Business Modeling as Configuring Heuristics

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Abstract

While recent research has referred to a cognitive view on 'business modeling', it remains unclear in specifying the cognitive foundations of how such modeling happens. This paper proposes building on heuristics as models of individual cognition, which have proved effective foundations of adaptive individual and managerial behaviors. By also drawing on gestalt theory to specify principles of modeling as rule-based form giving, we propose business modeling as a managerial cognitive process of configuring heuristics. The paper makes three contributions. First, we introduce heuristics to the business modeling literature, and so provide an established theory of adaptive individual behavior that strengthens the cognitive foundations of business modeling. Second, we conceptualize and theorize on the cognitive activity of business modeling as an iterative process of configuring heuristics by applying gestalt principles. Although the literature on business models has referred to the theories of configurations and gestalt, it has been left to this work to make the theoretical linkages between heuristics, gestalt theory and business modeling explicit. Third, our work contributes to the micro-foundations of the cognitive processes underlying business modeling and thus to broader accounts of adaptive managerial behaviors.

Keywords: Business modeling, heuristics, configuration, gestalt theory

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Introduction

When entrepreneurs and managers build business models, they can do so by following simple rules (Loock, Hinnen, & Spiegelberg, 2015). An iconic example can be seen in the simple rules on which Rose Blumkin - called 'Mrs. B.' - built the Nebraska Furniture Mart: 'sell cheap and tell the truth'. This family business was later sold to Warren Buffett and is now part of the Buffett empire, which also has shareholdings in companies such as Coca-Cola, American Express, and Munich Re. The distinct nature of the cognitive process via which Mrs. B. arrived at her tenets is unknown, but it appears that these two simple rules - 'sell cheap' and 'tell the truth' - became core to how the Nebraska Furniture Mart created and captured value. This paper argues that such configurations of simple rules can be conceptualized as the cognitive process of 'business modeling.' In particular, we refer to certain types of simple rules, which theory on individual adaptive behaviors has described as 'heuristics' (Gigerenzer, Hertwig, & Pachur, 2011).

The cognitive view has gained increasing attention in recent research on business models (Baden-Fuller & Morgan, 2010), as it unifies different perspectives on cognitive modeling within the history of science (Morgan, 2012; Nersessian, 2008), and links them to the managerial problems of value creation and capture (Baden-Fuller & Haefliger, 2013; Baden-Fuller & Mangematin, 2013). Furthermore, the cognitive view on business models provides important foundations to highlight the special role of modeling as the "cognitive basis of model-based reasoning practice" (Nersessian, 2008) and, thus, of *business* modeling as the cognitive basis of *business* model-based reasoning practice. Whereas modeling has the double aim of giving form to ideas and making them formally rule-bound (Morgan, 2012), mental modeling describes "this capacity […] rooted in the ability to imagine - to depict in the mind - both real world and imaginary situations, and to make inferences about future states of these situations based on current understandings, with and in the absence of physical instantiations of the things being reasoned about" (Nersessian, 2008: 91). In that regard, "a mental model is a structural analogy in that it embodies a representation of the salient spatial and temporal relations among, and the causal structures connecting, the events and entities depicted" (Johnson-Laird, 1983; Nersessian, 2008: 103). As Nersessian points out, this understanding also resonates with what Craik (1943) called a "relation structure", which Fodor (1975) referred to as the "grammar" of a language.

But, while the application of a cognitive lens has been identified and articulated as a promising avenue to enrich our current understanding of business modeling, this relationship has only so far been explored at a rhetorical level. As a consequence, the distinct underlying mechanisms and cognitive processes have largely remained within a 'black box.' In the cognitive view that currently prevails, the fundamental question about the micro-foundations of business modeling - 'How does business modeling happen?' - has remained unanswered. On the one hand, we need to shed further light on the very nature of managerial cognition in the context of business modeling by drawing on literature from neighboring disciplines, such as the well-established human cognition field. On the other - building on Morgan's (2012) view that modeling gives form to ideas and makes them formally rule-bound - we currently lack theory about how the processes of form-giving and rule-bounding can be conceptualized for business modeling.

Given the diversity of cognition as a field, and the potential roles of models in considerations of individual cognition, business modeling could potentially build on a variety of models of cognition. Specifically, this paper offers a conceptualization of the cognitive processes that managers employ when performing business modeling by drawing on two theoretical pillars: heuristics and gestalt theory. The first pillar builds on theoretical foundations of individual and managerial heuristics—'simple rules' applied by individuals and contextualized in making their decisions. For that we follow recent work at the intersection of the adaptive behavior of *individuals* (Gigerenzer et al., 2011; Goldstein & Gigerenzer, 2002; Simon, 1955) and adaptive *managerial* behaviors (Bingham & Eisenhardt, 2011, 2014; Vuori & Vuori, 2014). Drawing on these streams of literature, we assume that heuristics are robust models of individual cognition. Basing our work on heuristics vis-à-vis other models of individual cognition offers major advantages, since - as recent work has shown - managers actually use heuristics to address important strategic questions (Bingham & Eisenhardt, 2011; Loock et al., 2015). A broad empirical investigation across a variety of disciplines has also proved that heuristics model individual adaptive behavior accurately, and have advantages over other models of individual cognition (Gigerenzer et al., 2011; Simon, 1955).[1]

Our second pillar draws on gestalt psychology, which offers principles about the cognitive processes via which the human mind senses and creates forms (Deutsch, 1999a;

[1] It is beyond the scope of this paper to outline or contribute to the 'heuristic debate'; however, Kelman (2011) provides a sound overview of the different arguments of different schools of individual cognition and, especially, the debate between different views on heuristics.

Koffka, 2013). Through combining both pillars, we develop a notion of business modeling as a cognitive process of configuring heuristics to specify how to create and capture value (Baden-Fuller & Morgan, 2010; Baden-Fuller & Haefliger, 2013; Baden-Fuller & Mangematin, 2013). While heuristics have been used to depict business models (Loock et al. 2015), a process view on how business modeling actually happens has not yet been established. We contend that business modeling describes the cognitive process of applying gestalt principles to configure portfolios of heuristics: in other words - as the example of Mrs. B and the Nebraska Furniture Mart illustrates - business modeling can be seen as the cognitive process of giving form to a set of contextualized and rationalized simple rules. For Mrs. B., this was the simple process of combining two simple rules: 'sell cheap' and 'tell the truth': and while business modeling may often be much more complex, the basic principles - as this paper will show - can be thought of as the same.

This paper is organized as follows. First, we discuss the state of the literature with regard to the cognitive antecedents of business models, and introduce the key developments in the literatures of heuristics and in gestalt theory, and point to their previous interrelations. Second, we develop, formalize, and theorize business modeling as a cognitive process of configuring heuristics. Third, we discuss the implications of our model and point to avenues for further research. In our concluding remarks, we point to key and peripheral contributions of conceptualizing business modeling as a cognitive process of configuring heuristics.

The Antecedents of Business Modeling

In this section, we introduce basic principles of business modeling as configuring heuristics, highlighting in particular the differential characteristics of heuristics in contrast to simple rules in forming the basic elements of business models. We then discuss the principles of gestalt theory and the configuring of gestalts.

Heuristics vs. simple rules

Managers and entrepreneurs use heuristics, that is, certain types of simple rules, to address important strategic questions (Bingham & Eisenhardt, 2011; Loock et al., 2015). A recent review of heuristics reveals important foundations of the concept from a management perspective (Loock & Hinnen, 2015). Heuristic decision-making has also previously been described in different business contexts, such as entrepreneurship (Manimala, 1992) and various other managerial issues (Bazerman & Moore, 2009). Such studies show that heuristics complement the field of rule-based decision making in management, in contexts

such as opportunity evaluation (Wood & Williams, 2014) for instance, and contribute primarily to a perspective that reveals the positive performance consequences of simple, "fast and frugal" rules (Gigerenzer et al., 2011). Further, and most important, in contrast to traditional views which associate heuristics with biases and view them as behavioral deviations from optimal (rational) behavior, scholars have recently acknowledged the "strategic" or "ecological rationality" of heuristics (Bingham & Eisenhardt, 2011; Goldstein & Gigerenzer, 2002). As noted by Simon (1990), and later acknowledged in theories on contingent decision behavior (Payne, Bettman, & Johnson, 1993), heuristics as foundations of adaptive human behavior address the decision maker's individual cognitive capabilities and the environmental specifics in which the actual decision task is embedded, as well as (obviously) the decision-making task itself (Gigerenzer et al., 2011; Goldstein & Gigerenzer, 2002). The ecological rationality of heuristics emerges from different directions (Loock & Hinnen, 2015): scholars have found that heuristics:

- systematically exploit information coming from the environment (Goldstein & Gigerenzer, 2002);
- collect the essential results of learning processes (Bingham & Eisenhardt, 2011; Bingham & Haleblian, 2012; Wuebben & Wangenheim, 2008);
- provide beneficial "effort/accuracy trade-offs" (Payne et al., 1993) and save time or costs in decision making, or enable accurate decisions when such resources are scarce (Hauser, 2014; Hu & Wang, 2014; Pichert & Katsikopoulos, 2008);
- only require little information to arrive at accurate decisions, which is especially beneficial in situations of low information availability or uncertain information reliability (DeMiguel, Garlappi, & Uppal, 2009);
- avoid over-fitting decisions to historic data, and appear to be more accurate in predicting new data (Czerlinski, Gigerenzer, & Goldstein, 1999; Pitt, Myung, & Zhang, 2002);
- can be assumed to balance efficiency and flexibility, the two conventional foundations of organizational development which are often assumed to conflict (Eisenhardt, Furr, & Bingham, 2010).

Overall, it appears that managers use heuristics as a result of learning from their own process experience (Bingham & Eisenhardt, 2011; Bingham & Haleblian, 2012; Nikolaeva, 2014; Wuebben & Wangenheim, 2008; Loock et al., 2015). In turn, heuristics guide organizational processes by informing managers' understandings, and so determine a firm's adaptive strategy (Bingham & Eisenhardt, 2011; Loock & Hinnen, 2015). In that sense,

heuristics differ from simple rules (Vuori & Vuori, 2014; Loock & Hinnen, 2015): rather than being just 'simple,' heuristics evolve against a deliberate process of learning and their frugality systematically exploits the environmental structure. It is misleading to think of just composing simple rules that can be easily copied. Heuristics may seem simple, but the ecological rationality in which they are embedded is not. Returning to the Mrs. B. example, we see that those simple rules were reflected in a broader ecology that is interwoven with heuristics - which ultimately also convinced Warren Buffet to buy Nebraska Furniture Mart:

> *Impressed with the success, business savvy and honest dealings of the Blumkins, investor Warren Buffett and Mrs. B used a simple handshake to seal the purchase of 90% of the business for Buffett's Berkshire Hathaway portfolio in 1983. The 'Historic Omaha Handshake' plus a simple two-page written agreement were all that were required - no audit of the store's books, no inventory of its merchandise.*
> (http://www.nfm.com, accessed June 1, 2014).

However, managers are often confronted with the challenge of aggregating heuristics and, in particular, giving form to sets of heuristics—"portfolios of heuristics" (Bingham & Eisenhardt, 2011). With respect to this challenge, extant theory falls short in further elaborating the cognitive process of giving form to portfolios of heuristics and - in the sense of Morgan (2012) - arriving at certain rule-bound structures. Hence, to establish the conceptual basis for giving form to portfolios of heuristics we need to revisit work on configurations in organization and management theory (e.g. Miller, 1996), where, we propose, gestalt theory offers a base on which to build.

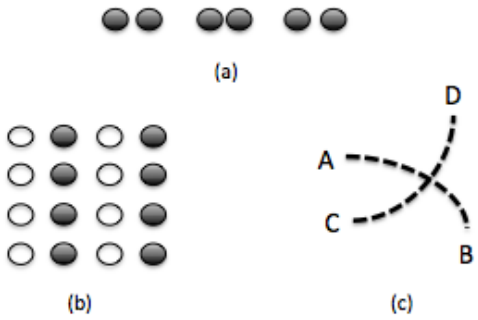
Principles of gestalt theory and configuration

As earlier work has outlined, business models can – in the light of configuration research – take different gestalts (Miller, 1996; Zott & Amit, 2007; 2008). This is of particular interest to our argument, as the human mind is capable of sensing different gestalts (Koffka, 2013). Empirical evidence on the value of gestalt has recently been reported in such management contexts as sequences of competitive actions (Rindova, Ferrier, & Wiltbank, 2010). Gestalts are understandable in the holistic sense, and "are not present in the component parts of the stimulus; therefore, their effects cannot be derived from observing the component parts in isolation" (Rindova et al., 2010: 1477). Gestalt theory has been widely applied beyond organizational and management settings, and gestalts have been described for visual shapes or musical melodies, as individuals tend to recognize gestalts in different visual and musical

contexts (Deutsch, 1999b). Several principles are involved in the cognitive process of sensing and grouping gestalts:

> *The early Gestalt psychologists proposed that we group elements into configurations on the basis of various simple rules (see, for example, Wertheimer, 1923). One is proximity: closer elements are grouped together in preference to those that are spaced further apart. An example is shown in Figure 1a, where the closer dots are perceptually grouped together in pairs. Another is similarity: in viewing Figure 1b we perceive one set of vertical rows formed by the filled circles and another formed by the unfilled circles. A third, good continuation, states that elements that follow each other in a given direction are perceptually linked together: we group the dots in Figure 1c so as to form the two lines AB and CD. A fourth, common fate, states that elements that change in the same way are perceptually linked together. As a fifth principle, we tend to form groupings so as to perceive configurations that are familiar to us.* (Deutsch, 1999a: 300)

Figure 1. Illustrations of the Gestalt principles of proximity, similarity, and good continuation



(source: Deutsch, 1999a: 300)

Gestalt principles have been broadly applied in management research, both explicitly and implicitly. For instance, the principle of proximity has often been used, not only for mapping spatial proximity but also topical proximity and the notion of 'fit' (Amit & Zott, 2008; Baden-Fuller & Morgan, 2010; Burns & Stalker, 1961; Miller, 1986; Mintzberg, 1979). Ideal-type gestalts are robust as they are general enough not to be distracted by the individual specifics of single cases, but are specific enough to capture variance accurately and so help clarify direction (Miller, 1986). Another example can be found in research on sequences of competitive actions that applies principles of familiarity in pattern recognition (Rindova et al., 2010). Further, the performance consequences of rhythmical patterns follow the principle of

good continuation (Klarner & Raisch, 2012). We can observe configurations of heuristics being assessed in individual business modeling processes and - a key proposition of this paper - being confirmed, reconfigured, or ignored in answers to given managerial problems (a process we outline in more detail in the following chapter).

The Process of Business Modeling

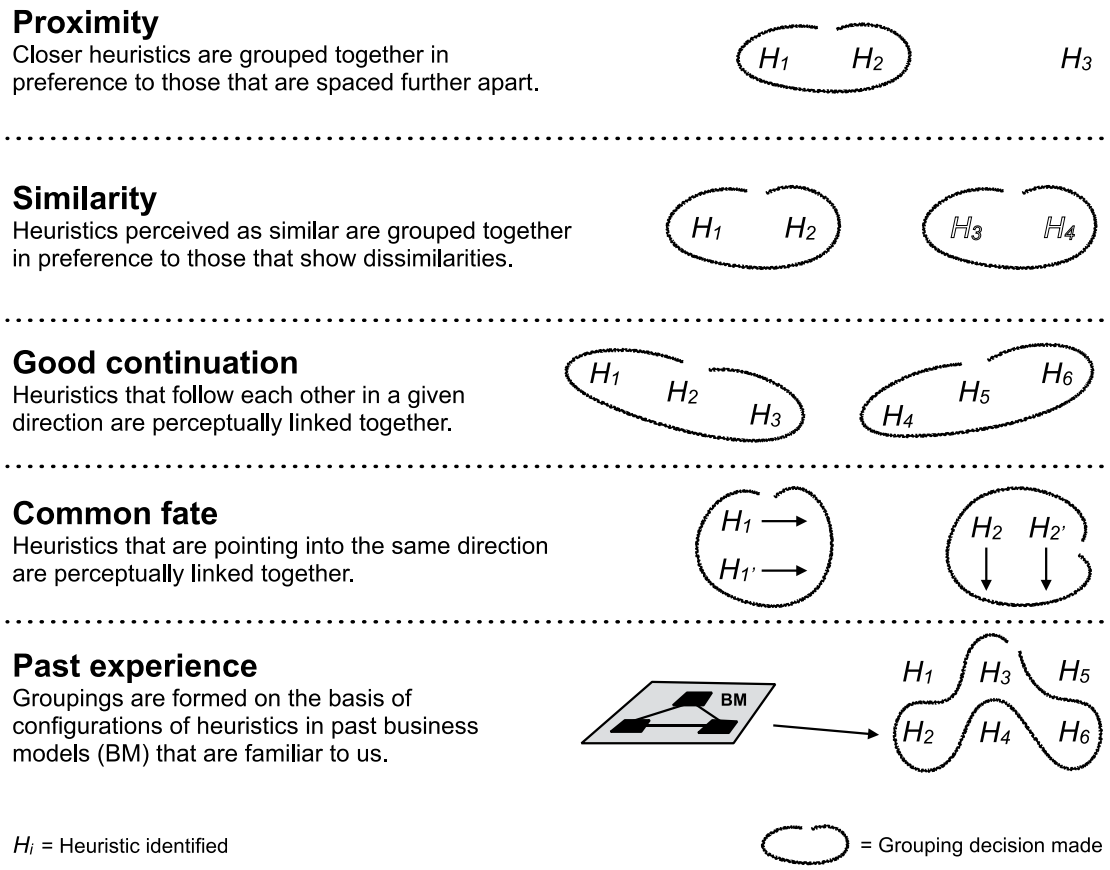
In this section, we suggest that individuals perform business modeling actions in order to make choices from configurations of heuristics. A contingent view on individual business modeling reveals the cornerstones of its ecological rationality, and depends on specific aspects of the decision task, the decision maker, and the decision environment. First, business modeling actions occur in situations that require adaptive behaviors, hence the choices involved are not covered by distinct rules about how they are to be configured (e.g., the 'be simple' rule does not provide direct guidance for which country to pick for an internationalization strategy). Second, individual business modeling takes into account the decision environment: on the one hand, this is constituted by rules and their respective configurations; on the other, these rules do not exist in isolation but are linked to other environmental information (e.g., further information and knowledge of the company's strategy, structure, governance or performance). Third, individual business modeling processes focus on decision makers and their cognitive activities, which might be bounded and subject to constraints (e.g., lack of available information, lack of computational and information-processing capacity, etc.).

By combining heuristics as models of individual cognition with gestalt theory, the business modeling process can be conceptualized as a specific mechanism that draws on elementary gestalt principles. Building on Deutsch's five principles (1999a; 1999b), managers can identify and recognize prior heuristics, and build configurations from them as follows: first, using the *proximity* principle, heuristics perceived as closer to each other are grouped together in preference to those that are spaced further apart. For example, consider the following three heuristics: 'sell cheap', 'tell the truth', and 'offer free coffee'. The manager who knows the story of Mrs. B. will recognize the former two heuristics as being located closer to each other than is the third (as he recognizes the former two from the story of Mrs. B., which does not include the third one) and, following that intuition, will tend to group the first two heuristics and separate the third ('offer free coffee") when enacting their business modeling. So the proximity determinants are based on managers' prior experience of

heuristics and of their links within existing business models. Second, based on the principle of *similarity*, heuristics perceived as similar are grouped together in preference to those that are dissimilar. For example, 'Sell cheap' and 'Tell the truth' are likely to be perceived as similar in comparison to a third heuristic of 'Tap into new market potential'. In such a case, individual managers may perceive the third as more complex and at a different level of abstraction, and so group the former two heuristics together. In other words, the similarity principle relates to the similarity of distinct heuristics rather than (as in the case of proximity) the distance between them in a given business model. Third, following the principle of *good continuation*, heuristics that appear to follow each other in a given direction are perceived as being linked together. For example, heuristics that appear to build on each other and display an implicit order of appearance may be perceived as a series, which the managerial mind would prefer not to break. Consider value chain linkages at Mrs. B.'s Nebraska Furniture Mart, such as the three heuristics of 'Buy cheap furniture', 'Provide clear retail presentation' and 'Charge fair prices'. A causal logic is implicitly encapsulated in the semantics of these heuristics - first, buying the furniture, then presenting it clearly in the store, and lastly collecting the money - which makes any reordering undesirable. Good continuation would then, for instance, be based on appending a fourth heuristic to the series - e.g., 'Collect customer feedback' – rather than breaking the chain with any intermediate heuristic. Fourth, the principle of *common fate* takes into account a manager's ability to recognize patterns of heuristics pointing in the same direction. Consider a case where heuristics of 'Grow the business', 'Hire people that are willing to take on new responsibilities' and 'Invest in emerging markets' are found together in an existing BM. Managers may recognize a common pattern in how these heuristics relate to the common aim of business growth, and would disregard heuristics that appear to point in a different direction - to an uncommon fate - such as 'Do not take any risks'. Fifth, drawing on the principle of *past experience*, managers may even recognize entire structures that appear familiar to them within an apparently unstructured portfolio of heuristics, and form groupings on the basis of configurations of heuristics that they have previously perceived in other successful business models. Hence, in this principle, past experience does not just refer to heuristics in managers' minds (as is the case in the first four principles), but may also be based on entire business models, i.e., based on managers' contextual, structural or topological experience of what previous successful business models look like.[2] Figure 2 gives an overview of Deutsch's five principles.

[2] Similarity between business models can be determined on various levels, such as e.g., the meta-model, sub-meta models or instances (Osterwalder, Pigneur, Tucci, 2005). Within the scope of our argument, we refrain from further elaborating on the

Figure 2. The gestalt principles underlying business modeling

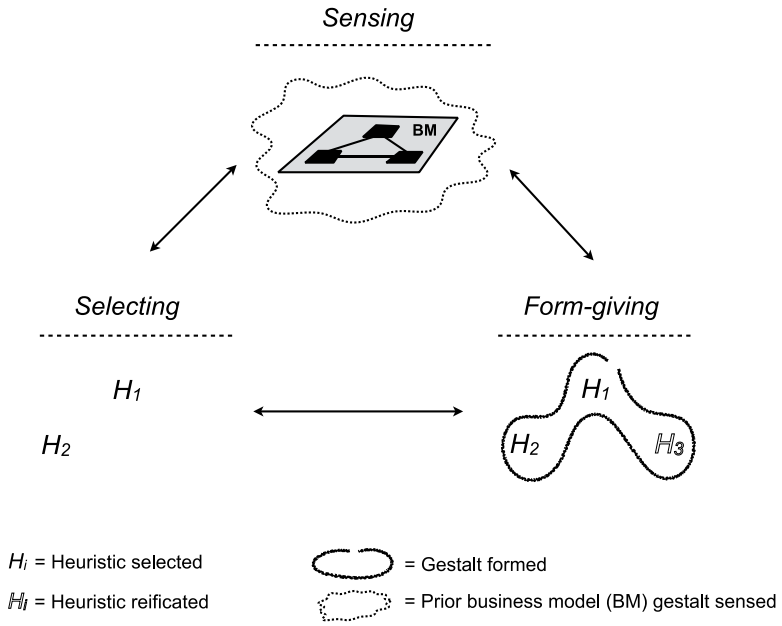


We build on these five principles - which together constitute an underlying cognitive mechanism - to conceptualize the process of business modeling. The inputs to this process are represented by a given portfolio of heuristics (Bingham & Eisenhardt, 2011), that reside in managers' minds, and which are primarily based on their prior experience. Together with the task of solving a business problem, this portfolio of heuristics plays a core part in triggering the business modeling process. This process consists of three cognitive activities, which build on each other in a bidirectional iterative cycle: first, *sensing* allows for identifying existing business model gestalts in the given firm's portfolio of heuristics. Through drawing on the five principles of gestalt, managers recognize patterns of familiar business models (or parts thereof) that exist within that portfolio. Second, *form-giving* refers to configuring those heuristics into new business model arrangements. In addition to the five principles, this

various approaches to determining similarities between business models, but appreciate the on-going debate, and refer to the work of Zott, Amit & Massa (2011) and Massa & Tucci (2013).

activity draws in particular on the gestalt mechanism of reification.[3] In gestalt theory, reification refers to the notion that the human mind perceives an object as having more spatial information than is actually present. For example, in visual objects, form-giving through reification can be explained as the human mind making up illusory missing contours, which it then treats as real (Deutsch, 1999a; Lehar, 2003). In our context, reification - like form-giving - allows the managerial mind to 'fill the gaps' between familiar gestalts identified among the given portfolio of heuristics, so determining those that need to be added to attain the desired business model shape (see Figure 3).

Figure 3. Form-giving of heuristics to attain a business model gestalt (drawing on the principle of past experience as illustrated in Figure 2)

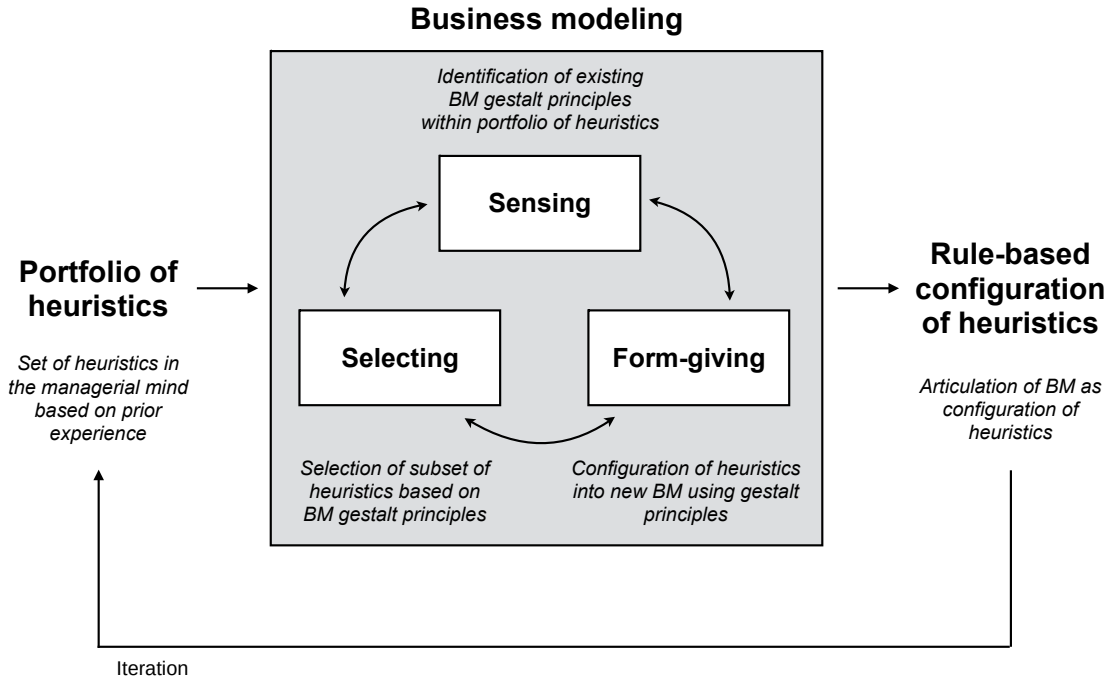


Third, following the form-giving activity, the *selecting* process determines which heuristics to retain, which to modify, which need to be added, and which should be discarded. The outcome of this activity is manifested in a subset of heuristics, which, in turn, are based on business model-based gestalt principles. This selection should be regarded as tentative, as the final rule-based configuration emerges out of an iterative loop involving all three steps, as the Figure 4 overview of the business modeling process shows. As this conceptualization of business modeling is, by definition, path-dependent in nature - the cognitive process is

[3] Notably, the terminologies of form-giving and reification should not be used interchangeably. While the cognitive activity of form-giving may, to a great extent, draw on the gestalt mechanism of reification, it must be emphasized that reification specifically describes the mechanism of completing a gestalt by 'filling the gaps', whereas form-giving is a super-ordinate activity that may encapsulate other mechanisms as well.

determined through the memory of heuristics and gestalts accumulated in the managerial mind - we model it as a feedback loop between the process' outputs and inputs.

Figure 4. The process of business modeling

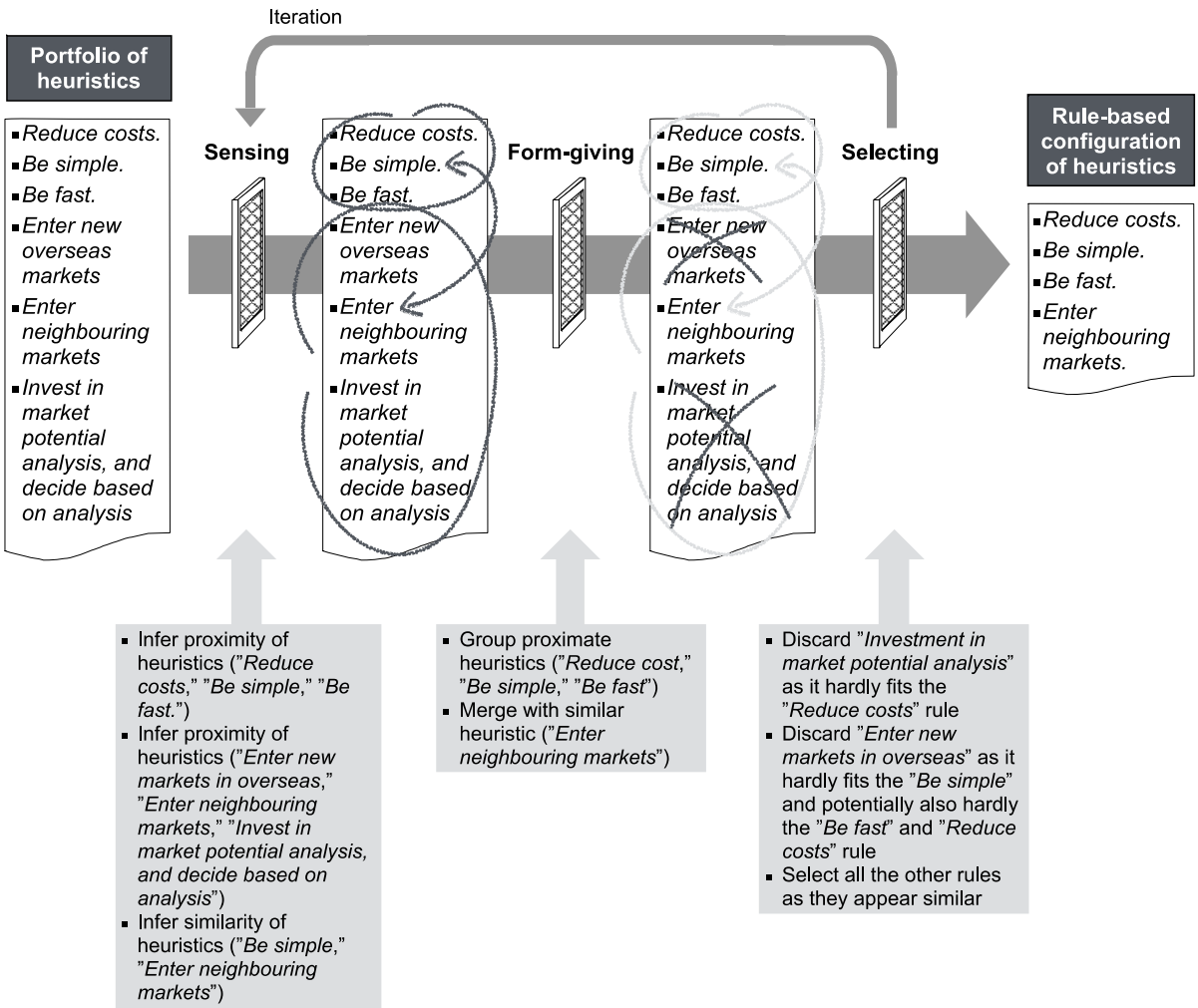


The following example can illustrate the model. We can imagine a generic instance of a portfolio of heuristics that centers on a gestalt relating to efficiency (‘reduce costs’, ‘be simple’, ‘be fast’). We derived these configurations of heuristics by simplifying items used in earlier work by Zott & Amit (2007, 2008) to identify efficiency-centered business model gestalts. However, business modeling is an adaptive problem, which requires configuring heuristics. For instance, the problem may be to formulate a strategy to internationalize an existing business. In this case, the initial rule-based configuration of efficiency-centered heuristics is not specific, and does not provide information that would be directly applicable to the particular task of internationalization. The initial configuration of heuristics, together with the heuristics that could guide internationalization, leads to a new portfolio of heuristics as the input for business modeling. During the business modeling process, the manager configures the portfolio to arrive at a rule-based configuration of heuristics that retain the efficiency-based heuristics, but is now suitable for its internationalization ambitions. Figure 5 gives an overview of the example, and the process steps can be reasoned as follows.

As this particular setting confronts the manager with a need to make sense of the

given portfolio of heuristics, the iterative cycle in this example begins with the *sensing* phase. In this step, the manager will perceive existing gestalts and will apply different gestalt principles to discriminate between heuristics and sense their relational structures. They would be able to sense the efficiency-centered gestalt that groups the 'reduce costs', 'be simple' and 'be fast' heuristics, and might also infer some proximate heuristics that relate to the internationalization task (e.g., 'enter new overseas markets', 'enter neighboring markets', 'invest in market potential analysis', and 'make decisions based on that analysis'). The manager may infer some similarity between heuristics such as 'be simple' and 'enter neighboring markets', based on the idea that they can be related to each other through the underlying logic that entering neighboring markets is simple (e.g., compared to entering remote markets overseas).

Figure 5. Example of business modeling as configuring heuristics, starting with 'sensing'



Form-giving enables the manager to create a new rule-bound structure, embodying the relations between the selected heuristics, and allows them to think of a rule-based configuration of heuristics that will define value creation and value capture in their business model. For instance, the manager might group proximate heuristics ('reduce costs', 'be simple', and 'be fast') and merge them with an adjacent heuristic ('enter neighboring markets').

Through the process of *selecting* heuristics the manager will decide which heuristics to retain and which to reject. In this example, the manager might discard 'investment in market potential analysis' as it doesn't really relate to the 'reduce cost' heuristic, or maybe discard 'enter new overseas markets' as it does not seem to fit well with the 'be simple' heuristic. However, he would retain 'enter neighboring markets' as this seems to be well aligned with 'be simple', 'be fast' and 'reduce costs', and the entry experience will be a useful step towards the firm's internationalizing ambitions. As a result of this business modeling process, the manager arrives at a configuration of heuristics that captures 'reduce costs', 'be simple', 'be fast' and 'enter neighboring markets'.[4]

Discussion

Managers' individual cognition is of interest when investigating the question of what business models are and what managers do both to make them, and in using them (Baden-Fuller & Haefliger, 2013; Baden-Fuller & Mangematin, 2013). The cognitive view of business modeling is embedded in broader accounts of cognition in management (Eggers & Kaplan, 2013; Gavetti, Greve, Levinthal, & Ocasio, 2012; Gavetti, Levinthal & Ocasio, 2007), but at the same time also distinguishes itself from this stream, as business models do not focus on single managerial problems but have a more holistic perspective. Nevertheless, the extant literature provides only limited insights into the cognitive foundations of business modeling: this paper contributes to filling that gap by outlining a theory of business modeling as a cognitive process of configuring heuristics. As such, we argue that heuristics provide the basic cognitive model, and gestalt theory the basic principle for configuring heuristics. In this way, our work strengthens our understanding of the cognitive micro-foundations of business modeling and offers implications for managing that process.

[4] Looking at Nebraska Furniture Mart's recent expansion activities, we can see an interesting analogy. Not entirely surprisingly, it appears that the firm also follows an expansion strategy - into neighboring markets with stores in Nebraska (Omaha), Kansas (Kansas City), Iowa (Clive, Des Moines) and now a recent opening in Texas (The Colony). This suggests a future expansion into neighborhoods further south, targeting North Texas and Oklahoma (http://www.bizjournals.com/dallas/news/2014/05/28/nebraska-furniture-mart-readying-to-hit-dfw-by.html?page=all, accessed March 5, 2015).

Research has long acknowledged the "heuristic logic" of business models (Chesbrough & Rosenbloom, 2002; Loock et al., 2015). Business modeling facilitates adaptive behaviour to align flexibility and unity (Doganova & Eyquem-Renault, 2009), just as heuristics do. However, at a micro-foundational level, it has so far been unclear how business modeling achieves this promise. The account of business modeling as configuring heuristics has the potential to offer an answer to exactly this void in micro-foundational theory. This paper shows how the cognitive process of configuring heuristics contributes to both dimensions, enabling both adaptive behavior and stability at the same time. Business modeling is an adaptive process, for which an initial portfolio of heuristics hardly provides sufficient guidance. Managers perform business modeling via configuring the initial heuristics, which in turn enables adaptive behavior. Business modeling refers to the basic gestalt principles that managers utilize to configure heuristics – these are anchored in human cognition, which suggests that the processes of sensing, form-giving and selecting heuristics based on gestalt principles will be shared among a group of managers.

Furthermore, prior research has claimed that "there are generic kinds of behavior which are distinctly different" (Baden-Fuller & Morgan, 2010: 159), so that cognitive processes will differ according to ideal types. Individual business modeling is a cognitive process that facilitates alignment of individuals' adaptive behaviors with those of their peers. As in the case of cognitive communities (Porac, Thomas & Baden-Fuller, 1989), which are shared by a larger group of individuals and capture knowledge about the consequences of choices, business modeling leads to the emergence of ideal-type managerial behaviors. In turn, these become the reference points against which the ecological rationality of business modeling is organized and new models materialize. Rather than single heuristics alone, the cognitive process of configuring a portfolio of heuristics offers sufficient detailed information to aggregate individual behavior into ideal-types (but at the same time enables adaptive individual action).

Finally, this paper contributes to the discussion of new managerial capabilities that behavioral strategists (e.g., Hodgkinson & Healey, 2011) have called for, and promotes individual business modeling as forming such new capabilities. Just as Weber regards model-making as a central task for social scientists (Weber, 2011), we show how it also matters for managers. While the aggregation towards the firm level needs to be left for future work, this work provides new insights into how individuals process gestalt information and perform business modeling.

Returning to the simple tenets on which Mrs. B. built Nebraska Furniture Mart, we

conclude that, although configuring heuristics may look easy, it needs to be performed accurately if it is to be an important factor towards establishing and sustaining a successful business. The relevance and the value of business modeling are becoming more evident, especially in the light of the disruptive changes that face established industries. Managers' individual cognitive processes of configuring heuristics will determine whether their firms' renewal efforts will succeed or fail.

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