HEURISTICS IN BUSINESS INTERACTION

Simone Guercini [a], Antonella La Rocca [b,c], Andrea Runfola [d], Ivan Snehota [e]

[a]University of Florence, Florence, Italy. E-mail: simone.guercini@unifi.it

[b] BI Business School, Oslo, Norway. E-mail: antonella.la.rocca@bi.no

[c] University of Lugano - USI, Lugano, Switzerland. E-mail: antonella.la.rocca@usi.ch

[d]University of Perugia, Perugia, Italy. E-mail: andrea.runfola@unipg.it

[e] University of Lugano - USI, Lugano, Switzerland. E-mail: ivan.snehota@usi.ch

Abstract

Explaining the development of business relationships requires understanding the conduct of actors in interaction. Heuristics appear to play an important role in orienting the interaction behavior of actors in business relationships. Defined as "rules on the shelves" or as "cognitive shortcuts", heuristics tend to be deployed when limitations in information, in time and/or in the processing capacity are present, conditions that are typical of interaction in customer-supplier relationships in b2b markets. In this work-in-progress conceptual paper we review the extant literature on heuristics in management and we outline a research design and instruments to investigate empirically how heuristics emerge and how the use of heuristics affects the interaction process in buyer seller relationships.

***Key-words**: Heuristics, customer-supplier interaction, cognition, business relationship*

Work-in-progress paper

INTRODUCTION

Extensive research on customer supplier relationships in business-to-business markets in the IMP research tradition has shown that how such relationships develop depends on how actors in such relationships interact (e.g. Hakansson, 1982; Hakansson & Snehota, 1995). It also suggests that interaction processes are the key to understanding the development of business relationships and that if we want to understand and explain the development of business relationships we need to understand mutual behaviors, actions and reactions of actors that represent the customer and the supplier businesses (Håkansson et al., 2009). When actors interact in business relationships they are faced with the need to solve a number of adaptive problems continuously emerging in the relationship (Johnsen & Ford, 2007). Actors play a crucial role in defining the solutions on which the economic outcomes of business relationships depend and such solutions are defined in interaction between actors that represent the customer and the supplier organizations (Tuli, Kohli & Bharadvaj, 2007). Therefore the question of how actors choose to act and react is central for understanding relationship dynamics.

Management literature generally tends to recommend thorough analysis as base of action for various actors but when actors interact circumstances make extensive and systematic elaboration of information an illusion. It has been noted long ago that in interaction situations are typical of managerial work and require that managers act on only partial knowledge and incomplete information (Barnard, 1938, pp. 122-3). Planned behaviors based on extensive information gathering and cognitive analytical elaboration are not practicable when actors interact. However, the behavior of managers as actors is not random even if they act on limited information and partial knowledge. Under such circumstances the link between actors' knowledge and behavior needs to be clarified. It has been observed that managerial action is often taken following a limited set of clues resulting from observable reactions to own actions (Porac, 1995) and that in general information and knowledge in interaction tends to follow the action and is formed as actors interpret others' reactions to their own actions (Weick, 1995).

Recently there has been growing interest in use of heuristics when actors make choices under conditions of genuine uncertainty in management context (Bingham; Eisenhardt & Furr 2007; Bingham & Eisenhardt, 2011; Guercini, 2012; Maxwell, Jeffrey & Levesque, 2011; Wubben & Wangenheim, 2008). Heuristics have been defined broadly as "rules on the shelves" or as "cognitive shortcuts" that emerge and guide the formation of judgments and choices, in the presence of limitations in information, in time and/or in the processing capacity (Newell & Simon, 1972). The heuristics have been studied in cognitive science and in particular in experimental psychology (Kelman, 2011), in relation to the themes of "bounded rationality" and "cognitive limits". While the effects of the heuristics on the formation of judgments and choices have been the subject of contrasting, although in some ways complementary, research programs (Gigerenzer, 2000; Tversky & Kahneman, 1974), research has well documented the use of heuristics in defining solutions to complex problems from one or a few "cues".

Since conditions of limitations in information, time and processing capacity are typical of in interaction situations in customer supplier relationships, it is plausible to assume that heuristics have a role in interactive behaviors of actors. Against this background in this paper we discuss the role of heuristics in business interaction and relationships. In the first part of the paper we review the literature on interaction processes in business relationships in order to examine the link between use of heuristics and interaction. In the second part of the paper we focus on the literature on heuristics in management context that points to the importance of exploring the application of heuristics in interaction in business relationships. In the third and final part of the

paper we outline a research design to empirically explore the formation and use of heuristic in business interactions.

INTERACTION IN BUSINESS RELATIONSHIPS

Interaction is a central process in business relationships because the development of the relationships and the economic outcomes of these for the parties involved depend on how the interaction process unfolds (Hakansson & Ford, 2002). By interaction process we mean actions and reactions in encounters of actors who represent the customer and supplier business as they attempt to solve various adaptive problems that arise between the two businesses. Managing in relationships means to cope with a flow of issues.

The outcomes of interactions in customer supplier relationships are the solutions applied in the relationship on which depend the continuity and the economic consequences of the relationship for both parties. Managers as actors in business relationships carry out adaptations and interfacing of various resources involved in the relationship in the two companies and they configure activities so as to ensure coordination of activities of the two businesses. Multiple individual actors tend to be involved in a customer supplier relationship and are selectively mutually connected interacting about the resource adaptations and activity configurations (Ford et al., 2011). If we are to understand how business relationships develop and attempt to manage relationship development we must focus the attention on how actors interact.

While management literature tends to imply that 'better' (often in the sense more extensive) situation analysis, 'better' frameworks and weighing and adding information will lead to 'better' choices/decisions, in practice the scope for classical rational decision-making in business encounters, in particular in customer supplier relationships, is clearly very limited. Interaction situations in business relationships are characterized by complexity, changing conditions and a multitude of actors involved. Actors face relatively complex problems for which workable solutions must always be found and such solutions are identified between actors in interaction under time constraints. Furthermore, the choices of solutions are future oriented. The goal function of the actors is often vague; they tend to pursue conflicting goals and the goals pursued are more of a satisfying type rather than goals that can be maximized (Cyert & March 1963). Also the knowledge of the available alternatives and the frameworks that actors use to link the end and means are often partial at best. At the same time, managers as actors, attempt to pursue sensible viable solutions in order to continue to operate and when identifying and applying, effective solution managers make choices that are supported by cognitive elaboration and interpretation of the situations they encounter.

What happens in interaction

How behaviours in interaction arise has been important issue in the "sensemaking" stream of research in social psychology (e.g Weick, 1995). The main theme in the sensemaking literature is that behaviours of actors in interaction reflect *how* actors think rather than *what* they know. This idea is relevant for the consideration that relationships develop as a consequence of how interaction between two parties unfolds, regardless of the knowledge, rationality and motivations of the interacting parties (Thibaut & Kelley, 1959). Interpreting and making sense of the context is related to acting in interaction. A central argument in this stream of research is that sensemaking cannot be disjointed from enactment, the process through which individuals produce part of the environment they face (Weick, 1995, p. 20). The idea that action is crucial for sensemaking because individuals do not react to pre-existing stimuli but rather receive

stimuli as a result of their own activity has long roots in social psychology and has been expressed in the claim that "we are neither the master nor the slave of our environment. We cannot command and the environment obey, but also we cannot ... say that the organism adjusts itself to the environment, because it is only part of a larger truth" (Follett, 1924, p. 118). An important aspect is also that sensemaking implies relating: "As we perform a certain action our thought toward it changes and that changes our activity … we must give up the expression 'act on', object act on subject … I never react to you but to you-plus-me; or to be more accurate, it is I-plus-you reacting to you-plus-me. 'I' can never influence 'you' because you have already influenced me; that is, in the very process of meeting, by the very process of meeting, we both become something different" (Follett, 1924, pp. 62-63). On the whole the interest in trying to "understand and explain how the thought, feeling, and behavior of individuals are influenced by the actual presence of others" (Allport, 1985, p. 3) is common in social psychology.

The link between interaction and sensemaking also implies that the involved (actors) extract cues out of the continuous flows of moments and that the extracted cues are "simple, familiar structures that are seeds from which people develop a larger sense of what may be occurring" (Weick, 1995, p. 50). The use of the term "seed" is not casual: " … A seed is a form-producing process that captures much of the vagueness and indeterminacy of sensemaking" (Weick, 1995, pp. 50-51). Context plays an important role in the process of extracting cues. Context affects both what is extracted as a cue in the first place and how the extracted cue is then interpreted. Sensemaking is not driven by "accuracy"; "sensemaking is about plausibility, pragmatics, coherence, reasonableness, creation, invention, and instrumentality" (Weick, 1995, p. 57). We can argue that "once people begin to act (enactment), they generate tangible outcomes (cues) in some context (social), and this helps them discover (retrospect) what is occurring (ongoing), what needs to be explained (plausibility), and what should be done next (identity enhancement)" (Weick, 1995, p. 55). Thus, there are too many meanings, and the problem the sensemaker faces is not ignorance but confusion (Weick, 1995, p. 27).

Such considerations have spurred the debate on the role of knowledge in management. Research in behavioural disciplines suggests that the knowledge activated by actors is always "situated" (Norman, 1993; Greeno, 1998; de Jong & Ferguson-Hessler, 1996). The meaning of the situated knowledge is that it relates to a specific moment in time during the interaction process; it is specific for the actors that meet and the issues they are dealing with. Management literature dealing with knowledge tends, instead, to consider knowledge in a more absolute sense; that it is not strictly related to, and dependent on, the situations encountered as actors interact. The business strategy literature (e.g. Dierickx & Cool, 1989; Liebeskind, 1996; McEvily & Chakravarthy, 2002) places considerable emphasis on the stock of knowledge and the importance of the accumulation of knowledge and knowledge transfer. Business literature is thus considering knowledge from a different perspective and applies a rather different concept of knowledge than "knowledge in use" the subset of knowledge activated for acting (La Rocca & Snehota, 2011). The idea of a specific and changing knowledge activated by actors as they interact leads the attention to the role of heuristics in certain contexts. "The differences between extensive codified knowledge and simple articulated heuristics may relate to differences in environments. In stable environments, codified knowledge is beneficial since there is greater predictability in situations and thus greater efficiencies to be had from using many standardized steps. In dynamic environments however, codification may be less useful as situations are less predictable (more heterogeneous)." (Bingham et al., 2007, p. 31).

Considerations like these lead to the conclusion that actors' behaviours in interaction are formed less by what the actors actually know, in some strict empirical sense, and more by what they happen to see in a specific moment of the interaction and how they interpret what they happen to see (Weick, 2001). In business markets interaction processes are particularly important as a way to handle interdependences and the developmental potential of the business that reflect the relating capability (Johanson & Vahlne, 2011). Since coping in interaction affects the development of a business relationship, exploring interaction processes and related rules of behaviors adopted by actors in interaction is bound to contribute to a better understanding of business relationships development. Therefore, in next section we discuss the concept of heuristic as by definition heuristics play a role in interactive situations.

HEURISTICS

Heuristics can be defined as simple rules that are used to make inferences in uncertain environments (Gigerenzer & Brighton, 2009). The research on heuristic processes is associated with the concepts of "bounded rationality" (March, 1978) and "cognitive limits" (Miller, 1956) and following Simon (1967, 1972) it argues that humans rely on heuristics not only because of cognitive limits, but also because of the characteristics of the "task environment". The classical model of rationality requires that the decision maker has the knowledge of all the relevant alternatives, their likelihood and their consequences. It also requires that the available data are valid for the future as in the past. These conditions are not common in the real world, where the actors are constrained by circumstances, have more often limited and partial information and limited time to take the decisions. Although heuristics have been recognized to play an important role in decision making, the valence that researcher have attributed to the use of heuristics is both positive and negative dependent on the angle of approach.

Heuristics: biases vs. effective thinking

Kahneman and Tversky (Tversky & Kahneman, 1974; Kahneman, 2002, 2003, 2012) opened a line of study on the biases associated with heuristics. In this context, heuristics are treated as "intuitive statistics" that human beings are naturally gifted with. While acknowledging the usefulness of heuristics for "fast thinking", they find a set of heuristics (representativeness, availability, simulation, anchoring and adjustment) which are associated with biases in choice behaviors ("heuristics-and-biases program"). This program identifies heuristics as irrational and negative for human cognition. Indeed, Kahneman and Tversky claim that "in general, these heuristics are quite useful, but sometimes they lead to severe and systematic errors" (Tversky & Kahneman, 1974, p. 1129). In his Nobel Lecture, David Kahneman states that his research program has attempted to obtain a map of bounded rationality primarily by comparing "two generic modes of cognitive function: an intuitive mode in which judgments and decisions are made automatically and rapidly, and a controller mode, which is deliberate and slower", and "our research focused on errors of intuition, which we studied both for their intrinsic interest and for their value as diagnostic indicators of cognitive mechanisms" (Kahneman, 2002, pp. 449-450). Other authors followed this research program, describing further heuristic behavior directly in terms of errors associated with the heuristics (Strack, Martin & Schwartz, 1988; Piattelli Palmarini, 2005). Consequently, a substantially negative perception of the effect of the use of heuristics on the quality of the judgments and choices of individuals prevails. While for Simon heuristics are the object of study as rules that can make computers "smart", for Kahneman and Tversky heuristics are considered basically because they do not make smart people. In this sense,

the approach of the "heuristics and biases program" looks very different from the one proposed by Simon in his vision of "bounded rationality". However, the “heuristics-and-biases” program had a great influence on economic research contributing to the emergence of behavioral economics and behavioral law and economics.

Following a different line of thought, Gigerenzer and colleagues (Gigerenzer & Goldstein, 1996; Gigerenzer & Todd, 1999; Todd & Gigerenzer, 2012) see the heuristics as the result of an adaptive behavior through which humans can reach effective decisions from a few stimuli. They propose translating heuristic models in formal models, through an analysis of "building blocks", which allow to test the accuracy of the opinions formulated from heuristics and to prove of superior effectiveness of use of heuristics (less-is-more effect) compared to judgments based on better information ("adaptive-behavior-and-cognition program"). This stream of research has shown that application of heuristics, under certain circumstances, leads to better choices; use of heuristics leads to “strategies that ignore information to make decisions faster, more frugally, and/or more accurately than more complex methods” (Gigerenzer & Gaissmaier, 2011, p. 453). Heuristics are argued to be models for decision-making "fast and frugal"; capable of yielding effective solutions without using a large amount of information and computation.

Gigerenzer and his colleagues, identify three types of rules that actors use to come with a decision : “search rules”, “stopping rules” and “decision rules”. The "search rules" indicate the direction in which the actor seeks information. The "stopping rules" indicate when to stop collecting information, while the "decision rules" indicate how to draw a judgment or choice from the information collected (algorithm). These “building blocks” are employed in testing the accuracy of a new set of heuristic rules (recognition heuristic, fluency heuristic, take-the-best heuristic, fast-and-frugal trees, tallying heuristic, hiatus heuristic etc.) and to demonstrate the accuracy of inferences based on heuristics in defined contexts. It is argued that the use of heuristics is a tool of human cognition typical of the "homo heuristicus", which, in the real world, can be more effective than the rationality of "homo economicus" (Gigerenzer & Brighton, 2009). Such an approach retrieves the attention on the context earlier proposed by Simon considering the effectiveness of heuristics not in absolute but dependent on the characteristics of the task environment. If the actor’s task is to make assessments of known events that have occurred in the past, heuristics are less effective than methods that are based on use of extensive information. If, however, the actor has to make predictions about uncertain future, insights based on simple "rule of thumb" can be, and often are, more accurate (Gigerenzer, 2007, p. 151).

In sum, most of the literature on heuristics highlights on the one hand the possibility that they are associated to biases (Kelman, 2011). However, another part of the literature, most recently, shows that the use of heuristics can be more accurate in the task environments where conditions of change and uncertainty prevail. In particular, a decision approach based on extensive information works to interpret the past but is not effective for predictions about the future because the decision models that use abundant information can cause "overfitting" with respect to the actual task environment (Gigerenzer, 2007, p. 246).

Heuristics in management context

The theme of heuristics from social psychology and cognitive science has become of interest to management. In the management literature the same divide emerges between those who see heuristics as result of cognitive limitations and sources of error (Busenitz & Barney, 1997; Haley & Stumpf, 1989; Manimala, 1992) and those who tend to see heuristics as effective solutions to complex problems (Åstebro & Elhedhli, 2006; Davis et al., 2009; Eisenhardt & Sull, 2001). For

instance, in behavioral operations management the use of heuristics is typically viewed as a liability and as a source of errors. The standard approach to decision-making is to assume that the manager behaves as a rational economist (Carter et al., 2007). Similar approach can be found in the traditional marketing management, where the connections with the microeconomics has strengthened the assumptions that the decision-maker is a “homo economicus” which is the model of rational decision-maker for managers and entrepreneurs (Guercini, 2012). On the other hand it has been argued that a fundamental aspect in the psychology of bounded rationality is that uncertainty leads in fact to behavior that is "rules based" rather than based on detailed analysis because the results of such analysis would still be considered uncertain (March, 1994, p. 11). It is therefore essential to establish under what conditions rule based choice behavior can be effective. Take for example the heuristic tit-for-tat (Axelrod, 1984) that can be defined in these terms: the first session of interaction cooperate and then imitate the last behavior of your partner. It is a heuristic rule that, if followed also by the partner, can generate cooperation, providing an effective rule to follow in interaction under uncertainty (Gigerenzer & Brighton, 2009).

Recent research on learning in organizational processes indicates heuristics as an object of learning through the accrual of experience on the part of decision makers (Levinthal, 2011). In this case the concept of heuristics can be compared with that of routines (Nelson & Winter, 1982; Cohen et al., 1996; Zollo et al., 2002). The routines are presented in close relation with the concept of organizational memory, since "routinization of activity in an organization constitutes the most important form of storage of the organization's specific operational knowledge" (Nelson & Winter 1982, p. 99). Routines are then associated with the concept of memory and can expand their consistency over time through a process of accumulation. The routines provide a detailed response to particular problems often almost automatically reducing the perception of the problem complexity. They provide a detailed system of rules and specific steps that can be applied consistently in different environments (Cohen et al., 1996).

Heuristics differ from routines as they provide a common framework for a set of similar problems, but do not offer specific solutions to be adopted and thus preserve the perception of the problematic nature of the issue to be addressed (Guercini, 2012). The use of heuristics is linked to the limits of memory and the need for simple rules, intuitive or deliberate, to solve problems with an uncertain outcome. Decision making based on heuristics follows the rules believed more appropriate without focusing on the evaluation of future consequences given the condition of uncertainty (March, 1994). An accumulation of many rules of this kind can be an obstacle to their usefulness (Bingham & Eisenhardt, 2011).

The role of heuristics for rational decision-makers has been examined recently by a study based on a case research of six entrepreneurial firms engaged in the internationalization process (Bingham & Eisenhardt, 2011). In this research heuristics emerge as "simple rules" that can be more effective basis for strategic behaviors than analytically complex and "information-intensive" decision making models. The study evidences the existence of two types of rationality. A first type that requires the extensive use of information and may be effective when there are many experiences which are similar between them (comprehensive logical analysis). A second type of rationality applies when there are relatively few past experiences, a relatively high diversity of experiences, with high uncertainty and difficulty in foreseeing the consequences of different actions (rules-based analysis). The conditions under which the second type of rationality is effective are widespread and thus the scope for use of heuristics appears actually much wider than for the analytical decision approach. Simple heuristic rules are a "rational" strategy, in markets characterized by uncertainty more effective than analytically complex

approaches that use large amounts of information (Bingham & Eisenhardt, 2011, p. 1461). To distinguish this second mode of rationality, it was called "ecological rationality of heuristics" (Todd & Gigerenzer, 2012), identifying the conditions under which "fast and frugal heuristics" have good performances: “models of heuristics tend to perform better than more mathematically sophisticated models, developed in operations research and management science, when the sample available to calibrate parameters is small” (Katsikopoulos & Gigerenzer, 2013, p. 6).

The heuristics considered in the psychological literature are much more general, both in the "heuristic and biases" approach and in the "fast and frugal heuristics" than the heuristics identified in the management literature (Bingham & Eisenhardt, 2011, pp. 1444-1447). The heuristics formulated by Kahneman and Tversky are few, gradually identified by the authors in the realization of their program of experimental research, related to “labels” applicable to different contexts and environments, common in the population (Tversky & Kahneman, 1974). The rules set by Gigerenzer and colleagues are more numerous but connected to a limited set of conceptual building blocks which, as we have seen, include "search rules", "stopping rules" and "decision rules" (Gigerenzer & Gaissmaier, 2011).

Management literature on heuristics suggests that business decision-makers can adopt a “heuristics portfolio” with very specific characteristics and that the heuristics which compose the “portfolio” can be different for each actor (Bingham & Eisenhardt, 2011, p. 1439). They can be relatively numerous but subject to subsequent selection even in limited numbers to maintain and ensure a "neural plasticity" (Anderson, 2000). In the management literature heuristics are the subject of learning and can become "obsolete". For instance, Bingham and Eisenhardt identify four types of heuristics in cases of firms involved in the internationalization process: (1) "selection heuristics" leading between the opportunities of product or market, (2) "procedural heuristics" that guide the choice about the mode of entry into a market, (3) "temporal heuristics" that guide the design of processes, in terms of sequence of operations, timing and rhythms to be observed, (4) "priority heuristics" that guide the order of importance of chance anyway acceptable.

The research design employed by Bingham and Eisenhardt is a multiple case study of six entrepreneurial firms which relies on sources of data which include semi-structured interviews with business executives, archival data as corporate reports and documents, observations and visits in the head quarters of each firm, contents of e-mail, phone call and follow-up interview to track business processes. This approach sees the first two types of heuristics (selection and procedural) as simple as assessing individual opportunity and they are subject to early learning. The other two types of heuristics (temporal and priority) evaluate relationships between multiple opportunities, they are learned only later and requires more experience and more cognitive abilities, in which are defined as "expert heuristics" (Baron & Ensley, 2006). However, the nature of these rules and their relation to organizational processes requires further research (Guercini, 2012a). In fact, a number of questions remain open, including the following:

1. Do heuristic rules correspond to natural "innate" predispositions or are they learned?
2. Which is the role of the external context and the individual creativity in the heuristics generation process?
3. How the “heuristics portfolio” evolve? Do heuristics evolve through decision makers’ experience?
4. Which is the role of interaction in the creation, selection and evolution of heuristics?

5. To what extent are the heuristic rules adopted by the organizational actors context specific?
6. How much do the heuristic rules differ between actor and actor, and how idiosyncratic to the specific actor can they be?

Answering these questions requires developing an approach and then instruments to capture the use of heuristics in particular in business interaction. An outline of research design and instrument to explore heuristics in a processual view is discussed in the next section.

INVESTIGATING EMPIRICALLY HEURISTICS IN INTERACTION

Research on heuristics both in general and in management context suggest that investigating the role of heuristics in interaction is relevant. Research on heuristics in management context proposed that there is a need to investigate the use of heuristics out of experimental situation (Bingham & Eisenhardt, 2011). There are two issues of concern when investigating heuristics empirically in business context: How to identify heuristics in use? and How to assess and analyze them? The aim of our research is to identify the heuristics portfolio actors use in interaction and to investigate to what extent the heuristics are individual or shared throughout the organization and their origins.

Since we are set to investigate the use and role of heuristics in business interaction we are developing an approach to analyze the actual use of heuristics in interaction (face to face or mediated) between actors in customer supplier relationships. We are aware that the methodological challenge of investigating heuristics in an empirical setting like business relationships, is probably the reason why experiments are the preferred approach. A substantial difference compared to experimental approach is that interaction episodes between business partners do not always lead to a formal decision (usually used as the outcome variable in experiments), yet they are the *locus* where parties connect to each other, form opinions, influence reciprocal and future behaviors and, for this reason, such outcomes are not of less importance for choice than the formal decisions.

We believe that there is a need to develop and design an explorative research approach in order to advance our understanding of the heuristic rules in interaction behaviors both at the dyad level and with third parties in the organization. Below we outline the research design and the instruments we intend to apply in order to explore the role of heuristics in interaction processes, their origin and how they vary across relationships and change over time. The design of the research we are carrying out has three phases: 1) Bi-lateral interviews with two actors involved in a customer supplier relationship with the purpose to identify the heuristics they use or intend to use (see Table 1); 2) Observation of the use of heuristic rules during an interaction episode (encounter) between the actors previously interviewed; 3) Bi-lateral interviews as follow-up of the interaction episode. In the pre-interaction phase we aim at exploring the expectations of the parties about the planned encounter (interaction episode) and how they "prepare" - if they do - their meetings. Guidelines for preliminary interviews of the first phase of the research design have been formulated following the Gigerenzer & Gaissmaier (2011) model distinguishing: "search rules", "stopping rules" and "decision rules". We follow questions on the expectation about the meeting and questions on the use of rules behaviors toward the counterpart as reported in Table 1. These questions are to be collected with both the supplier and customer side actors to allow for examining "interaction of heuristics".

Tab. 1 Exploratory Questions on the use of Heuristics in phase 1 – pre interaction

Expectation about the meeting will be observed

Q_1 What issues do you expect will arise during the meeting with the counterpart?
Q_2 What do you expect will be the outcome of the meeting? Why?
Q_3 What do you want to communicate to the counterpart? How and why?
Q_4 What reactions do you expect from the counterpart? Why?

General rules

Q_5 Do you usually use to prepare in advance a meeting with a counterpart (for how long, looking for information, take notes, etc.)? How?
Q_6 Do you usually follow some rule/rules of behavior when you meet a counterpart? Why? If so, which rules do you apply most frequently, which do you consider most important?
Q_7 Did you learn different rules for different counterparts? If so, could you tell an example?

Rules "activated" in view of the meeting

Q_8 Did you develop specific rules of behaviors to which you comply when you meet this counterpart? If so, which rules and why?
Q_9 What kind of information did you collect/will collect specific information? Where and how?
Q_{10} Why is this information important?
Q_{11} What kind of information or decision you would like to get from the counterpart and why?

The observation of the encounter and the related interaction process aims at identifying how the two parties confront each other, the topics and arguments used and tracing the related heuristics. We thus are set to observe how the interaction process unfolds between the two parties (Table 2).

Tab. 2 Exploratory observations during the interaction episode

Data collection activities in exploratory observations

A_1 Observation and description of the interaction episode context
A_2 Registration of the dialogues
A_3 Description of the main topics emerging from the interaction episode
A_4 Observation and description of the behavior of the actors in interaction
A_5 Verbatim collection

The last research design phase consists of a follow-up-interview with both parties involved in the encounter to get their feedback and interpretation of the interaction episode. Data collected in these interviews will be compared with records of interactions (conversation analysis) which might also permit to see if actors are aware and conscious about heuristics used in interaction. Moreover, follow-up interaction interviews, whose questions are outlined in Table 3, aim to explore the origin of the heuristic used, extent of sharing the individual heuristics within the own company and eventual adjustments in the heuristics as consequence of the interaction episode.

Tab. 3 Exploratory Questions on the use of Heuristics in phase 2 – post interaction

General Evaluation

Q_1 Are you satisfied with how meeting went?
Q_2 Did you get what you expected?
Q_3 Why do you think what you obtained from this meeting is useful or not useful?

Evaluation of Rules

Q_4 Did you use information that you prepared in view of this meeting? Do you think that the information you collected has been useful for the meeting?

Q_5 Which information (knowledge) did you use and why?
Q_6 Did any unexpected issues emerge during the meeting?
Q_7 Did you change your idea/position concerning the object of discussion? Why?
Q_8 What information was crucial for the outcome of the meeting? Why?
Q_9 Did you want to get/obtain something different?
Q_{10} Would you have preferred that the meeting developed in another way? How?
Q_{11} What further information did you wanted to get but did not get?

Adjustment in rules

Q_{12} As a result of this meeting do you think you will change in some way the way in which you usually deal with this counterpart? Do you think you have learned something from this meeting that can be useful for future interaction with the same/different counterpart?

The research design outlined for this study has the ambition to adopt a multi-relationships perspective that includes more individuals of the same organization (e.g. the sales force or the customer service) in order to examine to what extant heuristics are an individual/collective process, if and how individual heuristic become collective and vice versa and how it emerges a specific heuristic portfolio in a given business context.

FINAL REMARKS

Recent literature on heuristics shows that use of heuristics can lead to effective decision making (and accurate inferences) when choices are made under uncertain and future conditions because under such conditions availability of large amount information does not lead to more effective decision-making. Since in the context of interaction in business relationships uncertainty and change are the prevailing conditions it is plausible to assume that actors use quite extensively heuristics when they interact about and jointly define solutions to be adopted on various issues that emerge in the relationship. At the same time, having reviewed some of the literature, in particular on sense-making, we find it reasonable to assume that heuristics are also formed in interaction. The research on business relationships in B2B markets highlights the crucial role of actors in shaping the relationships (e.g. Gadde, Hjelmgren, & Skarp, 2012; Ford et al., 2011) which suggests the link between interaction and use of heuristics an important object of study. Yet, we have not identified any studies of heuristics in such an empirical setting.

The limited literature on heuristics in management points to relationship between formation of heuristics and organizational routines. The study on the use of heuristics is not only of interest at inter-organizational level, in the dyad, but also at the organizational level, since other "functions" in the organizations are presumably called in to question when actors activate rules in the business relationships. Against this background both investigating the role of heuristics in defining relational solutions and the role of interaction in formation of the heuristics appear to be worthy avenues of enquiry.

The empirical research we are set to carry out focuses on episodes of interaction addressing the following issues: interaction as a context for use of heuristics but also for developing heuristics; specificity of heuristics learned and used by the individual actor in the context of interaction; dissemination of interaction heuristics between the actors and in the organization; variation in heuristics used between interaction episodes and relationships as well as the structure of the portfolio of heuristics at individual level, for specific events, or for an organizational unit. With regard to these objectives, this paper proposes an initial theoretical framework and outline research instruments and tools that might be useful to give an answer to our research questions.

References

Allport, A. (1985). The historical background of social psychology. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology*, New York: Random House.

Åstebro, T., & Elhedhli, S. (2006). The Effectiveness of Simple Decision Heuristics: Forecasting Commercial success for early-stage ventures. *Management Science*, 52(3), 395-409.

Axelrod, R. (1984). *The Evolution of Cooperation*. New York: Basic Books

Barnard, C. (1938). *The Functions of the Executive*. Cambridge: Harvard University Press.

Baron, R., & Ensley, M. (2006). Opportunity recognition as the detection of meaningful patterns: Evidence from comparisons of novice and experienced entrepreneurs. *Management Science*, 52, 1331-1344.

Bingham, C.B., & Eisenhardt, K.M. (2011). Rational Heuristics: The 'simple rules' that strategists learn from experience. *Strategic Management Journal*, 32(13), 1437-1464.

Bingham, C.B., Eisenhardt, K.M., & Furr, N.R. (2007). What makes a process a capability? Heuristics, strategy, and effective capture of opportunities. *Strategic Entrepreneurship Journal*, 1 (1-2), 27-47.

Busenitz, L. W., & Barney, J. B. (1997). Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making. *Journal of Business Venturing*, 12(1), 9-30.

Carter, C.R., & Kaufmann, A.M. (2007) Behavioral supply management: A taxonomy of judgement and decision-making biases, *International Journal of Physical Distribution and Logistics Management*, 37(8), 631-669.

Cohen, M.D., Burkhart, R., Dosi, G., Egidi, M., Marengo, L. Warglien, M., & Winter, S. (1996). Routines and other recurring action patterns of organizations: contemporary research issues. *Industrial and Corporate Change*, 5(3), 653-698.

Cyert, R. & March, J.G. (1963). *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ. Prentice-Hall Inc.

Davis, J. P., Eisenhardt, K. M., & Bingham, C.B. (2009). Optimal structure, market dynamism, and the strategy of simple rules. *Administrative Science Quarterly*, 54(3), 413-452.

De Jong, T., & Ferguson-Hessler, M.G.M. (1996). Types and Qualities of Knowledge. *Educational Psychologist*, 31(2), 105-113

Dierickx, I., & Cool, K. (1989). Asset stock accumulation and sustainability of competitive advantage. *Management Science*, 35(December), 1504-1511.

Eisenhardt, K. M., & Sull, D. N. (2001). Strategy as simple rules. *Harvard Business Review*, 79(1), 106-116.

Follet, M.P. (1924). *Creative experience*. New York: Peter Smith.

Ford, D., Gadde, L.-E., Håkansson, H., & Snehota, I. (2011). *Managing Business Relationships*. Chichester: John Wiley & Sons.

Gadde, L-E, Hjelmgren, D., & Skarp, F. (2012) Interactive resource development in new business relationships. *Journal of Business Research*, 65 (2), 210-217

Gigerenzer, G. (2000). *Adaptive thinking: Rationality in the real world*. New York: Oxford University Press

Gigerenzer, G. (2007). *Gut feelings the intelligence of the unconscious*. New York: Viking.

Gigerenzer, G., & Brighton, H. (2009). Homo heuristicus: Why biased minds make better inferences. *Topics in Cognitive Science*, 1, 107–143

Gigerenzer, G., & Gaissmaier, W. (2011). Heuristic decision making. *Annual Review of Psychology*, 62, 451–482.

Gigerenzer, G., & Goldstein, D.G. (1996). Reasoning the fast and frugal way: models of bounded rationality. *Psychological Review*, 103, 650-669

Gigerenzer, G., & Todd P.M., (Eds.) (1999). *Simple heuristics that make us smart*. New York: Oxford University Press.

Gigerenzer, G., Todd, P.M., & the ABC Research Group. (1999). *Simple Heuristics That Make. Us Smart*. New York: Oxford University Press.

Greeno, J. G. (1998). The Situativity of knowing, learning, and Research. *American Psychologist*, 53(1), 5-26.

Guercini, S. (2012). New approaches to heuristic processes and entrepreneurial cognition of the market. *Journal of Research in Marketing and Entrepreneurship*, 14(2), 199-213.

Guercini, S. (2012a). Processi euristici e marketing imprenditoriale. *Piccola Impresa/Small business*, 3, pp. 9-29.

Håkansson, H. (1982). *International Marketing and Purchasing of Industrial Goods: An Interaction Approach*. Chichester: John Wiley & Sons.

Håkansson, H., & Ford, D. (2002). How should companies interact in business networks. *Journal of Business Research*, 55(1), 133-139.

Håkansson, H., & Snehota, I. (1995). *Developing Relationship in Business Networks*. London: Routledge.

Håkansson, H., Ford, D., Gadde, L.-E., Snehota, I., & Waluszewski, A. (2009). *Business in Networks.* Chichester: John Wiley & Sons.

Haley, U.C., & Stumpf, S.A. (1989). Cognitive trails in strategic decision-making: linking theories of personalities and cognitions, *Journal of Management Studies*, 26(5), 477-497.

Johanson, J., & Vahlne, J. (2011). Markets as networks: implications for strategy-making. *Journal of the Academy of Marketing Science*, 39(4), 484-491.

Johnsen, T., & Ford, D. (2007). Customer approaches to product development with suppliers. *Industrial Marketing Management*, 36(3), 300-308.

Kahneman, D. (2002). Maps of bounded rationality: a perspective on intuitive judgment and choice, in *Les Prix Nobel: The Nobel Prizes 2002*, ed. T. Frangsmyr, 449-489, Stockholm, Nobel Foundation.

Kahneman, D. (2003). A perspective on judgment and choice: mapping bounded rationality. *American Psychologist*, 58, 9, 697-720.

Kahneman, D. (2012). *Thinking, fast and slow*. New York, Farrar Strauss and Giroux

Katsikopoulos, K. V., & Gigerenzer, G. (2013). Behavioral operations management: A blind spot and a research program. *Journal of Supply Chain Management*, 49, 3-7.

Kelman, M.G. (2011). *The heuristic debate*. New York: Oxford University Press.

La Rocca, A., & Snehota, I. (2011). Knowledge in use when actors interact in business relationships. *IMP Journal*, 5(2), 79-93.

Liebeskind, J.P. (1996). Knowledge, strategy, and the theory of the firm. *Strategic Management Journal*, 17, 93-107.

Manimala, M. G. (1992). Entrepreneurial Heuristics: A Comparison Between High PI (Pioneering-Innovative) and Low PI Ventures. *Journal of Business Venturing*, 7, 477-504.

March, J.G. (1978). Bounded Rationality, Ambiguity, and the engineering of Choice. *The Bell Journal of Economics*, 9(2), 587-608.

March, J.G. (1994). *A Primer on Decision Making–How Decisions Happen*. New York: The Free Press

Maxwell, A. L., Jeffrey, S.A. and Lévesque, M. (2011). Business angel early stage decision making. *Journal of Business Venturing*, 26(2), 212-225.

McEvily, S., & Chakravarthy, B. S. (2002). The persistence of knowledge-based advantage: an empirical test for product performance and technological knowledge. *Strategic Management Journal*, 23(4), 285-305.

Miller, G. A. (1956). The magical number seven, plus or minus two: some limits on our capacity for processing information. *Psychological Review*, 63, 81-97

Nelson, R.R., & Winter, S. G. (1982). *An Evolutionary Theory of Economic Change*. Cambridge, Massachusetts: The Belknap Press.

Newell A., & Simon, H.A. (1972). *Human problem solving*. Englewood Cliffs: Prentice Hall.

Norman, D. A. (1993). *Things that make us smart*. Reading, MA: Addison-Wesley.

Piattelli Palmarini, M. (2005). *Psicologia ed economia delle scelte. Quattro lezioni al Collège de France*. Torino, Codice.

Porac, J., Thomas, H., Wilson, F., & Kanfer, A. (1995). Rivalry and the industry model of Scottish knitwear producers. *Administrative Science Quarterly*, 40, 203-227.

Simon, H. A. (1967). The logic of heuristic decision making. In N. Rescher (ed.), *The logic of decision and action*, Pittsburg, The University of Pittsburg, 1-20.

Simon, H. A. (1972). Theories of Bounded Rationality. In C. B. McGuire and R. Radner, eds., *Decision and Organization*, Amsterdam: North-Holland Publishing Company.

Simon, H. A. (1979). Rational decision making in business organizations. *American Economic Review*, 69, 493-513.

Simon, H. A. (1990). Invariants of human behavior. *Annual Review of Psychology*, 41, 1-19.

Simon, H. A. (1991). Organizations and markets. *Journal of Economic Perspectives*, 5(2), 25–44.

Strack, F. Martin, L. L. & Schwarz, N. (1988). Priming and communication: social determinants of information use in judgments of life satisfaction. *European Journal of Social Psychology*, 18, 429-442.

Thibaut, J.W., & Kelley, H.H. (1959). *The social Psychology of Groups*. New York: Wiley.

Todd, P., & Gigerenzer, G. (Eds.) (2012). *Ecological rationality. Intelligence in the world*. New York: Oxford University Press.

Tversky, A., & Kahneman, D. (1974). Judgement under uncertainty: heuristics and biases. Science, 185, 1124-113.

Weick, K.E. (1995). *Sensemaking in organization*. Thousand Oaks, CA: Sage.

Weick, K.E. (2001). *Making Sense of the Organization*. Blackwell Publishing.

Wubben, M., & von Wangenheim, F. (2008). Instant customer base analysis: managerial heuristics often "get it right". *Journal of Marketing*, 72, 82-93.

Zollo, M., Reuer, J.J. & Singh, H. (2002). Interorganizational routines and performance in strategic alliances. *Organization Science*, 13, 701-713.