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Rational Decision-Making as Performative Praxis:

Explaining Rationality's *Éternel Retour*

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To quote this paper

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Abstract

Organizational theorists built their knowledge of decision-making through a progressive critique of rational choice theory. Their positioning towards rationality however, is at odds with the observation of rationality persistence in organizational life. This paper addresses this paradox. It proposes a new perspective on rationality that allows the theorizing of the production of rational decisions by organizations. To account for rationality's *éternel retour*, we approach rational decision-making as performative praxis – a set of activities that contributes to turning rational choice theory into social reality. We develop a performative praxis framework that explains how theory, actors, and tools together produce rationality within organizations through three mechanisms: rationality conventionalization, rationality engineering, and rationality commodification. This framework offers new avenues of research on rational decision-making and points to the factors that underlie the manufacture of rationality in organizations.

Rational Decision-Making as Performative Praxis:
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> *"Research on strategic decision making has accomplished an enormous amount since Simon's break from the sterile view of 'economic man'."(Eisenhardt and Zbaracki 1992, p.35).*
>
> *"Ideas that emphasize limits on rationality and inconsistency in preferences and identities have become the received doctrine underlying most theories of organizational decision making." (March 1997, p. 28).*
>
> *"Yet, homo oeconomicus does exist! [...] [He] is formatted, framed and equipped with prostheses which help him in his calculations and which are, for the most part, produced by economics"(Callon 1998, p. 51).*

Decision-making research has a central place in economics, psychology and organization theory. Since the 1950s, scholars from these fields have thoroughly researched how individuals and organizations make decisions. In escaping the "old fashioned utilitarian psychology" of the 19th century (Sugden 1991, p. 757), economists developed axioms for rational decision-making (Savage 1954; von Neumann and Morgenstern 1947). Their major achievement, the concept of the "economic man" (Elster 1986), undoubtedly has normative content (Savage 1954). By contrast, organization theorists studied decision-making by moving away from this theory of choice, usually called rational choice theory. They rejected hypotheses of economic models arguing (with psychologists) that the "economic man" is too rational and fails to describe how organizational actors actually make decisions (Eisenhardt and Zbaracki 1992; March 1994). Their efforts produced such important insights as "bounded rationality" (March and Simon 1958), the political perspective on decision-making (Pettigrew 1973) or the "garbage can model" (Cohen, March, and Olsen 1972).

Organization scholars' theory-building logic however, fails to account for the observation of rationality persistence, as manifested in the existence of a body of knowledge

about rational decision-making, a community of practitioners of rational decision-making, a market for their wares, and a series of tools that support this practice. Our goal is to explain and address this paradox.

We suggest this paradox relates to organizational scholars' approach to rationality. Although organizational perspectives are based on different assumptions about decision-making, they share three common features which make rationality elusive. First, they all adopt a 'taken-for-granted' view on rationality. Second, they reify an artificial opposition between normative and descriptive research on decision-making. Third, they focus mainly on symbolic roles of tools supporting rational decision-making and underestimate their concrete roles in organizational decision-making. This positioning towards rationality we argue, inhibits our understanding of how organizations produce rationality and, more generally how a normative theory might be performed in decision-making.

We adopt an alternative positioning on rationality that allows the theorising of how organizations produce rational decisions. Building on the practice perspective (Reckwitz 2002) and the concept of performativity from economic sociology (Callon 1998), we conceptualize rational decision-making as performative praxis; that is, a set of activities whereby organizational actors collectively produce rational decisions and thus grant social reality to rational choice theory. We then unpack the mechanisms that sustain rational decision-making performative praxis: rationality conventionalization, rationality engineering, and rationality commodification. We articulate these mechanisms in a performative praxis framework that describes the manufacture of rationality in organizations. This framework explains how theory, actors, and tools together produce rationality within organizations. Hence, it accounts for the persistence of rationality in everyday organisational life.

The paper is structured as follows. Part 1 reviews research on rationality in organizational decision-making. Part 2 reviews three features of organization scholars'

positioning towards rationality which inhibit our understanding of how and why organizations produce rationality. Part 3 conceptualizes an alternative approach to rational decision making as performative praxis. Part 4 describes the mechanisms that sustain rational decision-making performative praxis in organizations. Lastly, we discuss the implications of this framework.

Rationality and Organizational Decision-Making

The progressive liberation of the "economic man" captures the history of research on strategic and organizational decision-making. This research has criticized the empirical validity of rational choice theory, rejected its stringent hypotheses, and developed alternative models of organizational decision-making (Eisenhardt and Zbaracki 1992; March 1997; Sfez 1973).

The Rational Model

Rational choice theory is often labeled the "economic model of rationality" because many economists use it to conceptualize problems about consumer choices or investment decisions (Mas-Colell, Whinston, and Green 1995). It can be depicted as follows: the decision-makers should first structure a problem and define a set of alternative decisions. Second, for each alternative, they should specify a measure that reflects their preferences (subjective utility) and evaluate the likelihood (probability) of each alternative occurring. Third, decision-makers should compare alternatives, select the one with the highest expected value, and then implement it (Keeney 1982; von Neumann and Morgenstern 1947; Savage 1954). Contrary to other social sciences' conceptions on rationality, the economic view stresses internal consistency between preferences and choices of individual decision makers. Simon (1978) coined this distinction by opposing the "substantive rationality" of economists, or "the extent to which appropriate courses of action are chosen" (p. 9) to "procedural

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rationality", or "the effectiveness, in light of human cognitive powers and limitations, of the procedures used to choose actions" (p. 9).

Each step made by organizational researchers beyond this view of rationality contributed to the furtherance of our understanding of organizational decision-making processes. For instance, building on Simon's view of procedural rationality, some management scholars studied the comprehensiveness (or rationality) of organizational decision-making processes (Fredrickson 1984; Dean and Sharfman 1993b), creating the dominant model of decision-making in strategy, sometimes called the "synoptic", "comprehensive" or "rationalitistic" model (Eisenhardt and Zbaracki 1992; Elbanna and Child 2007; Fredrickson 1984; Hendry 2000). This model generated considerable research on internal and external variables which influence the comprehensiveness of organizational decision-making processes, and ultimately firms' performances (Bourgeois and Eisenhardt 1988; Dean and Sharfman 1993b; Nutt 1976; Papadakis, Lioukas, and Chambers 1998).

Although based on Simon's concept of bounded rationality, the literature on comprehensiveness considerably weakened Simon's critique. By assuming that rational decisions are attempts to perform rational choice theory for instance, it transformed "the rational vs. bounded rational dichotomy into a continuum" (Eisenhardt and Zbaracki 1992, p. 18). In so doing, management scholars altered the rational choice model but nonetheless accepted it as a normative ideal. More fundamental critiques of rational choice theory thus came from other scholars who showed that political battles – rather than comprehensive processes – form the background of organizational decision-making.

Political Models

The political perspective – another paradigm in strategic decision-making research (Eisenhardt and Zbaracki 1992) – challenges the idea that organizations can make 'rational decisions' as defined in the synoptic model. It argues that individual decision-makers are not

the most relevant unit of analysis and demonstrates that conflicts of interest between self-interested individuals or groups inevitably form the background of organizational decision-making (Crozier and Friedberg 1980; March 1962; March and Olsen 1976; Pfeffer and Salancik 1974). Political models are regarded as the antithesis of synoptic models because they contend that organizational decisions do not emerge from logical decision-making processes, such as searches for relevant information, listing alternatives, etc. By contrast, they show that choices result from bargaining and materialize the preference of the most powerful actors (Allison 1971; Pettigrew 1973).

Despite clear differences between rationalistic and the political perspective, political descriptions of organizational decision-making processes do not describe 'irrational' actors. Even though the political perspective challenges the assumption that groups and organizations (or collectives of individuals) are rational, it assumes that individual actors are rational, at least in the sense that 'political' rationales support their actions and decisions (Crozier and Friedberg 1980). Thus, despite clear differences between rationalistic and political perspectives, political models do not fundamentally reject the idea that organizational actors are self-interested and that their actions result from attempts at rational choices.

Critical Perspectives

The main criticism of the economic model of rational choice eventually came from models that rejected the idea that choices result from complete knowledge and exhaustive analysis (Hendry 2000), and challenged all rationality within decision-making processes. For instance, the anarchical approach to decision-making, depicted by the "garbage can model" (Cohen, March, and Olsen 1972), pushed "bounded rationality" to its limit by describing organized anarchies where decisions can occur independently of any individual rationality (Langley et al. 1995, pp. 261-263). Although evidence for such an extreme perspective is

rather soft (Eisenhardt and Zbaracki 1992), the idea that organizational decision-making is stochastic stimulated much research. Topics included emergent and unpredictable aspects of decision-making (Mintzberg and Waters 1985), complexity (Langley et al. 1995), chaotic dynamics (Thiétart and Forgues 1995, 1997), factors affecting the purity of rationality (Janis 1972; Schwenk 1984) and inherent irrationality (Brunsson 1985, 1989).

Another example of critical perspective on decision-making is action theory, which considers that intentions (or mental decisions) are irrelevant and that only "decisive acts" (or actual decisions) matter (Starbuck 1983). Hence, organizations are depicted as "generators of actions", that is, they act strategically (for example, committing resources) without making any intentional decisions (Starbuck 1983). The success of critical perspectives on organizational decisions however, could be a pyrrhic victory leading organizational theorists to say "one more such victory [against rationality] and we are lost" because critiques of the "economic man" portend destruction of the concept of a decision itself.

Each step beyond the image of the "economic man" has provided rich insights into how decisions are reached and renewed the study of decision-making. In moving the field towards a more humanizing and contextualizing view of decision-making (Langley et al. 1995), it succeed in replacing the cold "economic man" who acts as a robot, by decision-making processes describing humans who have feelings and deploy political strategies. As a result, rational decision-makers can now be contrasted with a more realistic view of decision-making, widely accepted among strategists and organizational theorists (March 1997; Miller and Wilson 2006).

Over time however, the academic return of this research strategy decreased (Chia 1994; Laroche 1995; Sfez 1973). Langley et al. (1995) for instance, considered that "after more than 30 years of research, the literature of organizational decision-making exhibits its own lethargy" (pp. 260-261). Furthermore, this research strategy created a situation where

rationality has become the reference point of organizational studies on decision-making, while remaining an elusive concept that organization scholars struggle to capture empirically and theoretically. Hence, this theory-building logic failed to account for rationality's persistence in organizational life. In the next part, we review three features of organization scholars' positioning towards rationality which inhibit our understanding of how and why organizations produce rationality.

Three reasons for Rationality Elusiveness

Some organizational scholars noticed that in spite of years of research on decision-making, rationality remains elusive (Laroche 1995; March 2006). This situation, we argue, comes from three features of organizational scholars positioning towards rationality: the maintenance of a 'taken-for-granted' view on rationality, an artificial separation between normative and descriptive perspectives of rational decision-making, and neglect of the role of objects as potential 'rationality carriers' within organizations.

Rationality's taken-for grantedness

In spite of their recurrent critiques of rational choice theory, most organization theorists and strategic management scholars have accepted rational choice theory as a normative ideal and a reference point for decision-making. As March (2006) says, rationality has become a "convenient bête noire organizing those who reject it as much as those who accept it" (p. 203). Even action theorists, who consider decisions as underlying phenomena (Laroche 1995; Starbuck 1983), are subject to that critique. Their strategy progressively deconstructs categories of analyses in decision-making research: 'decisions', 'decision maker' and 'decision-making' (Brunsson 1989; Chia 1994; Laroche 1995). On the other hand, as Reed (1991) commenting on Brunsson's book noted, their works indicate that "[rationality]

continues to provide the assumptive framework and substantive agenda against which critics are forced to react and, however unintentionally, pay their respects to." (p. 562).

Generally, organization scholars have "preserved the axiom of rationality"; that is, "the idea that human behavior is intelligent, even when it is not obviously so" (March 1978, p. 268). This conservative attitude is visible in that their consistent critique of rational choice theory actually expanded the concept of rationality. There are now almost as many alternative views of rationalities as there are critiques of rational choice theory. Examples include limited rationality, contextual rationality, game rationality, process rationality, adaptive rationality, selected and posterior rationality (March 1978). The synoptic model of decision-making illustrates this very well. It promotes rationality as a continuum, bounded at the one end by the ideal type of rationality as utility maximization, and at the other end by non-rationality (Dean and Sharfman 1993a/b; Eisenhardt and Zbaracki 1992; Langley et al. 1995). Clearly, this conception of rationality can reconcile diverse theories that exist in a field sometimes described as a "crazy quilt of perspectives" (Eisenhardt and Zbaracki 1992, p. 17). However, it is also confusing because it creates a situation where "distinguishing between politics and rationality is difficult as it can be rational to be political and politic to be rational" (Dean and Sharfman 1993a, p. 1072; Royer and Langley 2008). Moreover, it contributes to the ratification of the idea that human behavior is inherently rational and that organization studies have to uncover its rationality.

The maintenance of a 'taken-for-granted' view on rationality creates a paradoxical situation: while rationality remains constantly present in organization studies as a reference point, its empirical presence in organizational life remains permanently questioned. That 'taken-for-granted' view on rationality additionally strengthens the normative-descriptive tension that inhabits the field.

The Normative-Descriptive Tension

Opposition between 'purely descriptive' and 'purely normative' perspectives is the "conventional dogma" of organizational literature on decision-making (Brunsson 1989; Eisenhardt and Zbaracki 1992; March 1978). Many organization theorists have labeled the rationalist perspective a 'normative enterprise' having neither descriptive power in organizational settings nor any concrete impact on the organizational world (Eisenhardt and Zbaracki 1992). The creation of two distinct academic fields has helped endorse that separation. One field is economics which has developed a normative theory of decision-making, and the other is organizational/strategic decision-making which takes a descriptive viewpoint (Keeney, See, and von Winterfeldt 2006; March 1997).

This separation has an obvious epistemological limitation because normative and descriptive perspectives are not radically distinguishable (Putnam 2002). In addition, it is historically inaccurate. March (1978) convincingly argued that descriptive and normative theories of decision-making developed "in a dialectic manner rather than as separate domains" (p. 268). Finally, the extreme case of decision analysts – academics and practitioners who try to make rationality occur in actual organizational choices – illustrates empirically the existence of an important overlap between normative theories of rationality and organizational decision-making. From the beginning, decision analysis developed as an applied and prescriptive discipline (Howard 1966, 1988). To improve organizational life, decision analysts promoted consultation, developed training programs in Decision Analysis (Keeney, See, and von Winterfeldt 2006), and created trade associations, which welcomed both academics and practitioners (Decision Science Institute, INFORMS). Mindful of the difficulties that decision-makers have following rational choice theory axioms, they created technologies to 'de-bias' them (Clemen and Reilly 2001).

Without question, decision analysis is extreme. It nonetheless shows that theory-driven actors attempting to enact an ideal of decision-making can have an impact on organizations.

Given that many experts and consultants use a rational perspective to help organizations make 'better' decisions, their practice can explain—at least partially—rationality persistence in organizational life.

Tools as Rationality Carriers

Laroche (1995) and Langley et al. (1995) argued that past decision-making research could not free itself from rationality because of a methodological bias. If research to investigate decisions has to contain some form of rationality, then researchers may artificially reconstruct their object – namely 'decision' – through reorganizing and reconstructing data to fit with their *a priori* definition of 'decision process'. This critical reflection makes it impossible to reveal common methods used by actors in context (Garfinkel 1967). Building on this insight, research from the field of Science and Technology Studies promises an explanation for rationality persistence.

In a classic paper, Latour (1992) argued that morality has not diminished in developed Western societies, but is now embedded in devices and artifacts that make us act morally. Similarly, rationality may be embedded in technological artifacts or tools that support actors' decision-making processes, making them more rational that they actually look to researchers. From this perspective, the rationality of decisions, while being masked to researchers looking for it in decision-makers' minds, would systematically reappear in empirical studies because "technologies of model-based rationality" (March 2006, p. 202) form the background of organizational life. Mundane organizational artifacts would be the "missing masses" of organizational decision-making (Latour 1992, p. 225) that hide the "lost object" of decision-making literature (Laroche 1995), namely rational decisions.

A growing body of research mobilizes Science and Technology Studies and Actor-Network Theory (Latour 1992, 1994; Star and Griesemer 1989), as well as insights from distributed cognition (Hutchins 1995a/b) to study accountability and information systems

(Boland, Tenkasi, and Te'eni 1994; Orlikowski 2000). The study of the effects of technology on decision-making however, is in its infancy (Orlikowski and Scott 2008; Molloy and Schwenk 1995). Few studies for instance, have approached artifacts embedding rational models' assumptions as 'rationality carriers' that regulate and support decision-makers. More generally, this perspective calls for research on the role of decision-making tools in the "permanent making" of rationality and the distribution of rationality between humans and objects (Latour 2005).

In a nutshell, some researchers take for granted the existence of rational decisions (Hendry 2000) and believe that decision-making is two separate fields of research – normative and descriptive. This view overshadows the fact that rational decisions involve complex processes whereby organizational actors collectively produce rationality. It also overlooks the role of decision-making tools as rationality carriers. Hence it seriously hampers our ability to understand how organizations produce rationality. In the remainder of this paper, we offer an alternative conceptualization of rational decision-making that accounts for the *éternel retour* of rationality by reintegrating normative theory of rational choice and the concrete role of rational decision-making tools within the analyses of rational decisions.

Approaching Rational Decision-Making as Performative Praxis

Thus far we have criticized the status of rationality in research on decision-making, but done little to develop an alternative approach. We now develop a theory about the production of rational decisions by organizations. To do so we conceptualize rational decision-making as performative praxis. By *praxis*, we refer to the flow of activity by which rational decision-making is accomplished (Jarzabkowski 2003; Whittington 2006). In saying that rational decision-making praxis is *performative,* we mean that it contributes to the realization of a theory of rational choice (Callon 1998; Callon 2007; MacKenzie 2006). The next two

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sections elaborate the concept of performative praxis and clarify the rationale for approaching rational decision-making as performative praxis.

Rational Decision-Making as Praxis

Organizational studies have mainly approached organizational decision-making as a process (Langley et al. 1995; Nutt 1976). They have considered the degree of rationality within decision-making as a variable which can be evaluated from outside (Fredrickson 1984; Dean and Sharfman 1996). In this paper, we approach rational decision-making as a purposeful effort of managers in search of rationality. To uncover the production of rationality, we follow organization scholars who have studied decision-making as strategy praxis, i.e., something that emerges from the *doing* of organizational actors (Jarzabkowski 2003; Jarzabkowski, Balogun, and Seidl 2007; Johnson et al. 2007; Whittington 2006).

From this perspective, decision-making routines, such as recruiting, integrate an ostensive rationality constituted of the actors' performances. This generative component forms the common ground of both the performative aspect of routines (Feldman 2000; Feldman and Pentland 2003) and "praxis" as defined by Whittington (2006). Accordingly, in approaching rational decision-making as praxis, we focus on the actual doing of a whole spectrum of actors who perform rational decision-making (Hendry 2000; Eisenhardt 1989; Langley 1989). This group includes the decision-makers, and a broad range of actors who might not be directly involved in the final decisions but who contribute to making rational decisions happen. For instance, a staff person or an internal task force could conduct the analytical work on the behalf of the final decision-makers (Langley 1989). Beyond organizational borders, this group may include actors who take part in crucial episodes of strategic decision-making. For instance, independent consultants might help to run a scenario planning session during a strategy workshop (Hodgkinson et al. 2006).

The practice perspective also highlights the crucial importance of tools and techniques in daily decision-making activities (Reckwitz 2002). Langley (1989) for instance explicitly links reports made to support decision-making to quantitative techniques (e.g., cost-benefit analysis) and to the use of software packages. Yet, because of bounded rationality, rational decision-making praxis is likely to be interlocked with material artifacts expanding actors' cognitive abilities (Langley 1989). Information search for instance – a key step in rational decision-making – is an activity that nowadays may involve computers and software such as search engines (Orlikowski 2007). The socio-materiality of decision-making thus is another key pillar of a social practice approach to rational decision-making.

Lastly, social practice investigations of rationality study the effects of decision-making praxis. So far however, this research has mainly focused on the symbolic and communicative effects of formal analysis (Langley 1989) or the discursive and psychological roles of rational decision-making (Hendry 2000; Laroche 1995). We argue that rational decision-making praxis in organizations has also a *performative* effect because it contributes to bringing rational choice theory into being (Callon 1998; Latour 1996). The next section builds on the concept of performativity in economic sociology (Callon 1998; MacKenzie and Millo 2003) to define rational decision-making as a specific category of praxis; a praxis that is *performative*.

Rational Decision-Making as Rational Choice Theory Performativity

In economic sociology, a theory is said to be *performative* when it influences social reality in such a way that its premises, and sometimes even its predictions, become true (Barnes 1983; Callon 1998; Latour 2005; MacKenzie 2004). In affirming that "economics is performative", this research asserts two core ideas: (a) "that economic relations are not to be taken as given, but as performed by economic practices"; and (b) "that economics brings into being the relationships it describes" (MacKenzie 2004,. p. 303). Studies on retail markets

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(Cochoy 2008), auction design (Muniesa and Callon 2007; Garcia-Parpet 2007) carbon trading (Callon 2009), and finance markets (MacKenzie and Millo 2003; Beunza and Stark 2004) demonstrate that economics has been progressively turned into social reality.

MacKenzie's insightful analysis of modern financial markets for instance reveals the processes whereby financial models (such as Modigliani and Miller's theorem), despite unrealistic assumptions about investors' rationality, have literally co-created the phenomena they posit (MacKenzie 2006). For instance, futures markets could not exist without theoretical foundations provided by modern finance theory. MacKenzie (2006) also points to conditions required for economics to be performative, such as the existence of material means of calculation that incorporate economics' assumptions. Portfolio managers and traders for instance perform economics when they rely on paper sheets or portable programmable calculators which embed economic formulae (for example, beta indicator of a stock's risk and Black and Scholes equation for option pricing). These activities parallel managers' attempts at making rational decisions. In a similar fashion, decision-makers may rely on tools and frameworks that embed rational choice theory's assumptions. In both cases economic theory is part of the elements that form the background of actors' activities and can be expressed through actors' praxis.

Performative studies thus reveal that what enables actors to express a theory in their routines, discourses and behaviors (Butler 1997; Feldman and Pentland 2003; Mol 2002) is the embeddedness of this theory's assumptions into procedures, devices, and actors' beliefs (Callon 1998; Ferraro, Pfeffer, and Sutton 2005, 2009).[i] Accordingly, performative praxis refers to actors' daily activities which turn theory into social reality. These activities are supported by material tools and cognitions embedding this theory's assumptions. Performative praxis thus requires the co-presence and combination in action of three core elements: theory, tools and actors. Figure 1 shows our model of rational decision-making as

performative praxis. It stresses three elements—tools, actors and theory—that are intrinsic parts of organizations' performative praxis of decision-making insofar as they enable actors to make rational decisions.

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Figure 1 central component is rational decision-making performative praxis; that is, a set of activities corresponding to rational decision-making and that perform rational choice theory. Rational decision-making praxis emerges from the interrelation of the three elements. To account for the production of rational decisions by organizations, we have yet to describe the mechanisms linking these three elements. The next part unpacks these mechanisms to explore the manufacture of rationality.

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**Unpacking Performative Praxis Mechanisms:
The Manufacture of Rationality**
</center>

We contend that three mechanisms, as described by links between the boxes in Figure 1, sustain rational decision-making performative praxis. These mechanisms relate rational choice theory to organizational decision-making praxis. First, *rationality conventionalization* explains how rational choice theory equips practitioners. Second, *rationality engineering* refers to the process whereby tools incorporating rational choice theory's assumptions are developed. This process describes the material embeddedness of organizational decision-making processes within rationality. Third, *rationality commodification* describes how market forces diffuse rational decision practices and enhances practitioners' influence on organizational decision-making. The following sections explain how together the three processes produce rational decision-making within organizations.

Conventionalizing Rationality

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Laroche (1995) convincingly argues that decisions remain central to organizational life. He shows that the concept of 'decision' remains a social representation that actors use to make sense of organizational events (Jodelet 1991; Moscovici 1991), to understand organizational functioning, or to coordinate actions (Hendry 2000; Weick 1995). Accordingly, we argue that rationality has not disappeared from organizational settings but has been turned into a 'convention', a social norm guiding actions and decisions and "feed[ing] the rhetoric of justification" (Czarniawska 2003, p. 359). Conventionalists such as Boltanski and Thevenot (2006) have shown that engineers and managers inhabit "worlds" where rationality is important. In the "industrial world", it provides rationales that help managers defend their positions when controversies occur (Boltanski and Thevenot 2006, p. 203).

We argue that the cognitive embeddedness of future managers within economic assumptions (Callon 1998) turns rationality into a convention. Business schools and other institutions training and educating managers are intrinsic parts of this process of rationality conventionalization. Knowledge taught in business schools – even when irrelevant – significantly impacts on managerial practices because it shapes "the intellectual and normative order within which all day to day decisions (are) made" (Ferraro et al. 2005, p. 75; Ghoshal 2005). As applied to decision-making praxis, this suggests that teaching rational choice theory to business students impacts on an organization's culture and decision-making practices. Czarniawska (2003), for instance, argues that teaching business students the 'rationality myth' has had a least one concrete consequence in organizations. She says that it has contributed to a paradoxical situation where two long-standing conflicting logics no longer conflict. Those two logics are the "logic of consequentiality", or the consequences of actions in decision-making, and the "logic of appropriateness", or the values and obligations in decision-making (March and Olsen 1989; Weber 1978). Czarniawska (2003) suggests that

teaching the ideal of a 'rational manager' to business students has helped convince them that, in the business world, the appropriate logic of decisions is the logic of consequentiality.

Since Gordon and Howell (1959)'s report for the Ford Foundation, management curricula have been dominated by economics (or related theories such as decision theory, game theory, agency theory) and more quantitative disciplines such as mathematics, statistics, finance and operations research which promote a rational approach to management (Augier and March 2007; Ghoshal 2005; Leavitt 1975, 1989). At Harvard and Rochester, for instance, Jensen and Meckling act as 'rationality prescriptors' when they teach their business students that agency theory, and its model of a "resourceful, evaluative, and maximizing agent", is the social science model that best captures the "systematically rational part of human being" (Jensen and Meckling 1994, p. 5). They have also used this model, which they believe describes 'the nature of man', to introduce organizational strategy (Jensen 1988). Generally, Liang and Wang (2004) show that a rational approach to management is implicit in most MBA teaching cases and is the dominant mental model of business schools.

Teaching such a model eventually produces some effects. The ASPEN Institute recently surveyed MBA students from 13 international business schools and concluded, that "students' attitudes about business – its role and responsibilities – are shaped by what they learn over the course of an MBA degree" (ASPEN 2001). More importantly for our argument, it also notes "a shift in priorities during the two years of business school from customer needs and product quality to the importance of shareholder value" (ASPEN 2001). These examples illustrate that business schools retain the view of the 'rational man' of economics, in spite of considerable organizational research which emphasizes how unrealistic this approach is. Most managers learn that (a) logical cost-benefit analyses of various actions should result in good decisions, and (b) rational decision-making allows organizations to succeed.

By promoting a normative framework of rational decision-making over many years, business schools have cognitively embedded future managers in rational choice theory. Teaching tools and techniques based on rational choice theory have enabled students to make rational decisions in organizations. The willingness of students to do so has turned these assumptions into conventions throughout organizations. Like the "cognitive pillar" of institutional theory, the process of conventionalization gives rational forms of decision-making their 'taken-for-granted' aspect (Scott 1995). Yet, it not only facilitates actors' internalization of rationality, but also supports their efforts to pursue rational forms of decision-making by providing appropriate cognitive and discursive resources.

Engineering Rationality

The cognitive embeddedness of managers within rational choice theory, however, is a necessary, but not sufficient, condition for rational decision-making praxis. Research on decision-making has shown that managers have limited cognitive capacities and rely on heuristics to make decisions (Bazerman 2005; Kahneman, Slovic, and Tversky 1982; Schwenk 1984; Simon 1955). Making managers rational decision-makers involves more than teaching the principles of the economic theory of choice. Managers who strive to make rational decisions must overcome their limited cognitive capacities with decision-making tools and techniques, such as software, decision-support systems and other calculative devices (Clemen and Reilly 2001; Hutchins 1995a/b; Hodgkinson et al. 1999). Making economics performative requires *both* the theory *and its world* – a socio-technical assemblage of human and non-human factors (Callon 1998; Ferraro et al. 2005; Muniesa and Callon 2007). The production of rational decisions has to be sustained by rationality conventions, but also by materials that incorporate rational choice theory's assumptions.

A whole set of decision-making tools and techniques frame and support rational decision-making in organizations. Strategic research on decision-making, as well as

consulting surveys (such as the Bain & Company annual Management Tools and Techniques survey) confirm that many corporations sustain their decision-making praxis by using tools found in management textbooks (Rigby 2001; Stenfors et al. 2007). These diverse tools and techniques are all rooted in, and share a common goal of, a rational view of management and decision-making. They provide organizational actors with an environment that allows and sustains rational decision-making. These "technologies of model-based rationality" (March 2006) can be seen as "prostheses" which enable managers to make rational decisions by overcoming limited cognitive capacities (MacKenzie 2006; Callon 1998).

Not all decision-making tools and techniques are as deeply rooted in rational choice theory as decision aiding tools developed by decision analysts. Tools, such as decision trees, influence diagrams, spreadsheet applications for conducting sensitivity analysis and software such as @RISK (Palisade), Crystal Ball (Oracle) or Hiview (Catalyze), are at the extreme of the 'rationality spectrum'. Decision analysts developed them precisely to overcome decision-makers' limitations and help them fulfill the normative model of choice. Even less formal, but more widely diffuse tools from strategic management (such as SWOT-analysis), strive to formulate strategy in a systematic and analytical way. As Grant (2008) explains, strategic analytic frameworks "allow us to identify, classify, and understand the principal factors relevant to strategic decision" (p. 27). Similarly, the tools and techniques of Operations Research and Management Science such as optimization, linear programming, or real options analysis promote an analytic and rational approach to management.

All these examples show that devices and tools that incorporate the principles of rational choice theory surround organizational actors. They demonstrate that an engineering process makes rationality accessible to a wide range of organizational actors by materializing the principles of rational choice theory (Orlikowski and Scott 2008). These devices turn rational choice theory into a social reality which is accessible, available, and potentially

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useful. This engineering process thus plays a crucial role in making rational decisions in organizations because it ensures the (re)production of a context favorable to rational decision-making.

Commodifying Rationality

If rational decision-making has become a convention, consultants, academics and other practitioners have made it a commodity by selling it to managers and organizations in search of rationality (March 1988, 2006). Commodification, a process which affects both rational choice theory and organization theories (Gabriel 2002), complements conventionalization and engineering. It supports the spread of rational choice theory, which is embedded in practices and tools (engineering), and is present in the minds of practitioners thanks to conventionalization. It also strengthens conventions and engineering by linking them to powerful market forces, developing markets for rational decision-making consultancies and the diffusion of tools.

Business historians, such as Kipping (1997, 1999) and McKenna (1995), have documented the process of commodification. They described the rise of a new profession of "management consultants" who sell analytical tools and techniques aimed at improving the process and performance of corporate strategy making. Their studies show that management consulting has grown consistently throughout the 20th century, and especially in the 1980s and 1990s. Kieser and Wellstein (2008) estimated that in the US consultation for operations management and corporate strategy doubled between 1994 and 2006, to reach approximately 40 billion USD annually. They report an even more impressive rate of growth in Europe where it grew from approximately 5 billion USD in 1994 to 30 billion USD in 2006. This research also shows how this developing market has shaped organizational structures and strategy (Kipping 1997, 1999).

Studies of consultants' interventions suggest they play several symbolic roles, beyond supporting a decision-making praxis. External consultants convince their clients of the quality and worth of their own work (Clark and Salaman 1998a/b). They provide external legitimacy to executive decisions and help facilitate their implementation (Langley 1989). Commodification reinforces conventionalization by re-initiating the need to adopt a rational approach to decision-making (Czarniawska 2001). Consultants also provide organizational actors with the elements they need to make actual decisions. They sell various strategy- and decision-making tools to support their clients' decision-making practices. They can even oversee, on the behalf of their clients, entire designs and implementation of strategies.

Few researchers have investigated the 'craft of strategy' by consultants and managers, or evaluated its contribution to rational decision-making praxis. The few existing investigations usually highlighted how consultants rationalize strategic decision-making practices, and thus act as actual 'rationality prescriptors'. Schwarz (2006) describes consultation as an effort to "put structure on strategy making." In her view, "[consultants'] analytical and rational approach (…) balance out the more emergent approach employed by their clients" (Schwarz 2004, 2006, p. 15). In the same vein, Trigo, Angwin, and Wilson (2006), observed several case studies where strategic decision-making processes fit well with the rational model and attributed it to management consultants. By contrast, Czarniawska (2001) stresses that it is difficult for consultants to adopt an alternative 'constructionist' view that does not fit with rational choice theory.

Relationships between rational choice theory, consulting, and the praxis of rational decision-making become stronger through the actions of academics. Like accounting academics who help construct financial practices (Ahrens and Chapman 2007; Latour 1996), organization and management scientists contribute to the phenomenon of rational decision-making. For instance, in a subfield, such as strategy, academics contribute to make rational

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decision-making a commodity when they act as consultants, and when they support

consultants prescribing rationality. Operations Research & Management Science academics

also contribute to the commodification of rational choice theory when they translate rational

choice theory into tradable tools, such as software, and when they facilitate rational decision-

making processes within organizations (Keefer, Kirkwood & Corner 2004, Pearman 1987).

This suggests that 'rational decision-making' is a market, but also an organizational field on

its own (DiMaggio and Powell 1983). It encompasses academics, practitioners and managers

who diffuse and promote a specific form of rational decision-making through their

interactions.

Manufacturing Rationality

Commodification provides actors with tools and services embedding rationality;

engineering ensures that rationality is incorporated into tools and services; and

conventionalization provides a cognitive basis for rational decision-making. Each process

transcends organizational boundaries and feeds internal decision-making with the ingredients

for deciding rationally. They reinforce each other to enhance the organizational production

of rationality. In its entirety, the framework describes core dimensions that constitute rational

decision-making as performative praxis (tools, actors and rational choice theory) and explains

the ordinary production of rationality within organizations.

The framework depicts rational decision-making as a process of theory performation

because it specifies relationships between theory and praxis. In Figure 1, moving from praxis

to outside processes shows how processes nurtured by theory underpin daily decision-

making. The framework highlights how theory sustains actors' daily praxis of rational

decision-making. This perspective can be reversed for an outside-in move process on Figure

1. Such an approach tracks the journey of a normative framework embedded in economics –

rational choice theory – from academia to actors' daily praxis, clarifying the complex process of rational choice theory performance.

Implications and Discussion

We claimed that the logic of organizational research on decision-making limits our ability to account for rationality's persistence in organizational life. This situation comes from three features of organizational studies' positioning toward rationality that prevent theorizing how and why organizations produce rational decisions: the belief that rationality is 'taken-for-granted'; a false dichotomy between descriptive and normative research; and neglect of the role of decision-making tools as material 'rationality carriers'. The following sections explain how our framework overcomes these limitations and opens new research perspectives.

An alternative Approach to Rationality

Our framework specifies three processes that assure the persistence of rationality in organizations. Rationality conventionalization, as well as the presence of 'rationality practitioners' and 'rationality carriers', motivate actors and facilitate attempts to make rational decisions. These conditions also facilitate the production and reproduction of rationality across time, so it is always possible for rationality to return.

A major contribution of this paper is to propose an alternative perspective on rationality that considers rational decisions as actors' purposeful efforts. This perspective avoids the pitfalls of sociological naivety, which sometimes takes rationality for granted (Hendry 2000). It also avoids a radical deconstruction of analytical categories that are often present in critical perspectives (Brunsson 1982, 1985; Laroche 1995). Furthermore, it clarifies some dimensions on rationality neglected in sociological (Beck 1992; Giddens 1990) and organizational (Czarniawska 2003; Meyer and Rowan 1977) accounts of modernity. These

accounts often describe rationality as an outside force shaping organizations and producing isomorphism (DiMaggio and Powell 1983; Weber 1978). They also suggest organizational compliance is likely to be symbolic rather than substantive (Meyer and Rowan 1977; Oliver 1991), as actors behave rationally because they have to conform to expectations of an environment dominated by the 'myth of rationality'. These studies however, neglect Meyer and Rowan (1977)'s insight that "being rational" is an "effortful accomplishment" (Lounsbury 2008, pp. 351-353). As a result, they do not explain how actors actually behave rationally. The performative praxis framework addresses this limitation by explaining how rationality is manufactured.

In addition, the framework moves beyond rational decision-making motivations to specifying resources (tools, theory, and practices) and mechanisms which sustain the manufacture of rational decisions. It suggests a way to investigate rationality in organizational decision-making which complements research on the roles played by information and formal analyses (Feldman and March 1981; Langley 1989). The framework explains how organizational actors produce rationality by linking micro processes of intra-organizational decision-making to macro-social institutional forces, and by adding rational choice theory as an institutional component of rational decision-making praxis. It contributes directly to research on "institutional work" (Lawrence and Suddaby 2006; Lawrence, Suddaby, and Leca 2009; Lounsbury 2008) by specifying the work of *rationality maintenance* in organizations.

Lastly, future research can rely on the performative praxis framework to investigate how decision-making theories interact and influence organizational practices, praxis and practitioners. Beyond rational choice theory, the performative praxis framework can support empirical investigations of how alternative forms of rationality (e.g., political, institutional) compete within organizations to frame and shape decision-making through "performativity

struggles" (Callon 2007). Such an investigation could explain the link between a financial success associated with performing a theory of choice and its subsequent adoption and diffusion across organizations (MacKenzie 2006).

Managing the Normative-Descriptive Tension

One of the fundamental critiques of rational decision-making is that rationality, even if desirable, remains a normative ideal which is impossible to achieve in practice. Our analysis suggests this is narrow view of organizational reality that neglects its materiality, as well as the role of theory. The performative praxis framework suggests that the normative theory of rational choice is a central ingredient in making rational decisions. It maps the processes whereby rational choice theory may influence actual behavior. It highlights how formal and normative knowledge on decision-making sustains rational decision-making practices. It reduces the opposition between normative and descriptive research because it accounts for the role of rationality prescriptors (e.g., consultants prescribing rational decision-making methods). In addition, by incorporating prescriptions, our framework explains how academics influence organizations' decision-making praxis. Thus, it echoes previous calls for academics teaching theories of decision-making to have a reflexive perspective (Czarniawska 2003; Whittington et al. 2003).

The framework provides a platform for collaborative research between two academic fields, 'engineers of rationality' and organizational theorists who focus on deviance from rationality. Conceptualizing rational decision-making as a performative praxis suggests reconsidering engineers' attempts to produce rational decisions in organizations. Studying how engineers of rationality, such as decision analysts, build socio-technical infrastructures supporting rational decision-making can reveal the role of craft, bricolage, and creativity in the production of rationality. The framework can support macro-analyses of processes which disperse rational decision-making practices throughout organizations.

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The Operations Research & Management Science field offers itself as an appropriately extreme case for investigating the processes whereby rational choice theory is performed. Historical and retrospective inquiry can reveal how leaders of that field acted as "institutional entrepreneurs" of rationality in decision-making (Battilana, Leca, and Boxenbaum 2009; DiMaggio and Powell 1983; Dorado 2005). More generally, the successes and failures of Operations Research & Management Science could enhance our understanding of whether and how organizational practices have turned rational choice theory into social reality.

Reintroducing Tools as 'Rationality Carriers'

Rational decision-making as performative praxis overcomes a lasting limitation of prior research because it includes objects that mediate between decision-making theory and praxis. The engineering process shows how theory forms the basis of artifacts that actors use to make rational decisions, and what key roles rational decision-making tools play. The model also suggests that these 'rationality carriers' play a part in two other processes. Rational choice theory commodification implies that rational decision-makers sell pre-packaged tools to actors in search of rationality. Rationality carriers can also support and reinforce conventionalization through the diffusion of tools embedding rational choice theory. By reintegrating descriptive accounts of rational decision-making processes, the model corrects prior organizational research biases. Integrating the role of tools reveals that even when decision-making processes involve political struggles and/or symbolic manipulations, rationality may be present, but hidden.
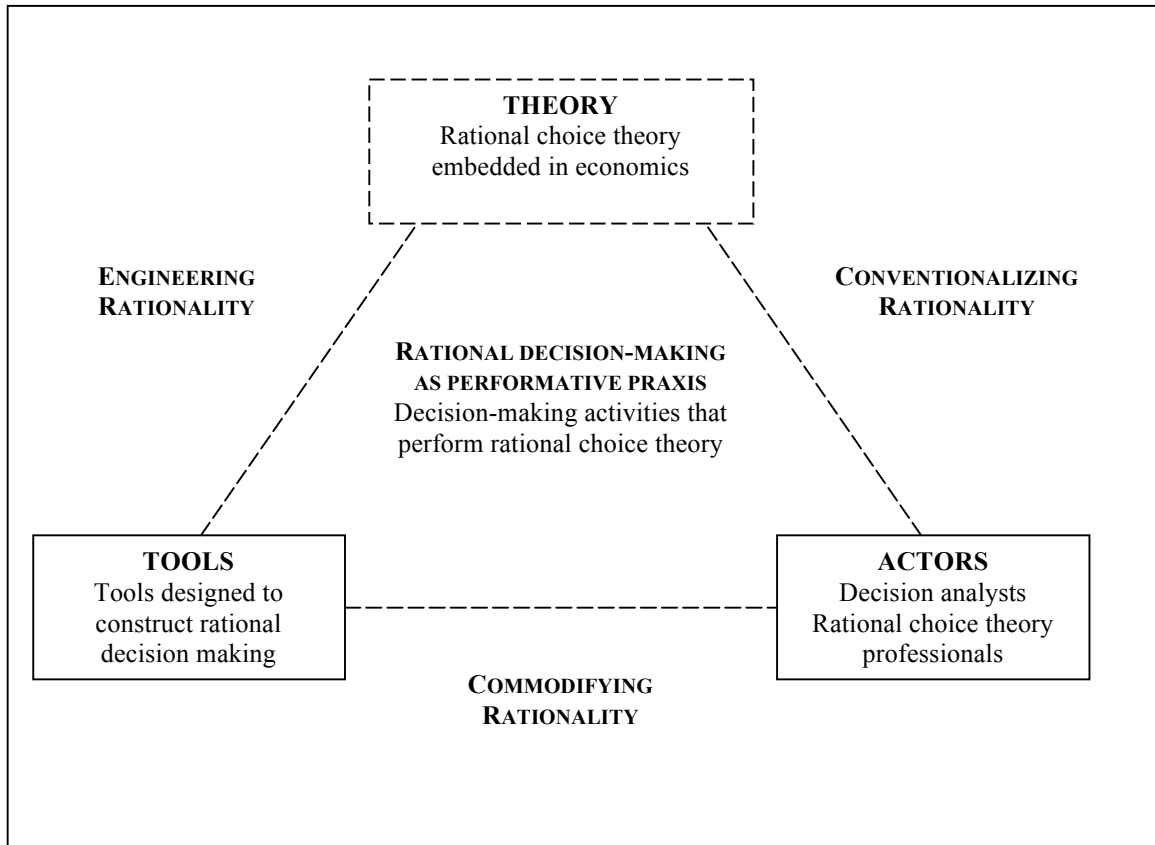
Future studies of rationality engineering can investigate how rational choice theory is 'translated' into tools and material devices used in organizations (Callon 1986). They can enhance our understanding of how engineers of rational choice compensate for actors' lack of cognitive capacities. At the same time, other studies could focus on how artifacts enhance rationality within organizations by developing shared interpretations of rational decision-

making. Such an approach could rely on anthropological studies of "distributed cognition" (Hutchins 1995a/b) and form the basis for an analysis of 'distributed rationality'. It could investigate the interplay of humans and objects in the production and maintenance of rationality through the concept of sociomaterialty (Orlikowski and Scott 2008).

Conclusion

In this paper, our goal was to overcome the paradoxical tension between academics' recurrent critique of rationality realism and rationality that persists in everyday organizational life. We critically reviewed organizational research on decision-making to show that its positioning towards rationality inhibits theorizing how and why organizations produce rational decisions. To account for rationality's *éternel retour* we conceptualized rational decision-making as performative praxis; that is, a set of decision-making activities that turns rational choice theory into social reality. We proposed a framework that describes how rational decision-making performative praxis work. This framework articulates three mechanisms that make rationality happen within organizations: rationality conventionalization, rationality engineering, and rationality commodification. These mechanisms highlight the links between rational choice theory and the daily practice of rational decision-making in organizations. This framework shows how discrepancies between rational choice theory and organizational life can lead to in-depth investigations of how academics, managers and consultants co-produce rational decisions. It offers new research perspectives on rational choice theory influence on organizational decision-making, and can explain the ordinary production of rationality in organizations.

Figure 1. Rational Decision Making as Performative Praxis

Acknowledgements

References

Ahrens, Th., and Ch. Chapman. 2007. Management accounting as practice. *Accounting, Organizations & Society* 32 (1/2):5-31.

Allison, G.T. 1971. *The Essence of Decision: Explaining the Cuban Missile Crisis.* Harper Collins.

ASPEN. 2001. 2001 Student Attitudes Survey: ASPEN Institute.

Augier, M. and J.G. March. 2007. The pursuit of relevance in management education. *California Management Review* 49 (3):129-146.

Barnes, B. 1983. Social life as bootstrapped induction. *Sociology* 17 (4):524-545.

Battilana, J., B. Leca, and E. Boxenbaum. 2009. How actors change institutions: Towards a theory of institutional entrepreneurship. *Academy of Management Annals* 2:65-107.

Bazerman, M. 2005. *Judgment in Managerial Decision-Making.* 6th ed: John Wiley & Sons.

Beck, U. 1992. *Risk Society.* London: Sage. Original edition, 1986.

Beunza, D., and D. Stark. 2004. Tools of the trade: the socio-technology of Arbitrage in a Wall Street trading room. *Industrial and Corporate Change* 13 (2):369-400.

Boland, R.J, R.V. Tenkasi, and D. Te'eni. 1994. Designing Information Technology to Support Distributed Cognition. *Organization Science* 5 (3):456-475.

Boltanski, L., and L. Thevenot. 2006. *On Justification. Economies of Worth.* Translated by C. Porter. Princeton University Press. *Original edition*, De la Justification. Les economies de la grandeur. 1st edition in French 1991, Paris, Gallimard.

Bourgeois, L.J., and K.M Eisenhardt. 1988. Strategic decision process ini high velocity environments: Four cases in the microcomputer industry. *Management Science* 34 (7):816-835.

Brunsson, N. 1989. *The Organization of Hypocrisy: Talk, Decisions and Actions in Organizations*. Chichester: John Wiley and Sons.

———. 1985. *The Irrational Organization.* Chichester: John Wiley.

Butler, J. 1997. *Excitable Speech. A Politics of the Performative.* Routledge.

Callon, M. 2009. Civilizing markets: Carbon trading between in vitro and in vivo experiments. *Accounting, Organ. and Soc*. 34 (3-4): 535-548.

———. 2007. What does it mean to say that economics is performative. In *Do Economists Make Markets? On the Performativity of Economics*, edited by D. MacKenzie, F. Muniesa and L. Siu. Princeton University Press.

———. 1998. *The Laws of the Markets.* Oxford: Blackwell Publishers.

———. 1986. Some elements of a sociology of translation: domestication of scallops and the fishermen of St Brieuc Bay. In *Power, Action and Belief: A New Sociology of Knowledge?* edited by J. Law. Boston: Routledge.

Chia, R. 1994. The concept of decision: a deconstructive analysis. *Journal of Management Studies* 31 (6):781-806.

Clark, Th., and G. Salaman. 1998a. Creating the 'right' impression: Towards a dramaturgy of management consultancy. *Service Industries Journal* 18 (1):18-38.

———. 1998b. Telling tales: management gurus' narratives and the construction of managerial identity. *Journal of Management Studies* 35 (2):137-161.

Clemen, R.T., and T. Reilly. 2001. *Making Hard Decisions.* Duxbury Thomson Learning.

Cochoy, F. 2008. Calculation, qualculation, calqulation: shopping cart arithmetic, equipped cognition and the clustered consumer. *Marketing Theory* 8:15-44.

Cohen, M.D., J.G. March, and J. Olsen. 1972. A garbage can model of organizational choice. *Administrative Science Quarterly* 17 (1):1-25.

Crozier, M., and E. Friedberg. 1980. *Actors and Systems: The Politics of Collective Action.* Chicago: University of Chicago Press.

Czarniawska, B. 2001. Is it possible to be a constructionist consultant? *Management Learning* 32 (2):253-272.

———. 2003. Forbidden knowledge. Organization theory in times of transition. *Management Learning* 34 (3):353-365.

Dean, J.W., and M.P. Sharfman. 1993a. The relationship between procedural rationality and political behavior in strategic decision making. *Decision Sciences* 24 (6):1069-1083.

———. 1993b. Procedural rationality in the strategic decision-making process. *Journal of Management Studies* 30 (4):587-610.

———. 1996. Does decision process matter? A study of strategic decision-making effectiveness. *Academy of Management Journal* 39 (2):368-396.

DiMaggio, P.J., and W.W. Powell. 1983. The iron case revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review* 48 (2):147-160.

Dorado, S. 2005. Institutional entrepreneurship, partaking and convening. *Organization Studies* 26 (4):385-414.

Eisenhardt, K.M. 1989. Making fast strategic decisions in high-velocity environments. *Academy of Management Journal* 32 (3):543-576.

Eisenhardt, K.M., and M.J. Zbaracki. 1992. Strategic decision making. *Strategic Management Journal* 13 (8):17-37.

Elbanna, S., and J. Child. 2007. Influences on strategic decision effectiveness: Development and test of an integrative model. *Strategic Management Journal* 28 (4):431-453.

Elster, J. 1986. *Rational Choice*. Oxford: Blackwell.

Feldman, M. S. 2000. Organizational routines as a source of continuous change. *Organization Science*, 11(6): 611-629.

Feldman, M.S., and J.G. March. 1981. Information in organizations as signal and symbol. *Administrative Science Quarterly* 26 (2):171-186.

Feldman, M.S., and B.T. Pentland. 2003. Reconceptualizing organizational routines as a source of flexibility and change. *Administrative Science Quarterly* 48 (1):94-118.

Felin, T., and N. Foss. 2009a. Performativity of theory, arbitrary conventions, and possible worlds: A reality check. *Organization Science*, 20(3): 676-678.

———. 2009b. Social reality, the boundaries of self-fulfilling prophecy, and economics. *Organization Science*, 20(3): 654-668.

Ferraro, F., J. Pfeffer, and R.I Sutton. 2005. Economic language and assumptions: How theories can become self-fulfilling. *Academy of Management Review* 30 (1):8-24.

Ferraro, F., J. Pfeffer, and R.I. Sutton. 2009. How and why theories matter: A comment on Felin and Foss (2009). *Organization Science*, 20(3): 669-675.

Fredrickson, J.W. 1984. The comprehensiveness of strategic decision processes: Extension, observations, future directions. *Academy of Management Journal* 27 (3):445-466.

Gabriel, Y. 2002. Essai: On paragrammatic uses of organizational theory: A provocation. *Organization Studies*. 23 (1):133-151.

Garcia-Parpet, M.-F. 2007. The social construction of a perfect market: The strawberry auction at Fontaines-en-Sologne. In *Do Economists Make Markets?: On the Performativity of Economics*, edited by D. MacKenzie, F. Muniesa and L. Siu. Princeton University Press.

Garfinkel, H. 1967. *Studies in Ethnomethodology*. Prentice Hall.

Ghoshal, S. 2005. Bad management theories are destroying good management practices. *Academy of Management Learning and Education* 4 (1):75-91.

Giddens, A. 1990. *The Consequences of Modernity*. Stanford: Stanford University Press.

Gordon, R.A., and J.E. Howell. 1959. *Higher Education in Business*. New York: Columbia Universite Press.

Grant, R. 2008. *Contemporary Strategy Analysis*. 6th ed: Blackwell Publishing.

Hendry, J. 2000. Strategic decision making, discourse, and strategy as social practice. *Journal of Management Studies* 37 (7):955-977.

Hodgkinson, G.P, N.J. Bown, A.J. Maule, K.W. Glaister, and A.D. Pearman. 1999. Breaking the frame: An analysis of strategic cognition and decision making under uncertainty. *Strategic Management Journal* 20 (10):977-985.

Hodgkinson, G.P., R. Whittington, G. Johnson, and M. Schwarz. 2006. The role of strategy workshops in strategy development processes: Formality, communication, coordination and inclusion. *Long Range Planning* 35:479-496.

Howard, R.A. 1988. Decision Analysis: practice and promise. *Management Science* 34 (6):679-695.

———. 1966. Decision Analysis: applied decision theory. *Proceedings of the Fourth International Conference on Operational Research* 55-71.

Hutchins, Ed. 1995a. How a cockpit remembers its speed. *Cognitive Science* 19 (3):265-288.

———. 1995b. *Cognition in the wild*. Boston, MA: MIT Press.

Janis, I.L. 1972. *Groupthink*. Boston, MA.: Houghton Mifflin.

Jarzabkowski, P. 2003. Strategic practices: An activity theory perspective on continuity and change. *Journal of Management Studies* 40 (1):23-55.

Jarzabkowski, P. J. Balogun, and D. Seidl. 2007. Strategizing: The challenges of a practice perspective. *Human Relations* 60 (1):5-27.

Jensen, M.C., and W.H. Meckling. 1994. The nature of man. *The Journal of Applied Corporate Finance* Summer:4-19.

Jensen, M.C. 1988. *Foundations of Organizational Strategy*. Harvard University Press

Jodelet, D. 1991. *Les représentations sociales*. Paris: Presses Universitaires de France.

Johnson, G., A. Langley, L. Melin, and R. Whittington, Eds. 2007. *Strategy as Practice: Research Directions and Resources*. Cambridge, UK.: Cambridge University Press.

Kahneman, D., P. Slovic, and A. Tversky. 1982. *Judgment under Uncertainty: Heuristics and Biases*. Cambridge: Cambridge University Press.

Keeney, R.L. 1982. Decision Analysis: An overview. *Operations Research* 30 (5):803-838.

Keeney, R.L., K.E. See, and D. von Winterfeldt. 2006. Evaluating academic programs: With applications to US graduate decision science programs. *Operations Research* 54 (5):813-828.

Kieser, A., and B. Wellstein. 2008. Do activities of consultants and management scientists affect decision making by managers? In *The Oxford Handbook of Organizational Decision-Making*, edited by G. P. Hodgkinson, Starbuck, W.H. Oxford, UK: Oxford University Press.

Kipping, M. 1997. Consultancies, Institutions and the Diffusion of Taylorism in Britain, Germany and France, 1920s to 1950s. *Business History* 39 (4):67-83.

———. 1999. American management consulting companies in Western Europe, 1920 to 1990: Products, reputation. *Business History Review* 73 (2):190.

Langley, A. 1989. In search of rationality: the purposes behind the use of formal analysis in organizations. *Administrative Science Quarterly* 34 (4):598-631.

Langley, A., H. Mintzberg, P. Pitcher, E. Posada, and J. Saint-Macary. 1995. Opening up decision-making: the view from the black stool, *Organization Science* 6(3): 260-279.

Laroche, H. 1995. From decision to action in organizations: Decision-making as a social representation. *Organization Science* 6 (1):62-75.

Latour, B. 1992. Where are the missing masses? The sociology of a few mundane artifacts. In *Shaping Technology/Building Society: Studies in Sociotechnical Change*, edited by W.E. Bijker and J. Law. MIT Press.

———. 1994. Une sociologie sans objet ? Remarques sur l'interobjectivité. *Sociologie du Travail* 4:587-608.

———. 1996. Que peuvent apporter l'histoire et la sociologie des sciences aux sciences de la gestion? (The use of science studies to renew a few questions of organization theory). Paper read at XIII° Journées nationales des IAE, at Toulouse.

———. 2005. *Re-Assembling the Social. An Introduction to Actor-Network theory*. Oxford: Oxford University Press.

Lawrence, T.B., and R. Suddaby. 2006. Institutions and institutional work. In *Handbook of Organization Studies*, edited by S. R. Clegg, C. Hardy, T. B. Lawrence and W. R. Nord. Sage publication.

Lawrence, T.B, R. Suddaby, and B Leca, Eds. 2009. *Institutions and Institutional Work.* Cambridge, UK: Cambridge University Press.

Leavitt, H.J. 1975. Beyond the analytic manager. *California Management Review* 17 (3):5-12.

———. 1989. Educating our MBAs. On teaching what we haven't taught. *California Management Review* 31 (3):38-50.

Liang, N., and A. Wang. 2004. Implicite mental models in teaching cases: An empirical study of popular MBA cases in the United States and China. *Academy of Management Learning and Education* 3 (4):397-413.

Lounsbury, M. 2008. Institutional rationality and practice variation: New directions in the institutional analysis of practice. *Accounting, Organizations and Society* 33 (4-5):349-361.

MacKenzie, D. 2006. *An Engine, Not a camera*. MIT Press.

MacKenzie, D., and Y. Millo. 2003. Constructing a market, performing a theory: the historical sociology of a financial derivatives exchange. *American Review of Sociology* 109 (1):107-145.

MacKenzie, D. 2004. The big, bad wolf and the rational market: portfolio insurance, the 1987 crash and the performativity of economics. *Economy & Society* 33 (3):303-334.

March, J.G. 1962. The business firm as a political coalition. *The Journal of Politics* 24 (4):662-678.

———. 1978. Bounded rationality, ambiguity, and the engineering of choice. *Bell Journal of Economics* 9 (2):587-608.

———. 1988. *The Pursuit of Organizational Intelligence*. Oxford, UK. : Blackwell.

———. 1994. *A Primer on Decision-Making. How Decisions Happe*. New York: Free Press.

———. 1997. Understanding how decisions happen in organizations. In *Organizational Decision Making*, edited by Z. Shapira. Cambridge University Press.

———. 2006. Rationality, foolishness, and adaptive intelligence. *Strategic Management Journal* 27 (3):201-214.

March, J.G., and J. Olsen. 1976. *Ambiguity and Choice in Organizations*. Bergen: Universitetsforlaget.

———. 1989. *Rediscovering Institutions*. New York: The Free Press.

March, J.G., and H.A. Simon. 1958. *Organizations*. New York: John Wiley and Sons.

Mas-Colell, A., M.D. Whinston, and J.R. Green. 1995. *Microeconomic Theory*. Oxford University Press.

McKenna, Ch. 1995. The origins of modern management consulting. *Business and Economic History.* 24 (1):51-58.

Meyer, J.W., and B. Rowan. 1977. Institutionalized organizations: formal structure as myth and ceremony. *American Journal of Sociology* 83 (2):340-363.

Miller, S.J., and D. Wilson 2006. Perspectives on organizational decision-making. In *The Sage Handbook of Organization Studies*, edited by S. R. Clegg, C. Hardy, T. B. Lawrence and W. R. Nord. London, UK: Sage.

Mintzberg, H., and J. Waters. 1985. Of strategies, deliberate and emergent. *Strategic Management Journal* 6 (3):257-272.

Mol, A. 2002. *The Body Multiple*. Durham, NC: Duke University Press.

Molloy, S., and C.R. Schwenk. 1995. The effects of information technology on strategic decision-making. *Journal of Management Studies* 32 (3):283-311.

Moscovici, S. 1991. Des représentations collectives aux représentations sociales. In *Les Représentations Sociales*, edited by D. Jodelet. Paris: Presses Universitaires de France.

Muniesa, F., and M. Callon. 2007. Economic experiments and the construction of markets. In *Do Economists Make Markets? On the Performativity of Economics*, edited by D. MacKenzie, F. Muniesa and L. Siu. Princeton University Press.

Nutt, P.C. 1976. Model for decision making in organizations and some contextual variables which stipulate optimal use. *Academy of Management Review* 1 (2):84-98.

Oliver, D. 1991. Strategic responses to institutional processes. *Academy of Management Review* 16 (1):145-179.

Orlikowski, W.J. 2007. Sociomaterial practices: Exploring technology at work. *Organization Studies* 28:1435-1448.

Orlikowski, W.J. 2000. Using technology and constituting structures: A practice lens for studying technology in organizations. *Organization Science* 11 (4):404-428.

Orlikowski, W.J., and S. Scott. 2008. Sociomateriality: Challenging the separation of technology, work and organization. *Academy of Management Annals* 2 (1):433-474.

Papadakis, V.M., S. Lioukas, and D. Chambers. 1998. Strategic decision-making processes: The role of management and context. *Strategic Management Journal* 19 (2):115-147.

Pettigrew, A.M. . 1973. *Politics of Organizational Decision-Making*. London: Tavistock.

Pfeffer, J., and G.R. Salancik. 1974. Organizational decision making as a political process: The case of a university budget. *Administrative Science Quarterly* 19 (2):135-151.

Putnam, H. 2002. *The Collapse of the Fact / Value Dichotomy and Other Essays*. Cambridge, MA: Harvard University Press.

Reckwitz, A. 2002. Toward a theory of social practices: A development in cultural theorizing. *European Journal of Social Theory* 5 (2):243-263.

Reed, M. 1991. Organizations and rationality: The odd couple? *Journal of Management Studies* 28 (5):559.

Rigby, D. 2001. Management tools and techniques: a survey. *California Management Review* 43 (2):139-160.

Royer, I., and A. Langley. 2008. Linking rationality, politics, and routines in organizational decision-making. In *The Oxford Handbook of Organizational Decision-Making*, edited by G.P. Hodgkinson and W.H. Starbuck. Oxford, UK.: Oxford University Press.

Savage, L.J. 1954. *The Foundations of Statistics*. New York: John Wiley.

Schwarz, M. 2004. Knowing in practice: How consultants work with clients to create, share and apply knowledge? Paper read at Academy of Management Best Conference Paper 2004 MC: D2, 6-11 August 2004, at New Orleans.

———. 2006. Practices of consultants in strategy making. In *The Crafts of Strategy*. Toulouse, France.

Schwenk, C.R. 1984. Cognitive simplification processes in strategic decision making. *Strategic Management Journal* 5 (2):111-128.

Scott, W.R. 1995. *Institutions and Organizations*. Thousands Oaks, CA: Sage Publications.

Sfez, L. 1973. *Critique de la Décision*. Paris: Presses de la Fondation des Sciences Politiques.

Simon, H.A. 1955. A behavioral model of rational choice. *Quarterly Journal of Economics* 69 (1):99-118.

———. 1978. Rationality as process and as product of a thought. *American Economic Review* 68 (2):1-16.

Star, S.L., and J.R. Griesemer. 1989. Institutional ecology, 'translations' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. *Social Studies of Science* 19 (3):387-420.

Starbuck, W.H. 1983. Organizations as action generators. *American Sociological Review* 48 (1):91-102.

Stenfors, S., L. Tanner, M.Syrjänen, T. Seppala, and I. Haapalinna. 2007. Executive views concerning decision support tools. *European Journal of Operational Research* 181 (2):929-938.

Sugden, R. 1991. Rational choice: A survey of contributions from economics and philosophy. *The Economic Journal* 101 (407):751-785.

Thiétart, R.-A, and B. Forgues. 1995. Chaos theory and organization. *Organization Science* 6 (1):19-31.

———. 1997. Action, structure and chaos. *Organization Studies* 18 (1):119-144.

Trigo, S., D. Angwin, and D.C. Wilson. 2006. Strategic decision making and management consultants. Paper read at EGOS Conference at Bergen.

von Neumann, J., and O. Morgenstern. 1947. *Theory of Games and Economic Behavior*. 2nd ed: Princeton University Press.

Weber, M. 1978. *Economy and Society*. Berkeley: University of California Press. Original edition, (1921) Wirtschaft und Gesellschaft. Edited by J. Winckelmann.

Weick, K.E. 1995. *Sensemaking in Organizations*. London: Sage Publications.

Whittington, R., P. Jarzabkowski, M. Mayer, M. Mounoud, J. Nahapiet, and L. Rouleau. 2003. Taking strategy seriously: Responsibility and reform for an important social practice. *Journal of Management Inquiry* 12 (4):396-410.

Whittington, R. 2006. Learning more from failure: Practice and process. *Organization Studies* 27 (12):1903-1906.

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[i] For a discussion of the conditions of performativity, see Felin and Foss (2009a/b) and Ferraro, Pfeffer and Sutton (2009).