

EXPLORING THE INTERNAL STRUCTURE AND DYNAMICS OF ORGANIZATIONAL ROUTINES USING LANGUAGE AS A METAPHOR

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INTRODUCTION

Organizational routines are essential elements of organizational life (March and Simon, 1958; Nelson and Winter, 1982). Although we have now a good understanding of the effects of organizational routines on organizations (for a complete review see Becker, 2004), we still know and understand very little about their internal dynamics and structure (Pentland and Feldman, 2005). Knowing how organizational routines work and what they are made of is paramount, however, if one wants to be able to influence, design, and manage them, and to understand their flexibility, stability, transferability, and efficiency (Pentland and Feldman, 2005).

As “repetitive, recognizable patterns of interdependent actions, carried out by multiple actors,” organizational routines are combinations of actions and representations (Feldman and Pentland, 2003). Recognizing this important duality, Feldman and Pentland (2003, 2005) reconceptualized organizational routines as generative, dynamic systems, whose internal structure consists of three interactive elements: an ostensive part, a performative part, and artifacts. The ostensive aspect of an organizational routine represents the abstract generalized idea of the routine. This aspect serves as a guide to routine participants in their performance, helps them to account for what they do and to refer to a known set of patterns in their activities and interactions with others. The performative aspect of a routine represents the enactment of the routine, the various specific actions taken by specific individuals, in specific places at specific times. These aspects may be codified, or prescribed, enabled or constrained by various artifacts (Feldman and Pentland, 2003).

Patterns thus exist in different forms in organizational routines: patterns are found in the artifactual representations of routines, as in the sequential steps of standard operating procedures or the design of a production line; there are also patterns in the sequences of events that occur during performance; finally, patterns exist in the minds of routine participants. Because patterns found in performances and artifacts of routines are easily observable, they have lent themselves to substantial empirical and theoretical exploration. We still know very little, however, about what goes on in the minds of routine participants. The concept of ostensive aspect only suggests what these patterns do—they serve as a guide, reference and justification to routine participants in their activities, and interactions with one another—but not what they actually are specifically.

Three different types of patterns seem to coexist in the minds of routine participants. The first stems from our observations that routine participants are able to talk about what they do. In this instance, patterns are simply the categorical representations routine participants use to describe what their activities involve. Routine participants also have implicit knowledge about what to do. Here, patterns are implicit rules that routine participants have developed through repeated performances. These rules guide and inform performance and are stored in the procedural memory of participants (Cohen and Bacdayan, 1994). Lastly, routine participants, also seem to know when and how to do the right things. Here, patterns refer to the social and

cultural norms routine participants must know to perform the routine adequately. These three types of patterns appear to play different roles in the way routines are performed, but have not yet been explicitly differentiated and formalized.

To further our understanding of the structure of routines and their internal dynamics, I propose in this paper to explore further how these patterns fundamentally differ and relate, and identify their roles in performance. To do so, I draw from the field of linguistics, and use language as a metaphor for organizational routines to formalize what these patterns are, and develop a theoretical framework that provides a novel way to conceptualize the internal structure of routines and explain their dynamics, while maintaining the important duality between actions and representations. In essence, I propose that a routine, as a language, consists of the implicit and explicit knowledge of a lexicon, a grammar and the socio-cultural norms that guide and inform performance. Routine performance is likened to a conversation among routine participants who draw from these elements to perform their activities.

INTERNAL STRUCTURE OF ORGANIZATIONAL ROUTINES

In this section, I draw analogies between language and organizational routines, and use these analogies to propose an internal structure for organizational routines (see Table 1).

Insert Table 1 about here

Language as a metaphor for organizational routine

The use of language as a metaphor for organizational routine is not new. Analogies drawn between the two domains, however, have only been formally developed so far for one specific dimension of language: its grammar. Pentland and colleagues, for instance, developed the grammatical metaphor into a rigorous model for describing and theorizing about organizational processes in general and organizational routines in particular (Pentland, 1994; Pentland and Reuter, 1994). Using the language metaphor, the authors showed that organizational routines, as repeated sequences of events, can be represented by a set of abstract symbols structurally related according to some grammatical rules, the same way the syntax of the English language describes the sequences of words in a sentence (Pentland, 1995; Pentland and Reuter, 1994). Defined as such, grammars of routines only represent the patterns found in routine performances, however, and there remains to know in what form such patterns are held in the minds of routine participants and used to guide and inform performance in context.

Linguists have dealt with similar issues, but are far more advanced in their understanding of the relationships that exist between the cognitive and communicative aspects of language. Their theoretical developments, I argue, may help us understand how these relationships work in the context of organizational routines.

Routine lexicon

In linguistics, the lexicon of a language is its vocabulary represented by words and expressions. The lexicon of an organizational routine consists of “moves” (Pentland, 1992, 1995). Moves are combination of actions that “have a distinctive unitary bearing on the situation.” All possible moves of a generic routine form its lexicon. Although generic routines

may share part of their lexicon (the moves “pay with Visa card” and “pay with MasterCard” are a very common moves, for instance), they also have a set of unique moves that differentiate them from one another. French and English, for instance, borrow many words from each other, but are distinct languages.

As a reflection of their time and environment, lexicons of organizational routines like those of natural languages are dynamic: moves as words become obsolete (e.g. the word “afore,” and the move “telex a document” are very little used if not at all), and new moves and words appear periodically (e.g. “to google” has appeared as a new word and move). Both lexicons of natural languages and generic routines are alike in their compiling a finite set of agree upon elements. Unlike natural languages, however, organizational routines do not have yet dictionaries, or exhaustive compilations of all possible moves.

Routine grammar

Moves as words may be assigned to broader categories according to their generic functions. In linguistics, these categories are referred to as syntactic categories (Cook, 1988; Newmeyer, 1983). Verb, noun, phrase verb, are examples of such categories. How words and syntactic constituents combine together to form sentences is described by a grammar. Routine performances consist of sequences of moves, which may be likened to sentences (Pentland, 1992, 1995). Moves and specific sequences of moves may also be categorized into generic processes referred to as subroutines or performance programs (March and Simon, 1958). For instance, the moves “pay with Visa card” and “pay with MasterCard” may be assigned to the subroutine “making a payment.” The grammar of an organizational routine describes how moves and subroutines are related, and reflect the patterns of regularities found in routine performances.

Routine performative competence

Routine performative competence refers to the knowledge and abilities necessary to perform an organizational routine in context. Routine performative competence mirrors communicative competence in linguistics, which was introduced to account for the fact that mere knowledge of the structure of a language does not imply knowing how to use it (Canale and Swain, 1988; Chomsky, 1965; Hymes, 1971). In linguistics, communicative competence may be represented by three distinct but related elements (Paradis, 2004): implicit linguistic competence, explicit linguistic knowledge and pragmatic competence, and I discuss below how these elements relate analogically to the context of organizational routines.

Implicit Routine Competence. Language speakers acquire part of the knowledge about the rules of formation of their language or grammar through systematic verbal performance. The implicit ability of language speakers to construct appropriate sentences is referred to as implicit linguistic competence (Chomsky, 1965). Such knowledge is acquired incidentally and stored in procedural memory (Paradis, 2004). During verbal communication such knowledge is used automatically without conscious awareness.

In the context of organizational routines, routine participants also possess implicit knowledge about the structure of the routine they engage in, which I shall refer to as implicit routine competence by analogy. Cohen and Bacdayan (1994) found indeed experimental

evidence that rules of performance of organizational routines are stored in the procedural memory of participants. Because these rules, which in our terminology are represented by a grammar, are internalized and not consciously available, they are used automatically during performance and as such can only be inferred through observation. Implicit routine competence may thus explain the traditional notion of routines as automatic responses (Ashford and Fried, 1988; March and Simon, 1958; Nelson and Winter, 1982), automation simply being the instantiation of implicit knowledge of the routine grammar. Within the bounds of the grammar, however, routine participants can be and most often are reflective in their choice of moves. Because procedural memory has a low rate of decay (Bahrick, 1984; Bunch, 1936), and is very task specific, implicit routine competence should contribute to the apparent stability of organizational routines.

Explicit routine knowledge. Adult speakers of a natural language have some explicit knowledge of the rules of formation of their language. They are able, for instance, to recognize and discuss the construction of a sentence in terms of its syntactic constituents (verb, subject proposition, etc.). Such knowledge is consciously held by individuals in declarative memory and can be verbalized on demand. Similarly, routine participants are able to discuss what they do. Explicit routine knowledge allows them to communicate about, plan and formalize their activities (e.g. in the form of artifacts such as standard operating procedures). Empirical studies of routines that rely on interviews of participants typically tap such knowledge.

Neurolinguistic research has shown that implicit linguistic competence and explicit linguistic knowledge are distinct; they coexist but neither one becomes the other (Paradis, 2004). This may also be true for implicit routine competence and explicit routine knowledge as evidenced by studies that both surveyed routine participants about their activities and observed them in actions. In these studies, routine participants' description of the level of variety of their work and the actual observed level of variety of their activities were found to be negatively correlated (Pentland, 2003a, 2003b, 1994).

Pragmatic routine competence. Speakers of a language need more than their knowledge of the language grammar and lexicon to be able to communicate effectively. Speakers also need to be able to interpret a wide range of paralinguistic cues (social norms, facial expressions, gestures, etc.). Such abilities are represented by the concept of pragmatic competence (Paradis, 1998; Chomsky, 1980). Explicit and implicit linguistic competence explains why a speaker knows that: "Why are you making such a noise?" is a possible sentence and "Why you are making such a noise?" is not. Pragmatic competence explains whether the speaker who says: "Why are you making such a noise?" is telling someone to stop or simply asking a genuine question (Cook, 1998: p. 14).

To perform a routine, routine participants need to know the routine moves and how to relate them to one another, but they also need to be able to choose the most opportune set of moves given the situation they face. Such a choice is guided and informed by the shared understanding routine participants have developed through repeated performances about what should be done, how and why (Feldman and Rafaeli, 2002). Pragmatic routine competence captures this mutual understanding, and includes the explicit and implicit knowledge of the institutional, socio-cultural rules and norms that inform and guide routine participants' actions during performance. The concept of performative competence refines Feldman and Pentland's

(2003) ostensive aspect of an organizational routine in its explicit differentiation between the explicit and implicit knowledge components, and its inclusion of the pragmatic dimension.

Routine performance

Routine performance consists of the actual series of interdependent moves carried out by specific people, in specific places, at specific times, and may be likened to a conversation among routine participants. During performance, routine participants engage in “exchanges” of series of moves resembling exchanges of sentences in a conversation. Within the bounds of the grammatical rules of the routine, participants improvise their moves according to what the others do and have done, and the nature of the situation at hand (Hutchins, 1991; Orlikowski, 2000). As in a normal conversation, sequences of moves may be started but not completed, some sequences may also have to be repeated, some may also be interrupted by other sequences of moves belonging to other routines.

Routine artifacts

When we think of language, two important artifacts come to mind: dictionaries and prescriptive grammars. Both dictate how language should be used, but are also the reflection of what has come to be agreed upon usage. Similarly, artifacts are important elements of organizational routines because they provide occasions for structuration, determining and providing resources for actions (Giddens, 1984). Routine artifacts govern and support routine participants’ actions to different degrees, and the degree to which a routine artifact constrains or affords action depends on how the artifact has been appropriated by routine participants (DeSanctis and Poole, 1994) and is reflected in routine performative competence.

Routine participants

The last, but arguably the most important element of any organizational routine is the people who participate in it. People do more than just taking part in routines; they also have a bearing on how and why routines exist and are performed. Routines are indeed performed by “people who think and feel and care. Their reactions are situated in institutional, organizational and personal contexts. Their actions are motivated by will and intention.” (Feldman, 2000: p. 614). Explicitly accounting for individuals in routines is a reminder of the important role played by both individuals and collective agency. Routine participants individually and collectively shape routines through the reflective self monitoring of their actions, according to the situations they face, who they are, and their roles and places in their organizations (Feldman and Rafaeli, 2002; Feldman and Pentland, 2003; Howard-Grenville, 2005).

Routines participants are also important because the community they form is not fixed; people come and go. New participants bring new ideas, motivations and points of view, but they also need to acquire the competence necessary to perform the routine effectively. Departing participants take away with them their knowledge and experience, and the relationships they have formed with others.

CONCLUSION

This paper used the metaphor of language to develop a theoretical framework that describe and explain the internal structure of organizational routines. Conceptualizing organizational routines as a language maintains the important notion of routines as combinations of actions and representations, and provides a vocabulary to describe and differentiate among the patterns found in routine performances and the patterns held in the minds of routine participants.

Advancing our conceptual knowledge of what routines are and how they work inevitably requires more empirical research into the cognitive and performative aspects of routines, and how the two relate. The theoretical framework proposed in this paper should help students of organizational routines in their empirical investigations and theoretical developments.

REFERENCES AVAILABLE FROM THE AUTHOR

TABLE 1. Analogies between language and organizational routine

Organizational routine	Language
Lexicon Set of unitary acts of the routine or moves	Lexicon Words and expressions
Grammar The rules describing the patterns of regularities found in routine performances	Grammar The syntactic rules describing the formation of sentences
• Subroutines	• Syntactic constituents
Routine performative competence Knowledge and abilities necessary to perform a routine in context	Communicative linguistic competence Knowledge and abilities necessary to effective verbal communication
• Implicit routine competence: the implicit knowledge inferred from individuals' systematic routine performance	• Implicit linguistic competence: the implicit knowledge inferred from individuals' systematic verbal performance.
• Explicit routine knowledge: explicit knowledge of the routine grammar and lexicon	• Explicit linguistic knowledge: explicit knowledge of the language grammar and its lexicon
• Pragmatic routine competence: implicit and explicit knowledge of the institutional, socio-cultural rules and norms that inform and guide routine participants' actions during performance.	• Pragmatic competence: implicit and explicit knowledge of sociolinguistic rules, implicit and explicit ability to convey meaning through and infer meaning from paralinguistic clues
Routine performance Actual series of moves performed by specific actors, in specific places at specific times	Conversation A reciprocal verbal exchange between two or more individuals
Routine artifacts <i>Example: standard operating procedure, manuals, written policies</i>	Artifacts <i>Example: dictionaries, thesauruses, prescriptive grammars, locations</i>
Routine participants	Language speakers

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