norms is supposed to exhibit strong effects on routine persistence and leads to the hypothesis below.

*H8: The greater the goodness of fit between the patterns of action specific to a given routine and the cultural values and norms, the greater the persistence of such routine.*

#### 4. CONCLUSIONS

- Building on the above literature review the following conclusions can be drawn:
- at each level of the social subsystem of the organization (individual, group, cultural) factors can be identified which contribute to routine persistence,



- he identified factors concern the intensity of key individuals' involvement in the process of designing routines, the skill level of individuals, the intensity of interaction and communication (together with its type), the dominant type of relationship between individuals, the degree of group (consisting of routine participants) cohesion, the intensity of collective learning processes, and the goodness of fit between a routine's action pattern and the prevalent cultural values and norms,
- it is likely that some of the identified factors will covariate (e.g. directness of communication and intensity of collective learning processes),
- the effects of the identified factors are, most probably, moderated by other variables specific to other organizational areas (e.g. the impact of immediacy and synchronousness of mutual communication is supposed to be partly conditioned by the spatial distribution of organizational participants) as well as other characteristics of the social subsystem itself.

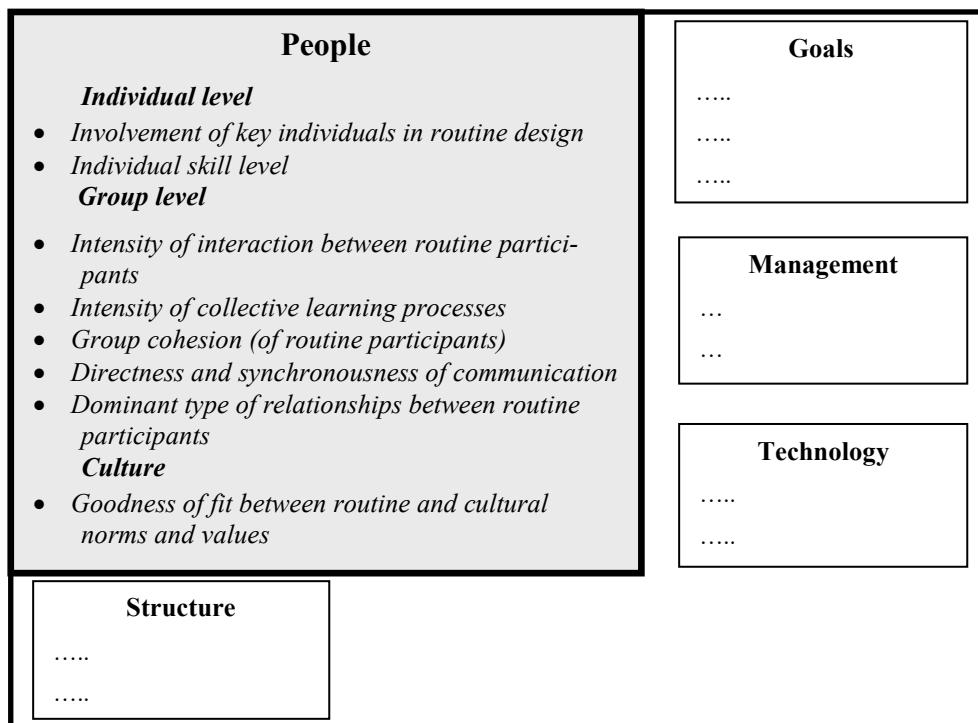


Fig. 4. Factors impacting routine persistence in the social subsystem

The conducted analysis delivered only factors specific to the social subsystem of an organization (see Fig. 4). If such a set of factors will be widened by others, relevant to the remaining subsystems, then it can be a starting point for further

research in which, after having identified lower-level variables (constituting main factors), it will be possible to estimate the strength of their impact on routine persistence. Thus, the knowledge about the strength of the influence of particular factors on the targeted, though largely evolutionary, process of incubating routines will be, metaphorically speaking, the theoretical basis for developing the construction of their incubator. Additionally, a detailed conceptualization and operationalization of factors and the dependent variable has to be made in due course.

Further studies of contextual effects on routine persistence could be oriented towards identifying the *variability of the strength of contextual impact depending on the type of routine*. It can be assumed that, for instance, the impact of information technology on the persistence of routines will be stronger in the case of remote customer service or heavily automated order picking processes, and less relevant during the preparation of business cases for investment applications. This could be further advanced through developing a typology of clusters of routines being similarly affected by particular groups of contextual factors.

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## RUTYNOTWÓRCZE ODDZIAŁYWANIE PODSYSTEMU SPOŁECZNEGO ORGANIZACJI

### Streszczenie

Rutyny organizacyjne spajają większość codziennych działań uczestników organizacji. Są również, od ponad trzydziestu lat, przedmiotem szczególnego zainteresowania nauk o zarządzaniu. Dostępna baza teoretyczna nie wyjaśnia jednak jednoznacznie ich genezy. Dostarcza też jedynie ubogich wskazówek dotyczących ich kształtowania w praktyce. Pojawia się w szczególności dylemat, jak je utrwalać, aby z jednej strony ograniczyć przypadkowość tego procesu, a z drugiej zachować jego efektywność, w tym racjonalny poziom zaangażowania kierownictwa. W niniejszym artykule zasygnalizowano jedno z możliwych podejść do rozwiązania tego problemu zwane inkubacją i dokonano identyfikacji czynników rutynotwórczych (na podstawie przeglądu literatury przedmiotu), właściwych podsystemowi społecznemu organizacji, które stanowią podzbiór parametrów sterujących tym procesem.

**Słowa kluczowe:** rutyny organizacyjne, czynniki rutynotwórcze, podsystem społeczny, utrwalanie rutyn, inkubacja