

FROM EVOLUTIONARY GOVERNANCE TO EVOLUTIONARY STRATEGIES: STANDING ON THE EDGE OF CHAOS

*Miriam Garnier**

Abstract

The perspective of Evolutionary Governance that I have developed since 2012 is part of the emerging evolutionary perspective on the economy. I have proposed a new vision of governance as the function that optimizes the cognitive and behavioral collective intelligence of a firm to make decisions facing risks and uncertainty. The Board of Directors acts to anticipate variations of external conditions and internal routines, select the right orientations (decisions and routines which ensure the sustainability of the firm) and enhance co-evolution.

The term "evolutionary" refers to the process of endogenously developing variations, selection and retention on the one hand, and on the co-evolution phenomenon on the other hand. Once limited to paleoanthropology, it has been extended as an abstract process to conceptualize many domains, among which economics. The original process of variation/selection/retention has become a generic concept of evolution as novelty/emergence/dissemination.

Why is it necessary to introduce evolutionary concepts into governance research? To answer this question, I review in the first part the succession of influences over governance theories, and the pitfalls of the current framing compared to the objectives I assign to governance, as an internal mechanism of organizations to structure itself to face risks and uncertainty. In the second part, I review the breakthroughs of evolutionary concepts in various domains in close links with governance: strategy and political science and public administration. And in the last part, I explore the interesting properties of evolutionary governance and overview the impacts of this theory over strategy and economics.

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1 The need to go beyond economics, law and psychology to frame governance

1.1 *The Invisible and Visible hands of governance: evolution of concepts*

Corporate governance theories relate to institutional analysis and have been influenced by macroeconomics. Corporate Governance theories history dates back to 1932 with Berle and Means¹ proposal reforms to overcome the separation of ownership from control of companies. They complained that ownership had become depersonalized: shareholders were bearing risks whereas managers were steering the companies with large latitude, and eventually their own interest. After the Berle and Means association of two Professors teaching at Columbia University, one in law and the other in economics, there has been an influence fight between lawyers and economists, as Professor

Douglas Branson² reminds us. Governance reforms followed another: federal chartering in the fifties and sixties; social responsibility in the seventies; the agency cost theory (Jensen and Meckling, 1976), opening a wide area of research in contractual science dedicated to incentive alignment disposals. In the early eighties, the Law and Economics Movement was inspired by Henry Manne³ and his market for corporate control theory, according to which market forces regulated corporate and managerial behavior much better than regulation, laws, or lawsuits ever could. Bad governance would result in a falling share price, then a bidder would succeed with a tender offer, or a takeover bid, replacing the bad governance with a good one. This was the invisible hand of governance through market law.

¹ Adolf A. Berle, J.R. & Gardiner C. Means, *The Modern Corporation and Private Property* 1932.

² Douglas M. Branson, *Proposals for Corporate Governance Reform : Six Decades of Ineptitude and Counting*, University of Pittsburg, Legal Studies Research Paper Series, Working Paper N°2013-16, May 2013 Douglas Branson was deeply involved in the ALI's reshaping of corporate governance laws.

³ Henry Manne, *Mergers and the Market for Corporate Control*: (1965) 73 J Pol Econ 110.

As a reaction to that movement, in the late eighties the American Law Institute (ALI) launched the Governance Project - the Good Governance. The ALI legitimately crafted fiduciary duties of the Board of Directors: duty of loyalty, duty of care and the business judgment rule, roles of directors and shareholders in control of transactions and tender offers; and shareholders' remedies. Other legal subjects were: interested directors' transactions, definitions of which opportunities are corporate opportunities, competition with the corporation by officers and directors. The ALI also crafted recommendations dealing with procedural aspects of governance: the structure of the Board (board composition and committees), supervisory role over the compensation of corporate officials.

The American Law Institute established from 1975 to 1994 new standards which spread out the worldwide governance culture, through institutions such as the OECD. This framework has been renewed, but not replaced, by institutional investors' activism in the nineties; regulation of gate-keepers at the beginning of the 21st century and lately by a focus on the independence of directors. These recommendations were either inserted in laws or in mandatory "comply or explain" rules with reference to national codes, according to the countries. They form the visible hand of governance. Variations have appeared with the stewardship theory, "agents watching agents", the theory of gatekeepers. The stewardship theory, launched by Donaldson and Davis⁴, contradicted the agency theory, claiming that the dominant motive for managers is to perform excellently in their job. It was largely based on the decision-making theory of Perez- Lopez⁵, who corrected the affirmation that managers could act in conflict with the interests of shareholders to favor their own interests and found that actors may have "transcendent" rather than mercantile motives. The so-called positive economy reintroduced ethics in the economic and organizational theories. In this wave, corporate social responsibility has got an increasing echo in the business world, without really impacting governance practices, with the exception of the "say on pay" procedures: too large discrepancies between corporate performance and managers' remuneration let shareholders of Citibank vote against the remuneration of the CEO in 2013. This was a significant move inside governance, not from the Board of Directors, but from the other governance organ: the Assembly of shareholders.

Whatever the theoretical streams about governance, the most significant influence of the contractual view of the business world is evidenced by the cost of transactions model within the institutional

economics, which Coase⁶ initiated in 1937 and was extended to governance theory by Williamson. Eventually, institutional economics joined the vision of corporation as a legal subject through the assumption that firms and economic structures themselves look for the most efficient transactions.

1.2 The dominant paradigm

1.2.1 Governance as a mechanism to reduce costs of transactions

Nowadays corporate governance is focused on fiduciary duties of Directors towards shareholders. In 1999, Hansmann & Kraakman published *The End of History of Corporate Law*⁷, as a parallel with the *End of History* and *The Last Man*, published by Francis Fukuyama in 1992. Governance is not contemplated as a function primarily dedicated to the sustainability of a company, but to the satisfaction of investors' interest. Under the pressure of large pension funds, looking for portfolio diversification, a convergence in corporate governance has been targeted to set up best practices standards in order to enhance stability, predictability and allowing further foreign direct investment. The fiduciary aspects of governance reduce uncertainty for stakeholders. But the focus and law and regulation emphasizes stability or small incremental changes, and does not help against radical uncertainty.

1.2.2 Uncertainty cannot be totally overcome through transactions as transactions themselves create uncertainty

Williamson criticized the view of economics as a theory of choice: "Choice has been developed in two parallel constructions: the theory of economic behavior, in which consumers maximize utility, and the theory of the firm as a production function, in which firms maximize profit"⁸. He is right when criticizing post neoclassical economics as a theory of equilibrium prices with agents maximizing their profit in perfectly efficient markets. Nevertheless, the imperfections of neoclassical economics, which are all too simplistic and static models, is not a reason to close the subject of choice, at least for governance. From an economic standpoint, the influence of institutions over economic performance is very important, and institutional economics bring powerful insights to the neoclassical conceptions of self-interested utility maximization equations. While Hayek had identified the issue of adaptation for autonomous economic actors as central, he believed

⁴ Donaldson L. and Davis. J.H., Stewardship theory or Agency Theory: CEO governance and shareholder, *Australian Journal of Management*, 16:49-65 returns.

⁵ Perez-Lopez J.A., *Teoría de la Acción Humana en las Organizaciones*, 1991, Madrid : Rialp.

⁶ Ronald Coase, 1937 *The Nature of the Firm* *Economica*, New Series, Vol. 4, No. 16 (November 1937), pp. 386-405.

⁷ *The End of History for Corporate Law* Discussion Paper N°280, http://www.law.harvard.edu/programs/olin_center.

⁸ Oliver E. Williamson *Theory of the Firm as Governance structure : from Choice to Contract*, University of California, Berkeley.

that market prices contain the whole information, deleting uncertainty. Firms might be the best governance structure, designed to minimize costs of transactions among various possibilities to structure production: markets, hybrids, firms, bureaus, (gathered as hierarchies by Williamson), which are considered as different forms of governance. The ultimate unit of activity is the transaction. Nevertheless, firms not only react to their present institutional environment, as to say to incomplete contracts, according to internal features: threats to firms arise not only due to breakdowns of contracts or cooperation agreements, they also have to anticipate future institutional schemes and environmental characteristics, with or without contractual agreements. And this capacity to organize adaptation and change in organizations is precisely corporate governance.

1.3 The necessity to introduce non-contractual choices under uncertainty

1.3.1 Former critics of the dominant paradigm

The contract theory assigns to governance the role to discipline managers (entailing the agency theory) and bring satisfying value for the shareholders and stakeholders instead of maximizing it. The ethical view developed in the positive economy explains that managers may be "moral", which is obviously the case, and that they had a strong incentive to be moral on the long term⁹. The repeated prisoners' dilemma gives an evidence to this assertion, as non-cooperative behaviors are badly performing on the long run. But this theory has two implicit assumptions: the first is that every unethical behavior would be easily visible, the second is that managers act for the long term. Without control, nobody can pretend that managers are moral by definition. It is sometimes possible, though generally difficult and costly to find evidence of illegal acts of managers. The accusation of "unethical" behavior is sometimes raised by citizens (in case of pollution, for example), but it is difficult to find an accusation of shareholders towards managers, that their behavior was immoral, if their financial performance was good. The control function is thus a necessity. Other critics were based on the necessity to strengthen strategic capacities of the firm: bring access to strategic resources, and enhance competencies. According to Teece, 2007, "the current wave of governance reforms in the United States -with its strong emphasis on accounting controls and systems integrity- may inadvertently lead to much "bigger" strategic performance failures by management". It has been proposed to diversify the origin of Directors and bring to the Board bankers, suppliers, etc...The Board would then become a cognitive instrument to create a learning organization. In our view, it does not answer

the principal mission of governance, which is to guide the firm through uncertainty.

1.3.2 Breakthroughs for choice under uncertainty

How neoclassical economics deal with the question of choice under uncertainty has dramatically been criticized through the integration of bounded rationality¹⁰, information asymmetry¹¹, through quality¹² and time dimension prospect theory¹³, learning organizations, subjective expected utility. Choice under uncertainty research now includes innovations stemming from findings on artificial markets, bounded rationality, bifurcations in a non-ergodic environment, technological as well as organizational innovations, including conventions, and a holistic view of firms. Human and social behavior studies in the context of decision-making under uncertainty and through history have been largely researched.

The conventions theory¹⁴ studies behaviors and decision-making under uncertainty. It is interesting to refer to this theory because it substitutes the notion of coordination and agreements to the notion of contract, which is legally binding, and to the notion of power. Not all actions are legally binding, and in certain cases, such as the interactions between Directors within a Board, a conventional approach may be more appropriate to fit the situation, whether conflictual or cooperative. Directors have expectations towards each other. Thévenot and Boltanski postulate that neither culture nor social rules fully explain the internal order of an organization. When individuals face complex situations whose issue is uncertain, without any probability assigned, they identify marks in the situation, whose aggregate is called "convention", to decide which behavior they adopt. Marks at the collective level influence individual decisions, reciprocally the sum of individual decisions influence the collective level. Marks could be:

1. Discourses: not only official discourses, which tend to present rational actions (for example, missions and values) but mainly justifications of their behaviors by individuals who try to present the rational behind their decisions
2. Behavior of key people (in terms of authority, seniority, complementarity, etc.),
3. Objects, necessary in the situation (for example, a report)
4. Space or time organization: for example, implicit or explicit geographical reach, short-term or long term orientation, etc.

¹⁰ Herbert Simon, Economics, Bounded Rationality and the Cognitive Revolution, Edward Elgar Publishing, 2008, ISBN-10: 1847208967.

¹¹ George A. Akerlof, The Market for "Lemons": Quality Uncertainty and the Market Mechanism, Vol.84, N°3, Aug 1970, PP.488-500.

¹² Ibid.

¹³ Kahnemann, Tversky, Choices, Values and Frames, Cambridge University Press, 2000, ISBN 0-521-62172-0.

¹⁴ Thévenot, Boltanski, De la Justification, Les Économies de la Grandeur, NRF essais Gallimard ISBN-10- 2070722546.

⁹ David Pastoriza, Miguel Arino, When Agents become Stewards: Introducing Learning in the Stewardship Theory.

Conventions differ through their principles. Each organization has a set of principles. Change creates new conventions, which stir suspicion, deconstructs the current convention, questioning frameworks of reference. Reactions may be to clarify the situation with a new interpretation, to criticize the old or the new principle, or a tentative of sustainable compromise.

For example, under the leadership of a new Chairman and CEO, a Mediterranean bank has shifted its values from a traditional family/hierarchy oriented reference to the opinion key value, where visibility, fashion, celebrity is the most important. The trade-off rules will be oriented so as to satisfy this principle: for example, the opinion of a person working for a large worldwide company will be more important than the opinion of a stand-alone expert, even if the expert is right, and the other person wrong. To analyze the governance of a company, this is an interesting tool. But this does not help to implement a governance that will drive the company to best adapt to the environment and win a competitive advantage.

Unfortunately, although these theories are really helpful to understand social interactions within the Board, they are not sufficient to palliate the theory of transactions with new decisional heuristics to enhance governance capabilities of organizations.

1.3.3 From bounded rationality to meta-preferences

Since Simon and March weakened the strong assumption of full rationality of decision-makers in a "bounded rationality", behavioral economics and social sciences on preferences ordering have investigated the domain of choice. The necessity for a collective decision-making is emphasized, as the means to deal with complex subjects, risks and uncertainty, to overcome cognitive limitations and irrational behaviors of one single decision-maker. This supports the necessity of a collective decision-making through a Board of Directors. But the procedural aspects of the votes inside the Board has an extreme importance to the decision. It is a fallacy to think that the simple aggregation of individual preferences lead to the final preference. When alternative options are introduced to the Board, each Director may have preferences for such or such outcome, which should drive to the selection of the option with the preferred outcome. Nevertheless this selection may be altered through the selection procedure. Meta-preferences concern the procedural aspects of the collective decision-making¹⁵. The term meta-preference is not used here in the Buchanan's sense of self-projection (how I want to behave), but as the processus handled to reach a decision at the Board. According to

Grofman and Uhlaner, the votes might be influenced by many factors, which I have applied to the case of Boards of Directors.

1. Procedural fairness: the way the Chairperson is handling debates (possibly using a practical veto to undesired oppositions) may influence voters' position (taking part into dominant or contrarian coalition)

2. Consensus: when the specific object of choice has less importance than maintaining the group cohesion or avoiding dissensions, some voters will change their preferences to fit those of the group

3. Decision costs: simplicity and timeliness could be preferred to in-depth debates

4. Universalism: feeling that all options will be equal in the long run

5. Civility norm: members of the board want to feel good and to be able to transact with one another in future occasions

6. Preferences for the final decision-maker's opinion, the Chairman or Chief Executive Officer, or the most influent member of the Board.

7. Restrictions on the set of feasible preference orderings: if there is a high probability of a clear majority winner, alignment to the predictable outcome of the vote

Difficulties to coordinate various perceptions and variability of perceptions according to the function you hold in a company had been evidenced by Simon, 1976.

1.3.4 Pernicious meta-preferences in the necessity of change and adaptation

Grofman and Uhlaner study suggests that the preference for certainty in the form of institutional maintenance drives to stability. Informal procedures are usually structured reflecting meta-preferences. This may occur in addition to cognitive biases, as the "proclivity of people to think in customary fashion" (Grofman- Uhlaner, 1985).

This impact is counterproductive when it is necessary for a Director to act on the basis of preferences, based on a clear presentation of plausible risks. If governance should aim at value creation, then it should optimize risk decisions, as risk appetite is the original source of value creation: according to Kenneth Arrow, risk taking is an option. Profit is the residual outcome of risk-taking and cannot be totally estimated *ex ante*. It is thus necessary to select risks to be taken. The decision will be based on the difference between the perceived risk and its preference for risk. In cognitive psychology, preferred risk is the level of optimal level of subjective risk, whereas in classical economy, risk aversion is the preference for the option whose expected value is linked to the highest probability. From the presentation, the directors will have to build their own perception of risk, resulting from the matching or not of the possibility of a negative occurrence on the one hand, and of the firm's avoidance and anticipation capacities. If the perceived

¹⁵ Bernard Grofman, Carole Uhlaner, Metapreferences and the Reasons for Stability in Social Choice : Thoughts on Broadening and Clarifying the Debate, School of Social Sciences, University of California, Theory and Decision 19 (1985) 31-50 0040-5833/85.10.

risk is superior to the preferred level of risk, then the Director should ask the reduction of risk exposure. Risk selection is not neutral. Risk triggers emotions. The degree of preferred risk is correlated to age and gender (Roberts, 1975, Wilde 1988) and to the level of expertise (Ewert and Hollenhorst, 1989). Meta-preferences may interfere with the own preferences of Directors.

1.3.5 Insufficient adaptive capacities under the cost of transactions theory

Clometrics have revealed the path-dependence for change decisions. Douglass C. North affirms that "Change consists of marginal adjustments to the complex of rules, norms and enforcement that constitute the institutional framework. Technological change and institutional change are the basic keys to societal and economic evolution and both exhibit the characteristics of path-dependence"¹⁶. The cost of transactions theory introduces constraints to the change capacity of firms: it must be incremental. Deconstructing the formal contractual network would be a heavy process, which does not allow much flexibility, when discontinuities or bifurcations in a non-ergodic world appear.

In our view, the choice and contract conceptualizations of the firm should not be opposed. Rather, they complete each other. Nevertheless, this complementarity of concepts still does not answer the requirements to drive firms facing uncertainty. I assume that the key to all these characteristics is to be able to let the firm be adaptive: it is the real source of competitive advantage.

Governance is the regulation function that triggers the transformation of the firm taking into account a perception of what its ecosystem will be in the future. It must ensure the effective integration of a company in its ecosystem, including investors, financing actors, regulators, citizens, with a dynamic factor. Organizing the adaptive capabilities of the firm is a new aspect of governance.

2 Evolutionary theories in strategy and political science

2.1 Governance as emergence

Although Ulrich Witt¹⁷ tried to classify in 2008 the various interpretations of evolutionary economics along ontology and heuristic strategy between monist and dualistic ontological view, I think it is not necessary, when referring to microeconomics. In fact, the basis for emergence, which is another term for the evolutionary process, is the assumption of a

hierarchical realism. Evolution is a "processor", which is used in complexity theory, which in turn explains the characteristics of adaptive, emergent structures. An emergent system can be divided into hierarchical levels. The lower levels consist of the parts, and the upper level consists of the whole system. The two levels are connected either through micro-determinism, when the parts determine the whole system, or through macro-determination, when the upper level exerts downward-causation upon the parts. In the latter case, the system is emergent. Simon (1962) argues that entities which evolve under disruptive conditions are likely to be organized hierarchically¹⁸. To summarize properties of emergent systems, knowledge of the upper level cannot be deduced from the lower level, as the upper level organizes parts (structure, patterns) and their interactions (functions). Evolutionary theory is an emergence theory.

Evolutionary strategies are commonly used in robotics, neural networks, automatism: evolutionary algorithms solve optimization problems. In that sense, it has been proposed to build risk-optimal portfolio using evolutionary strategies¹⁹.

Whereas the Cost of Transactions theory considers the transaction as its basic unit, evolutionary economics consider the operational routines as the primary piece for change of companies. At the upper level, routines are decisions.

2.2 From capabilities to dynamic capabilities

2.2.1 Strategy, internal capacities and adaptation

Strategic research has freed itself from institutional economics much earlier than governance research. In 1959, Penrose²⁰ imagined a growth strategy through resources and competences. The SWOT model of Andrews (1965) encompasses both internal and external analysis and a dynamic dimension with opportunities and threats. Following a long tradition in military strategy, since Sun Tsu, Ansoff²¹ recommended to manage strategic surprise, putting weight on timeliness of adaptation. Argyris²² compelled the need to challenge frameworks of reference, complaining that the change capacity of

¹⁸ Markus Christen, Laura Rebecca Franklin, The Concept of Emergence in Complexity Science: Finding Coherence between Theory and Practice.

¹⁹ Piotr Lipinski, Katarzyna Winczura, Joanna Wojcik, Building Risk-Optimal Portfolio using Evolutionary Strategies, M. Giacobini et al.:EvoWorkshops 2007, LNCS 4448, pp208-217, 2007, Springer-Verlag.

²⁰ Edith Penrose, The Theory of the Growth of the Firm, Wiley, 1959.

²¹ Ansoff, Managing Strategic Surprise by Response to Weak Signals, California Management Review, n°18, P21- 33, 1975.

²² Argyris, Double Loop Learning in Organizations, Harvard Business Review, vol.55, N°5, p115-125, 1977 Knowledge for Action: A Guide to Overcoming Barriers to Organizational Change, Jossey-Bass Publishers, 1993.

¹⁶ Douglass C. North, Institutions, Institutional change and Economic performance, Cambridge University Press, 1990.

¹⁷ Ulrich Witt, What is specific about Evolutionary Economics, Max Planck Institute of Economics, Jena, Germany, JEL classification B15 B25 B41 B52 C73 O10 O30.

firms was inhibited by defensive routines of actors and appealing a double loop learning feed-back. Chandler (The Visible Hand, 1977) complied with the institutional economics, with the substitution of market by the structures organization. Porter's Five Forces model²³ (1979) focused on the strategy as the result of external forces applying to the firm, and during more than ten years, he reigned over strategy. But the question of idiosyncratic and difficult-to-trade assets and competences came back with Rumelt²⁴, who gave the evidence that competencies gap within a sector could be higher than between sectors. At the same time, Barney highlighted "Firm Resources and Sustained Competitive Advantage". Eventually, in 1997, Eisenhardt²⁵ and Teece²⁶ dedicated their analyses to dynamic capabilities of the firms.

2.2.2 Teece and the dynamic capabilities, partially in the spirit of evolutionary theorizing

For Teece, to get a sustainable advantage requires more than the ownership of difficult to replicate assets. Capabilities represent the organization's ordinary ability to perform a set of activity, and are embedded in organizational routines/standard operating procedures. Dynamic capabilities are the ability to determine whether the organization is performing the right activities, and then effectuate necessary change and modify the resource base to align with requirements of and opportunities in the business environment. They may be embedded in routines, methodologies or in a few individuals/leaders. Teece describes three "dynamic capabilities" in the process of change:

- Sensing: identification and assessment of an opportunity through analytical systems, whether internal R&D, new technologies selection, suppliers or complementary innovators, even in exogenous sciences and technologies.
- Seizing: mobilization of resources through enterprise structure, procedures, designs, and incentives to address this opportunity and capture value. This encompasses delineating the customer solution and the business model, selecting decision-making protocols, enterprise boundaries to manage complements and "control" platform, and building loyalty and commitment.
- Managing threats/Transforming: through continued renewal, which is inherently difficult to

routinize, but relies upon governance, knowledge management, co-specialization, decentralization and "near decomposability" (Simon, 2002), which is the balance between autonomy and coordination.

Teece acknowledges that Dynamic Capabilities relate to high level activities: "Understanding how to enhance performance of the enterprise through sensing future needs, making quality, timely and unbiased investment decisions inside a well-designed business model, executing well on those decisions, effectuating productive combinations, promoting learning, reengineering systems that no longer work well, and implementing good governance remains enigmatic". In fact, as generally is the case in strategy literature, concepts of governance, management at executive level or leadership are not clearly delineated. For Teece, "top management leadership skills are required to sustain dynamic capabilities. An important managerial function is achieving semi-continuous asset orchestration and corporate renewal, including the redesign of routines". When he says "an important class of dynamic capabilities emerges around a manager's ability to override certain dysfunctional features of established decision rules and resource allocation processes", "the new and the radical will almost always appear threatening to some constituents", I think that it is typically the mission of evolutionary governance to fight the anti-innovation bias, even if it has an anti-cannibalization basis. Defining the risk appetite, including pooling of several options, to support investment choices, is a duty of the Board of Directors. Teece deplores that, in regimes of rapid technological innovation, investment choices skills are not ubiquitously represented among investors. I think that this is a duty of the Board to match investors understanding with their interest. Teece suggests to build "a small number of scenarios that can facilitate cognition, and then action, once uncertainty is resolved": this is what I help Boards to do and it is a very powerful instrument to explore the fields of uncertainty to make strategic allocation decisions. This is necessary to organize the right information process along the hierarchy, between the lower level and the governance level, to avoid information decay. Through the Teece framework, it appears that evolutionary strategies cannot be delivered without an evolutionary governance.

2.2.3 Eisenhardt: linking complexity theory and Time-Paced Evolution

Eisenhardt stands at the extreme opposite to David North, and institutionalists. David North insisted that "such discontinuous change has some features in common with discontinuous evolutionary changes", but "institutional change is overwhelmingly incremental". Eisenhardt, on the contrary, states that the punctuated equilibrium model of evolutionary theories, that is the alternance of long quasi-stability periods (with small incremental changes) with rapid

²³ Michael Porter, How Competitive Forces Shape Strategy, Harvard Business Review, vol 57, n°2, p137-145; 1979.

²⁴ Richard P. Rumelt, How Much does Industry Matter?, Strategic Management Journal, vol3, n°4, p359-425, 1982.

²⁵ Kathleen Eisenhardt, The Art of Continuous Change: Linking Complexity Theory and Time-Paced Evolution in Relentlessly Shifting Organizations, Administrative Science Quarterly, Vol 42, No1 (March 1997) pp1-34.

²⁶ David J. Teece, Explicating Dynamic Capabilities: The nature and Micro-foundations of (sustainable) enterprise performance, Strategic Management Journal, 28: 1319-1350 (2007).

brutal changes, is irrelevant in certain industries, because these industries compete by changing continuously. "Continuously changing organizations are likely to be complex adaptive systems with semi-structures that poise the organization on the edge of order and chaos". These organizations have three key properties: semi-structures that balance between order and disorder; links in time, that direct attention simultaneously to different time frames and sequenced steps (ill-defined priorities). In these structures, Eisenhardt says, the perspective contrasts with transaction costs economics, agency theory, where organizations are assumed to be stable.

2.3 Strategy: the CEO proposes, the board decides

In classical literature, strategy is activated by the CEO/general manager²⁷. As reported by Westphal and Fredrickson, classical research typically assumes that "rather than directing strategic decisions, outside directors are thought to support managers by co-opting financial institutions, helping to avoid hostile takeovers, and perhaps providing expertise (e.g. financial expertise) that aids in the implementation of management's strategy, without determining strategy itself". Behavioral perspectives on boards have been "virtually uniform" in their assumption that board of Directors are not involved in strategy formulation (Finkelstein and Hambrick, 1996). Outside of strategy research, economists have aligned to this view, and present change as a leadership and managerial issue. Westphal and Fredrickson think that "corporate strategy and performance may result from the influence on board preferences on both executive selection and strategic change and that board members may use their personal experience as a reference point of benchmark in formulating and evaluating strategic alternatives". Withdrawing the strategic orientation responsibility to the Board consequently withdraws emergence faculty to the firm, as the higher level is not capable of reorganizing the parts of lower level. According to legal systems, as in France, or more generally in the OECD code, the decision over strategy is the privilege of the Board²⁸. This is why evolutionary strategies have to be embedded in evolutionary governance.

2.4 The evolutionary governance theory

Complementary to our evolutionary corporate governance theory, Van Assche, Beunen and Duineveld have published an Evolutionary

Governance Theory²⁹ for politics and public administration in 2014.

They define governance as the coordination of collectively binding decisions for a community. Governance path has some space for path creation, despite path-dependency. Actor/institution and power/knowledge configurations are presented as the fundamental concepts of shaping the development of governance paths. Implementation of policies is understood as a process and policies are considered temporary constructs coordinating power/knowledge, continuously affected by other configurations of the same type.

3 Why is evolutionary governance a better governance?

3.1 A theoretical model embedded in practice

It seems that institutional economics do not solve the questions of risk-taking and change decision-making in uncertainty. The large crisis at banks and states rescuing banks in Western countries in 2008 and the 5 years following the crisis trigger has led to the general downgrade of their solvency, as revealed by the big rating agencies debt downgrades of banks and states.

The need to build a new theory emerged through our practice with Boards, especially when it became clear that Boards of financial institutions were not equipped with the understanding of the business, among others the off-balance sheet items, nor the economic environment, and had an aversion to foresee any unfavorable change in the environment, at least a sudden crisis, and *a fortiori*, to prepare the company to it. Since then, I have been working on changes to governance function to enhance strategic change capacities of firms, based on evolutionary economics, fuzzy logic, and complexity theories.

A flexible and adaptive organization is an "edge of chaos" institution. The complex adaptive theory studies how order emerges in complex, non-linear systems, such as galaxies, ecologies, markets, social systems and neural networks. Systems on the edge of chaos can be distinguished from rigidly ordered systems, as they migrate to a state of dynamic stability. They also can be distinguished from chaotic systems because they possess a deep underlying coherence that provides structure and continuity. These adaptive systems are self-organizing, as there is a spontaneous emergence of new forms of order, without any external agent that designs, constructs or maintains the system, but with the added capacity over auto-poietic systems to conserve and process high levels of information, the "learning capacity". These systems have enough stability to store information and enough fluidity for rapid and intense communication

²⁷ Who Directs Strategic Change? Director Experience, the Selection of New CEO's, and Change in Corporate Strategy, James D. Westphal and James W. Frerickson, Strategic Management Journal, 22: 1113-1137 (2001).

²⁸ Code de Commerce art L225-35 modified by the law n°2003-706 August 1, 2003 : The Board of Directors determines the orientations of the activities of the company and monitors their implementation.

²⁹ Kristof Van Assche, Raoul Beunen, Martijn Duineveld, Evolutionary Governance Theory, An Introduction, Springer 2014.

to occur. Evolution can be understood as a phenomenon of complex adaptive systems which adjust their parameters that keep the systems on the edge of chaos. They must have sufficient sources of negative feedback. Intolerance to negative feedback can lead to self-destruction. Complex adaptive systems co-evolve with their environments, with rich exchanges of matter, energy and information. Structure in complex systems is emergent, as it arises out of the interactions within the system: parts of the systems use local rules to guide their interactions, these recurring relationships constitute the structure of the system.

To implement evolutionary governance, exchanges from the upper level to lower level can take the form of fuzzy commands. Fuzzy logics are an interesting tool to introduce flexibility based on beliefs, in the operational routines, while keeping order. The variables of the fuzzy function may be subjectively characterized. Where there is uncertainty, it is possible to find the patterns to quantify the credibility of possible outcomes. The outcome (or event) which the Directors believe, even a minima, is the focal element of the fuzzy function. The plausibility degree and the belief degree straddle the uncertain probability of the badly known event. It is possible to coordinate several goals. The command is simple and adaptable. It resists to perturbations. The synthesis of several experts is easily done. But the result is not fuzzy. For example, for an insurance company, strategic risk management may be handled as a fuzzy command. The command levers may be: asset allocation routines, tariffs elaboration, etc. Variables are: turbulences on the financial markets, climate turbulences.

To illustrate governance with biological analogy, I would represent the organization as a cell. The Board is the membrane, it allows ionic exchanges with its environment. The intracellular components utilize and produce a certain quantity of potassium or sodium. There are signals perceived by the membrane to change proportions: the Board re-orientates activity of the organization to fit its environment. It means that the hierarchical order should not be conceived as a vertical one, but as a protective envelop to the organization, analyzing outside phenomena and quickly sending stimuli to the internal components, to reconfigure in a new internal order.

Complexity theory transposed to governance delivers new rules:

1. Ask Feed-back to check the fitness of the organization to the landscape, including negative feedback (often hidden by executives);
2. Even if the Board stands as a hierarchy above all parts of the company, it should quickly decide to react once feedback is obtained;
3. Use symbolic feedback loops to build "learning organizations" and stimulate innovations;
4. Allow some degree of liberty ("stratified autonomy") to lower levels to interact with their

specific rules. Commands must be expressed in a fuzzy mode;

5. Accept complexity, as complexity can emerge from simple rules;

6. Understand key parameters of lower level routines and the dynamics they create;

7. Be prepared for the unpredictable through scenarios construction and ready to react very quickly, even the future is still uncertain, and send fuzzy commands;

8. Examine how to co-evolve with other actors of the environment;

9. Check whether the organization is able to self-reorganize before new regulations or competitors impose it;

10. Balance stability and fluidity.

3.2 Measuring the performance of governance

Although the disciplinary role of the Board can be objectively proven, there are difficulties to statistically test the various theories on independence and composition, the fact that they have a direct link with the performance of the Board or of the company³⁰. Boards are often composed by a mix of executives and directors. There is no communication on internal debates.

3.2.1 Which Key Performance Indicator's for Boards?

3.2.1.1 Number of resolutions and breakdown

When I analyze the governance process at the largest public bank of a Mediterranean country, which is complying with the legal framework, inspired by the ALI principles, I find the following results:

- Governance process represents 21% of resolutions. They consist in Shareholders meetings organizations, Committee creations, nominations at the executive level, delegations of powers, remuneration of Directors.

- The supervision activity is the most important, it represents 49% of resolutions. It covers financial statements control, chartered auditors nomination, approval of various committees' reports.

- Strategy represents 26% of resolutions. They deal with capital increase, share buy-backs programs, real estate transactions, annual budget approval. No discussion about risk scenarios, innovation, business model, structures (decentralization, regional coverage, international diversification).

- Sociology represents 4% of resolutions. In fact, they concern the nomination of the General Counsel and special counsellors for the CEO. No resolution about dynamic capabilities of the organization, such as

³⁰ Sanjai Bhagat, Bernard Black, 1999 http://papers.ssrn.com/papers;taf?abstract_id=11417.

loyalty, commitment, competencies (knowledge management), ethics, etc...

- Information systems and processes (operational routines) never stand on the agenda of the Board.
- Symbols: never discussed.

The systematic publication of the activity of the Board, even kept with this low level of disclosure would dramatically enhance the quality of governance, as it would oblige Boards to dig into matters which are often missed in current state.

3.2.1.2 KPI's chosen by the Board to govern the organization

Boards should have their own KPI's to monitor the implementation of the evolutionary strategy, different from the KPI of lower level. A majority of Boards are sticking to three or five years plans, and are extremely reluctant to change plans, even when signals appear that should trigger changes to strategy. A French insurance company had built a five-year "Strategic Operational Plan" with very ambitious expansion plans to stand among the ten largest European insurers. It has then acquired a lot of insurance companies to reach this goal, but accumulated strong goodwills, hence destroying capital reserves. With the crisis, its situation was jeopardized, but no one dared to rock the boat, until the regulator requested the replacement of the Chairman.

3.2.1.3 Scenarios construction

As Teece suggests, the construction of scenarios is extremely helpful in building knowledge of the industry for Directors, in enriching the dialogue between executives and Directors and on triggering imagination in the firm. In an insurance company, the Directors -even executive Directors- were unable to build prospective scenarios. Executives are confusing risks and stress tests with uncertainty and impact calculation of prospective scenarios. I build a set of 14 prospective (10 years) scenarios, asking the Directors to weigh their preferences. They decline to do this, so I chose 7 scenarios. I advised the insurance company to set aside capital reserves to protect the company. Among these 7 scenarios, at least three materialized in less than a year, leading the company to insolvency, without these reserves.

3.2.1.4 Incentives for innovation

The resistance to change and the difficulty to let managers admit that their vision of the world, once accurate, may become obsolete is extremely strong. The CEO of an insurance company had been promoted because his investment policy as Chief Investment Officer increased dramatically the wealth of the company. He had put in place an equity buy and hold strategy, which was fruitful in the times of continuous growth of markets. When he became CEO,

he followed the same policy which made his success. Unfortunately, he was not able to become contrarian before the crash, sell shares and buy high quality bonds. When the share prices dropped down, all capital reserves had disappeared, the wealth of the company was divided by two.

3.2.2 Directors' incentives

Much has been debated about the necessary control over managers' remuneration, the "say on pay", as a consequence of the principal-agent theory. But almost nothing about the incentive of Directors to perform, except their reputation risk, in the case their collusion with the managers would be revealed (Fama³¹), and the limitation of the number of their assignments.

I posit that there should be other incentives for Directors, both intangible and tangible.

- Getting the opportunity to share collective intelligence sessions with the appropriate frequency and freedom to speak. According to a McKinsey survey³² released in April 2014, efficient Directors should -according to their own appreciation- spend 45 days per assignment to be acting on a Board. Obviously, getting insights on the industry, on possible scenarios for the main variables impacting the company, on benchmarking the company to its competitors, on imagining new business models, etc. takes time. Therefore having the possibility to spend enough time with other Directors to debate, with the Executives to understand how strategy is executed, on sites, to get a physical experience of operational routines and feel the corporate culture and social climate is essential.

- Standing in the knowledge/information loop
- Getting the right payment for high implication, knowledge and creativity. According to Fama, the cost of governance should be inferior to the reduction of value destruction the Board is ensuring, through its control over investments and spendings. With the aforementioned KPI's, it would be possible to align the global remuneration of the Board with their performance on KPI's.

4 Conclusion: governance cannot lag behind evolutionary dynamics

Evolutionary governance challenges classical theories on governance on the following points:

- Governance cannot be reduced to a fiduciary responsibility to shareholders or social responsibility, its primary function is to ensure sustainability of the firm.

³¹ Eugene Fama, Michael Jensen, Separation of Ownership and Control, Journal of Law and Economics, Vol 26, N°2. Corporations and Private Property, June 1983, pp301-325 (Chicago Journals).

³² McKinsey, High Performing Boards : What's on their agenda ?, April 2014.

- Sustainability requests the intelligence of co-evolution with the ecosystem, including those whom the firm is liable to (shareholders, creditors).

- Building sustainability and competitive advantage request the capacity to act and take risks within uncertainty.

- The firm must be emergent, to be able to change not as a reaction but as an anticipation, which leads to a competitive advantage.

- This capacity request the enhancement of adaptive capabilities of the firm.

- Strategy is embedded in governance.

- The Board should be evaluated on its evolutionary capacities and incentivized on this basis.

Evolutionary strategies have moved first to renew organizational theories. Now it is time for evolutionary governance to

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