

CHAPTER

# 6

## The Complexity of Simple Rules in Strategic Decision Making: Toward an Understanding of Organizational Heuristics

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### ABSTRACT

The way organizations cope with uncertainty in strategic decision making is prominently discussed. Concepts such as heuristics and simple rules are gaining increasing attention in strategic management research. However, despite their importance, little is known how heuristics and simple rules operate. Our qualitative study reveals that, first, strategic decisions consist of three basic elements: single rules, rule patterns, and emotional handling. Second, we find that firms develop generalizable rule patterns which follow a sequential order of inter-linked rules. Based on the findings we introduce the concept of organizational heuristics as inter-linked rule patterns drawing on organizational experience.

**Keywords:** Organizational heuristics; rule pattern; simple rules; strategic decision making; strategy-as-practice

## Introduction

Strategic decision making is a central and critical process for organizations (Gary, Wood, & Pillinger, 2012; Mintzberg, 1978; Schwenk, 1995). Starting from Simon's (1960) famous notion of bounded rationality, scholars aim at exploring how decisions under uncertainty are made (Bingham & Eisenhardt, 2011; Eisenhardt & Zbaracki, 1992; Eisenhardt, Furr, & Bingham, 2010; Langley, Mintzberg, Pitcher, Posada, & Saint-Macary, 1995; March, 1994; Mintzberg, 1971).

Recent studies exploring strategic decision making under uncertainty suggest that firms learn so called "simple rules" by gaining process experience while strategizing (Bingham & Eisenhardt, 2011; Bingham & Eisenhardt, 2014; Bingham & Halebian, 2012; Maitland & Sammartino, 2014). Moreover, it is argued that their fast and frugal applicability renders simple rules as superior processes of decision making since they allow for spontaneous adaptation to novel circumstances (Davis, Eisenhardt, & Bingham, 2009). The core of these simple rules consists of heuristics, here understood as cognitive shortcuts, which are used when information, time, and processing capacity are limited (Bingham & Eisenhardt, 2011; Bingham & Halebian, 2012).

However, while Bingham et al. (2007) point to an important phenomenon in strategic decision making, their empirical studies lack a more in-depth understanding of the mechanisms of simple rules. Yet, studies in cognitive psychology provide some insight into the functioning logic of heuristics. On the one hand Kahneman and Tversky (1972, 1973) show in experimental settings that heuristics guide individual behavior, leading to inferior decisions as compared to decisions based on statistical reasoning. On the other hand Gigerenzer et al. (Gigerenzer & Brighton, 2009; Gigerenzer & Gaissmaier, 2011; Gigerenzer & Todd, 1999) argue that heuristics lead to superior decisions in highly dynamic settings such as sports. These insights from cognitive psychology into individual heuristics raise the question how heuristics on an organizational level operate and inform strategic decision making (Gigerenzer & Gaissmaier, 2011).

Based on a qualitative study analyzing the strategic decision making processes of firms operating in highly dynamic markets, we contribute to the strategic decision making debate by uncovering key components of organizational judgment: *single rules*, *rule patterns* and *emotional handling*. Building on these insights we develop a framework of organizational heuristics. These

organizational heuristics are sophisticated constructs consisting of different rules which are consecutively ordered and processed. Such rule patterns allow for complexity reduction by slicing down the decision-problem at hand into a manageable set of alternatives. Revealing the mechanisms of these heuristics and their emergence shows that heuristics are neither good nor bad in decision making; they are simply without alternative since accurate decisions based on full information are impossible to make. Furthermore we contribute to the organizational learning literature by unfolding what organizations learn by gaining process experience. Organizations seem to learn not only the content of rules, but also ways to link such rules into sophisticated rule patterns for possible applications in similar situations drawing upon different sources of prior experience.

Our chapter is organized into four main sections: First we discuss literature on strategic decision making as well as studies in cognitive psychology on the functioning of individual heuristics. In the following section we introduce our qualitative study and the methods of data collection and analysis. The fourth section presents the findings from our qualitative study. Finally, we discuss our findings and develop our concept of organizational heuristics.

## Strategic Decision Making under Uncertainty

Research focusing on the question how firms exercise judgment and arrive at strategic decisions has a long history in strategic management and organizational studies. Building on Simon's (1960) famous notion of bounded rationality, scholars are interested in understanding how managers and firms make strategic decisions while facing limited information processing capacity, ambiguous information (Cyert & March, 1963), and uncertainty about environmental circumstances (Eisenhardt & Bourgeois, 1988). All these studies have in common that they depart from the classical conceptualization of rational decision making which implies choosing an optimal solution under conditions of full information.

In a similar vein, strategic management research argues that strategic decision making processes exhibit characteristics such as: "... novelty, complexity and open-endedness ... and therefore make it fundamentally impossible to follow presumptions and prior plans" (Mintzberg, Raisinghani, & Theoret, 1976, p. 250).

Langley et al. (1995) build on this idea by showing that such processes are substantially driven by intuition and are fundamentally interwoven with other processes of the organization. Recent developments in strategy research point to the processual, idiosyncratic, and erratic nature of strategy making and explore how strategy evolves as practice (Jarzabkowski, 2003; Jarzabkowski & Spee, 2009; Whittington, 2011).

The most recent perspective on strategic decision making by Bingham, Furr, and Eisenhardt (2010) shows that firms operating in highly dynamic markets, arrive at strategic decisions by relying on so called simple rules. Following Eisenhardt and Martin (2000, 1106), detailed decision making routines and procedures only apply to strategic decisions in moderately dynamic environments, whereas in highly dynamic environments firms have to "... rely on quickly created new knowledge and iterative execution to produce adaptive, but unpredictable outcomes".

The concept of heuristics has a long standing tradition in cognitive psychology where the debate centers around the renowned research of Kahneman (e.g. 1973, 1972, 2011, 2012) and Gigerenzer (Gigerenzer & Brighton, 2009; Gigerenzer & Gaissmaier, 2011; Gigerenzer & Todd, 1999). On the one hand Kahneman and Tversky (1973) show in experimental settings that heuristics lead to inferior decisions as compared to decisions based on statistical reasoning. On the other hand Gigerenzer et al. (Gigerenzer & Brighton, 2009; Gigerenzer & Gaissmaier, 2011; Gigerenzer & Todd, 1999) argue that heuristics lead to superior decisions in highly dynamic settings such as sports. Gigerenzer et al. (Gigerenzer, 2008; Gigerenzer & Brighton, 2009; Gigerenzer & Gaissmaier, 2011) show that individual heuristics provide a robust and legitimate way of judgment which even outperforms complicated rational models, by relying on clues provided by the context at hand.

All these research streams point to the importance of heuristics in decision making. However, as most research stresses the importance of heuristics, little is known so far how heuristics actually function in organizations (Bingham & Eisenhardt, 2011; Bingham et al., 2007). In addition, Eisenhardt et al., who claim the superiority of simple rules in strategic decision making justify their argument by referring to Gigerenzer's studies. Strategic decisions, however, show very different characteristics as the individual decisions studied by Gigerenzer (Vouri & Vouri, 2014): While Gigerenzer studied individual decisions, strategic decisions are usually decisions taken by groups with more than one actor involved in the decision making process. This also implies that

organizational decisions are based on idiosyncratic organizational experience, norms, and values which are often only partly explicit and understood. Second, strategic decisions have a substantially different time horizon: while in sports games participants have to decide within fractions of seconds, strategic decisions usually allow for more time for information gathering and evaluation. As a result, an exploration of the way how strategic decisions are actually made in an every-day organizational context is of utmost importance (Jarzabkowski, Balogun, & Seidl, 2007; Jarzabkowski & Spee, 2009). From an organizational perspective it is therefore interesting to gain a fine grained understanding of the functioning mechanisms of simple rules and the way they are used in strategic decision making. Since heuristics are learned over time and are based on experiences the question arises how heuristics get established, and, even more importantly, how they are altered and changed over time.

## Methods

To examine heuristics within their everyday context we conducted a longitudinal case study (Eisenhardt, 1989; Yin, 2003). Given the general lack of research on organizational heuristics and simple rules we combined theory elaboration and theory generation (Eisenhardt & Graebner, 2007) in our analysis. Our study unfolded in two phases: The first phase of our study draws on the collection of interview data, whereas the second phase of the study is an ethnographic case study with multiple sources of data.

### FIRST PHASE

First we were interested to learn if heuristics play an important role in strategic decision making at all. We chose to approach ten companies, which we sampled according to the following characteristics: (1) Industries the companies are engaging in are generally believed to be dynamic and fast changing, (2) each company operates in a distinct industry, and (3) main strategic actors within each company should be accessible for interviews. Characteristic (3) should ensure that our interviewees would be formally able to make strategic decisions. We interviewed 16 key strategic actors of these firms in order to understand how they arrived at strategic decisions. The interviews lasted between 60 and 90 minutes and were conducted in a semi structured way.

## SECOND PHASE

In the second and main phase of our study we conducted an ethnographic case study with embedded units of analysis (Langley et al., 2011). The aim was to follow real-life decision making processes and not to rely exclusively on the retrospective accounts of key informants. Following a theoretical sampling logic (Glaser et al., 1967) we chose the firm EntreuX in order to gain deeper insights into its strategic decision processes. Based in Europe it operates digital voucher discounting portals in a variety of countries such as Brazil, Spain, or Russia.

We had the opportunity to participate in all relevant activities of the firm as an embedded observer on a regular basis for six months. We spend around three days per week at the company for four months. During this time we had access to and participated in strategy meetings during which employees discussed strategic projects and important decisions were made. Strategy meetings were of particular interest since (1) all projects happened under time pressure, with little prior information (2) the strategic processes took place within the same context, which provided a rich criteria overlap and allowed for a comparison of decision streams (Miles & Huberman, 1994). In total we observed 26 meetings. We analyzed our data in two main steps: First, we started with an open first-order coding of the interview transcripts and observation field notes. Second we proceeded with a second-order analysis to cluster the first-order codes with regard to similarities and differences (Gioia, Corley, & Hamilton, 2012) in an effort to identify decision constructs.

## Findings

### DISENTANGLING DECISION MAKING

Analyzing our data revealed that three distinct constructs played a central role in strategic decision making processes: These three emerging pillars are (1) single rules, (2) rule patterns, and (3) emotional handling.

#### (1) *Single rules*

The analysis of our data shows that similarly to the findings of Bingham et al. (2007), idiosyncratic rules, particularly if/then rules, play an important role in strategy making under uncertainty. For example Laura (Executive) works at FineVest, a company which operates in the financial service industry and has just started an

important rebranding project. When asked about what information she is considering, she expresses, due to her and her teams' experiences with past projects that they learned one important lesson:

One never relies on what [information] is already present in-house. Laura (Executive)

This means that no matter how big the challenge and how high the time pressure is, they will make sure not to rely exclusively on the information already known within the company.

This example shows that these rules evolve around thresholds and are standalone constructs providing direction for decision making. In that sense they reduce complexity and ensure that important cues are included or excluded in the decision making process. Table 1 provides more examples of such rules from our interview and observational data.

#### (2) *Rule pattern*

When dealing with uncertainty in strategy making, decision makers not only learn *single rules* but also more complex patterns, i.e. combinations of rules. During our observation at EntreuX we could identify rule patterns. For example, being new to the Italian market, EntreuX is confronted with the challenge of acquiring partner networks, which are important entities, because each network represents a big group of retailers and provides offers as well as commissions. However, networks provide offers only if EntreuX can offer slots on their website with high customer visibility in return, such as sliders. Sliders are big parts of a website, located at

**Table 1:** Examples of Single Rules and Their Characteristics.

Single Rules	Illustrative examples
<ul style="list-style-type: none"> <li>• Gives direction what to do</li> <li>• Gives direction what not to do</li> <li>• Gives guidance</li> <li>• Simple constructs (one rule)</li> </ul>	<p><i>Interviews:</i></p> <ul style="list-style-type: none"> <li>• First you try to be rational then you play on time.</li> <li>• Successful companies operate on five markets.</li> <li>• You need a huge network to get fast good information.</li> <li>• 1 question everything in principle.</li> </ul> <p><i>Observation:</i></p> <ul style="list-style-type: none"> <li>• If we get 10 sales that is good.</li> <li>• If we use an offer of one affiliate network make sure that you update the background.</li> <li>• If you have a blog which is priority 7 you have something from that, if it is less you will not get so much PR.</li> </ul>



the top and therefore highly visible. Since sliders require much space on websites only a limited number can be placed in a website which makes these slots highly attractive. Widgets on the other hand are usually located at the site of a webpage showing three offers in a small manner at once. During our observations, Julia and Linda discussed the use of sliders in the following way:

[...]

Julia: "Yes, we need five sliders and keeping them as negotiation power, it's worth it ..."

Linda: "Ok, some offers [...] for Easter, for instance Expedia [are] only for 72 hours, quick offers ..."

Julia: "We can upload this fast into widgets, [...] for these quick coupons widget is best. And also push it in Facebook. What is the commission we [get]?"

Linda: "Don't know."

Julia: "Check that."

[...]

Julia: "[...] because we have to see whether it's worth it to push it in Facebook with a certain budget. [For now] we start with a small budget [...]."

As this example shows several rules were applied to tackle the problem. There is a rule of thumb of how many sliders should be used to sustain negotiation power over partners. Implicitly they decide on basis of how long an offer is valid, and in which way it should be promoted. For short offers the rule of thumb explicates that either the offer will be promoted in a widget or on Facebook or in both distribution channels at the same time. To decide which option is the most favorable, a rule of thumb is applied which puts the revenue in relation to the budget.

In difference to the above specified single rules, such rule patterns not only provide a direction but they describe a process in the sense of what to do next. These rule patterns are again derived from experiences, but show a higher degree of complexity than single rules. While single rules are standalone constructs giving a hint where to look or what actions to undertake, rule patterns provide additional guidance of how to slice down problems into a manageable set of options.

### (3) Emotional handling

Finally our analysis suggests a third pillar of decision making, one that is closer to the original understanding of judgment as a sort of feeling or intuition (Akinci & Sadler-Smith, 2012). In case of emotional handling the decision is not based on a rule but on feeling, more precisely gut feeling. In LawRder for example, an international law firm, the core strategic projects evolve around negotiating the best possible deals for their clients. In that vein, Rick, a partner, recollected a challenging situation, where he decided based on his feeling:

[...] And there are people and consultants, they gain a lot by exchanging facts again and again and this forth and back can go on and on and be very time consuming. I am actually relatively result-driven and have in my opinion a quite good feeling about what works in the situation at hand [...]. Rick (Partner)

Here decision makers are referring to their feeling in order to explain their decision making procedures. Also in the strategy meetings of EntreuX we observed instances during which decisions have been legitimized based on a feeling rather than reasoned explanations: In a country meeting of the German team which we observed Julia argued that "[...] by *klicking through the website I got the feeling that no shop had any text and that has to change.*" She later justified her decision to rely on her feeling here by saying that she would know if there is something wrong without necessarily having clicked through each single shop. Opposed to the rules identified above, in those cases no generalizable rule could be derived. Instead respondents consistently pointed out that they are not able to specify further what actually led them to decide in the described way. Furthermore, proponents could not provide any "rational" explanation – understood in the traditional sense (Kahneman & Tversky, 1972) – for why they were making use of these constructs in their decision making process.

## Organizational Rule Patterns

As our data analysis illustrates, organizations develop so-called rule patterns in strategic decision making which consist of single rules which are coupled into distinct sequences. Particularly three distinct rules could be identified that played a major role as part

of more complex rule patterns: *information gathering rules*, *termination rules* and *information evaluation rules*. Following our data analysis each of these rules played a different role in the strategic decision making process. For instance, one of EntreuX's challenges is to decide which new markets should be penetrated. During a meeting we observed, Lisa arrived at a decision by asking herself and the team the following questions:

[...] We have to know how deep the internet penetration is. Is it still in the early stage or is it in the middle maturity or is it like in the late mature stage? [...] Then if you have an affiliate network it is easier for you to enter the market [...]. Are there any requirements from the governments themselves? [...] Another thing is regarding the language. [...] Plus the search engine as well. So if it's Google or if it's not Google also can alter. Apart from it we also check on the infrastructure of the e-commerce. [...] And based on those research then we classify which countries we should enter and which one we should not enter.

As Lisa explains, the decision to enter a country or not depends on specific information cues and she uses specific rules to guide her search for information. Hence we code this type of rule as *information gathering rule*. Using such rules significantly speeds up the information gathering phase since the search range is already set. As soon as they had the information on the maturity of the market, they stopped the search based on this information. Hence she terminated a first round of information gathering procedure. Consequently, we coded these rules as so called *termination rules* since they provide decision makers with guidance when sufficient information has been gathered. Termination rules stop the search process and thereby again speed up the decision making process. On the basis of these search results, she further stated that they checked whether there already were some active partner networks in the market. As the statement illustrates, they now started to search for new information again, but this time more focused, based on the already elaborated information. Thus she actually described an additional information gathering rule. The termination rule employed at the beginning of the decision making process is hence followed by a new, but more focused information gathering rule. Again the information gathering procedure terminated as soon as it was clear whether there were

partners or not. Next, she questions: "*are there any requirements from the governments themselves?*," and which is the native language of the country. The latter information gathering rule is important since for English speaking countries the architecture of the websites already exists, therefore a country roll out is easier to accomplish. In addition she questions if a country uses more than one native tongue, then "*so, instead of you probably need only one site with one language and maybe three resources to maintain the site, you have to have three languages and it's maybe nine resources.*" So, based on these insights search terminates and provides ground for a next information gathering procedure searching for the main search engine used in the respective country. Search terminates after they work out that a sufficient amount of internet penetration is processed by Google: "*If it is Google [...]*" Based on these results she is again describing a new information gathering rule: "*we also check on the infrastructure of the e-commerce [...]*." Finally, as soon as all necessary information seems to be aggregated, she and her team evaluate the results of the information gathering procedure and decide: "*And based on this research we then classify which countries we should enter and which one we should not enter.*" This statement marks a final step in the decision making process: She and her team make sense out of the information they have gathered and outline what possible decision might result from this. We therefore decided to code this rule as a so called *information evaluation rule*. Information evaluation rules help decision makers to make sense out of the information gathered which may ultimately result in a decision to be taken. Again, information evaluation rules speed up the decision making process.

Interesting to note is that we not only could identify different types of rules (information gathering rule, termination rule, information evaluation rule) but also that these rules were consistently used in a specific sequential order. The stringing together of information gathering rules and termination rules leads to a narrower focus and reduces the amount of perceived complexity and makes strategic problems "processable." The observed rule pattern therefore describes a processual treatment of the strategic problem the firm is facing. It is not only learned what rules are to be employed, but also the order in which certain rules are processed is an outcome of a learning process. Thus in contrast to single rules, rule patterns do more than just providing directions. Table 2 provides additional examples of identified rule patterns.

**Table 2:** Examples of Rule Patterns and the Different Types of Rules Identified.

Rule Pattern	Illustrative examples
<ul style="list-style-type: none"> <li>• Gives direction</li> <li>• What and how to do</li> <li>• Procedure</li> <li>• Guidance</li> <li>• consists of specific sequence of specific single rules</li> </ul>	<p><i>Interviews:</i></p> <ul style="list-style-type: none"> <li>• How to build a good team? What employees do we need? We check those with experience and without experience. Those without previous experience would learn the new technology better, that is why we decided to take them.</li> </ul> <p><i>Observations:</i></p> <ul style="list-style-type: none"> <li>• Do we have new offers? New codes? If not, check the competitors. What do they have? Is it interesting for us? Contact those shops.</li> </ul>
<b>Information gathering rules</b>	
Illustrative examples	
<ul style="list-style-type: none"> <li>• Search guidance</li> <li>• Limits search set</li> <li>• Speeds up information gathering</li> <li>• Defines pre selection of where to look at and where not to look at</li> </ul>	<p><i>Interviews:</i></p> <ul style="list-style-type: none"> <li>• So what is the core problem here?</li> <li>• What are the main strategic sectors?</li> </ul> <p><i>Observations:</i></p> <ul style="list-style-type: none"> <li>• So do research on blogs, websites related to startups.</li> <li>• We have to search for direct links with shops.</li> </ul>
<b>Termination rules</b>	
Illustrative examples	
<ul style="list-style-type: none"> <li>• Search terminates by certain criteria</li> <li>• Usually implicit</li> <li>• Reduces time spent on search</li> <li>• Supposed to put focus on relevant information</li> </ul>	<p><i>Interviews:</i></p> <ul style="list-style-type: none"> <li>• Is there a monetary implication [then]</li> <li>• [check] always in correspondence with market conditions.</li> </ul> <p><i>Observations:</i></p> <ul style="list-style-type: none"> <li>• Any time you come across new exclusive coupons [...]</li> <li>• If we know it is exclusively for us, then [...]</li> </ul>
<b>Information evaluation rules</b>	
Illustrative examples	
<ul style="list-style-type: none"> <li>• Final step of decision making process</li> <li>• Evaluation of information</li> <li>• Decision based on criteria</li> </ul>	<p><i>Interviews:</i></p> <ul style="list-style-type: none"> <li>• [it seems] that first of all we have to work on the product.</li> <li>• From this we deduce the actions.</li> </ul> <p><i>Observations:</i></p> <ul style="list-style-type: none"> <li>• Since e-commerce currently related to Moscow and St. Petersburg [...], so use name in subtext.</li> <li>• We take them, [since] we work with them in Italy and Poland</li> </ul>

## Discussion: Toward an Understanding of Organizational Heuristics

As our findings have shown, strategic decision making processes rely on multiple rules and patterns of rules, each playing its distinct role in the decision making process. Our research is therefore an attempt to advance theories of strategic decision making and addresses the question how decision makers and organizations come to strategic decisions when coping with uncertainty. The emerging insights reveal that the process of strategic decision making is far more complex than the notion of simple rules suggests (Bingham et al., 2007; Bingham & Eisenhardt, 2011; Eisenhardt & Sull, 2001). Instead we can show that decision making under uncertainty basically consists of three main categories: Single rules as standalone rules which provide a direction into unmarked terrain, rule patterns as organizational heuristics and emotional handling as a more intuitive way to deal with the situation at hand. Our findings reveal that in the absence of certainty organizational heuristics were without alternative in decision making. In untangling complex rule patterns our study also contributes to literature on strategic learning: Following our insights, strategic learning refers to the capability of firms to abstract rule patterns from experience.

## Rule Pattern as Organizational Heuristics

Following our insights into strategic decision making, the concept of rule pattern is far richer than previous studies building on simple rules suggest. We can identify three categories of such rules within the observed rule patterns: *information gathering rules*, *termination rules* and *information evaluation rules*. Information gathering rules are rules which guide the search for information; here, the rule indicates the search space for relevant information. While on the one hand information gathering rules help in reducing uncertainty, they might also create uncertainty, because of the underlying selection principle (Luhmann, 1995). When choosing fast where to look at, one chooses also to ignore other potentially relevant information spaces and therefore might miss important factors and developments (Luhmann, 1995). As a result, selecting

information on the bases of information gathering rules speeds up the decision making process but also makes it vulnerable to potential blind spots (Geiger & Antonacopoulou, 2009). Nevertheless these rules save time and effort, which are scarce resources when dealing with strategic challenges. What a satisfactory level of information is, is again determined by a specific rule which is fast and frugal to apply. A termination rule is causally linked to an information gathering rule. Thus, the termination rule implies that a satisfactory level of information is generated to derive action from it. What is perceived as being satisfactory is again an idiosyncratic and subjective level which cannot be optimized. In the presence of uncertainty, optimal solutions do not exist. As a result, terminating the search for information at an idiosyncratic level on the one hand helps in speeding up decision making processes but on the other hand implies the inevitable risk of ignorance. Following the termination rule, the acquired information has to be made sense of in order to derive appropriate actions from it (Weick, 1995). This is again accomplished by a rule, the so called information evaluation rule. Hence, information evaluation rules frame how to deal with the collected information. At this point the strategic problem is processed into a manageable set of alternatives and/or action suggestions.

To sum up, these three types of rules form a rule pattern which is inevitable to arrive at decisions in the presence of uncertainty. Interestingly research in cognitive psychology and Gigerenzer et al. (Gigerenzer, 2008; Gigerenzer & Gaissmaier, 2011) in particular observed quite similar rule patterns in the context of individual decision making they called *individual heuristics*. Following Gigerenzer and Brighton's (2009, p. 113) insights, these *individual heuristics* are consisting of three building blocks: *Searching rule, stopping rule and decision rule*. The first building block, the searching rule, frames where to look for information and which information might be important (Gigerenzer & Brighton, 2009). Stopping rules are rules which determine when to stop the search (Gigerenzer & Brighton, 2009). Finally, the decision rule leads to a decision on basis of the generated information (Gigerenzer & Brighton, 2009). For Gigerenzer et al. (Gigerenzer, 2008; Gigerenzer & Brighton, 2009; Gigerenzer & Gaissmaier, 2011) individual heuristics over perform analytically more sophisticated methods in situations where time pressure, information overload and a high interdependency between clues exists.

In principle, we could identify a quite similar set of rules, information gathering rules, termination rules and information evaluation rules. However, while Gigerenzer studied the use of individual heuristics mainly in experimental and therefore quite artificial settings and basically focused on individual decision making behavior in situations where time was extremely critical (e.g., basketball players) our findings point to more complex constructs. Strategic decisions are more complex as compared to the individual decision-scenarios Gigerenzer has in mind: There is more than one actor involved, the amount of possibly available information is higher, there are multiple sources of experiences decision makers are drawing on (individual, organizational, and industry experience), the magnitude of the decision is high since wrong decisions might have fatal consequences for the survival of the organization and last but not least, while time is critical it is not a matter of seconds or less, but the decisions can be processed with a higher degree of reflexivity. This higher degree of complexity is reflected in our findings since multiple loops of information gathering and termination rules could be run through until the final evaluation rule is executed. Particularly the search phase is therefore more time consuming and allows for processing a much higher degree of information. Also the nature and origin of these rules differs vastly since, apart from individual experiences, the idiosyncratic experiences an organization accumulates over time significantly influences the nature of these decision rules. To account for the similarities as well as differences to Gigerenzer's concept we therefore suggest speaking of *organizational heuristics*. Organizational heuristics are (1) rule patterns which consist of multiple loops of information gathering and termination rules, (2) finalized by an evaluation rule. Organizational heuristics build to a large extent on (3) organizational experience and are therefore idiosyncratic to particular organizations (and not individuals) and are used and processed by multiple actors. Furthermore, organizational heuristics are employed in situations where due to the (4) complexity of the problem, the need to decide in a relatively short time, the problem of incomplete information and the dynamics of the situation the specification of an optimal solution is practically and theoretically impossible to reach. In those situations organizations have no choice but to make use of organizational heuristics in order to come to strategic decisions.



## Strategic Learning: The Origin of Organizational Heuristics

Furthermore, our emerging findings confirm insights from Bingham et al. (2007) which show that firms learn rules how to cope with dynamic environments. Our findings, however, extend the insights from Bingham et al. since we can show that firms not only learn simple rules for copying with highly dynamic environments, but more complex rule patterns which help in processing and evaluating information in strategic decision making. Following our insights, firms learn complex patterns of decision making which can be generalized to the extent that they can be applied in different situations at different points in time. These more general patterns for a fast and frugal processing and evaluation of information in the absence of full information are therefore not just learning capabilities of firms but seem to constitute a significant aspect of strategic learning. Organizational heuristics are therefore more than a dynamic capability enabling firms to reconfigure their resources in dynamic environments (Eisenhardt & Martin, 2000; Zollo & Winter, 2002); organizational heuristics as complex processes for decision making are the outcome of strategic learning mechanisms of firms. According to our insights, these complex patterns originate from individual, organizational and industrial experience that is condensed into patterns, thereby constituting a sophisticated learning process. Organizational heuristics incorporate experiences from the individual decision maker, from the industry at large (Spender, 1989) and from the idiosyncratic experience firms accumulate over time (Luhmann, 1995). But organizational heuristics are more than just the learned content of individuals, industry recipes or organizational frames: Instead it constitutes a separate and very specific learning process to distill these complex rules patterns from the experiences made. Seen this way strategic learning entails at least two distinct learning mechanisms: one is the already well known and often studied accumulation of experiences, the other is the capability to distill generalizable rule patterns out of these experiences. Strategic learning therefore refers to both, process and content. It points to the process of how to distill complex rule patterns from experiences and it constitutes a content of learning since precisely these rule patterns are applied in strategic decision making across different contexts. Since organizations have the ability to learn experiences and to reflect on them (Argyris & Schoen, 1978) strategic learning

entails both. Particularly the combination of rules into rule patterns exhibiting a sequential order for a stepwise processing of strategic decisions constitutes a very important form of strategic learning that did not receive sufficient attention.

## Conclusion

Our model of strategic decision making contributes to strategy research in three important ways: We depart from recent literature on strategic decision making in arguing that decision making is more than exercising simple rules or gut feelings. Second, we are able to conceptualize *organizational heuristic*. While the concept of heuristics has been frequently mentioned in decision making research our study provides new insight into the way organizational heuristics are learned and how they operate. Confronted with uncertainty organizations have to reduce complexity by relying on organizational heuristics. These heuristics on the one hand speed up the decision making process, on the other hand do they generate potential blind spots and my trigger path dependence. Finally, we suggest that learning organizational heuristics and learning how to combining rules into rule patterns can be conceptualized as a strategic learning process.

Certainly such a study is not without limitations: An important limitation of our study is that we did not yet analyze the dynamic process behind the integration of rule patterns into organizational heuristics. Moreover, while it is always difficult to generalize from cases, it would be interesting to study the emergence and characteristics of organizational heuristics in different environments exhibiting differing degrees of uncertainty and dynamism.

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