Economics and Rationality of organizations: an approach to the work of Herbert A. Simon

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Abstracts

One of the main achievements of Herbert A. Simon in organizational theory is analytically evaluating the psychology of individual and collective behavior thus opening the ground for further research D. Kahneman, and T. Schelling. This article provides an assessment of the contributions of Simon's theory of organizations with special emphasis on the criterion of *bounded rationality*. It is interpreted Simon's criticism of the orthodox version of organizational bureaucracy and extends his analysis to the new institutional economics.

Keywords

Economic theory, Organizations, Herbert Simon, bounded rationality, Kahneman, Schelling and Decision Theory.

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Introduction

The attractiveness of the work of Herbert A. Simon (1916 - 2001) can be compared in the context of economic theory to the remarkable influence of Thomas S. Kuhn in the historiography of the natural sciences. While Kuhn concentrated its efforts on identifying diachronic aspects of rationality in the development of physical theories (Kuhn 1972), Simon is recognized by a broad cross-disciplinary course that includes economic rationality, organizational theory, public administration, philosophy of evolution programming models and artificial intelligence (Simon 1960, 1962, 1967, 1976, 1979, 1987, 1991, 2000, 2003, 2004)[1].

Furthermore, Simon and Kuhn are inheritors of one of the most critical stages of scientific knowledge and the nature of human understanding. But while Thomas S. Kuhn interprets a specific field of natural sciences, Herbert A. Simon holds a diversified multidisciplinary creativity (Dasgupta 2003). Kuhn shared the developments of the epistemology of science as a historian of classical and contemporary physics. On the contrary, Simon conceived economic theory as an administrator, engineer, architect or student of biology (Leahey, 2003). The discipline of economics is to Herbert A. Simon a way of understanding the fundamental aspects of human knowledge and behavior (Schwartz 2002; March - Augier 2004).

Herbert A. Simon is one of the creators of artificial intelligence programs with extensions to the theory of rational decisions and management behavior of firms (Simon 1973, 1980, Chen 2005). Such as, his accomplishments heuristic game theory and collective rationality are being integrated into models used for administration and finance, theory of public expenditure programming and argumentative (Shu-Heng Chen, 2005, Esther-Mirjam Sent 2004, Augier-March 2004).

When the debate on institutions and economic theory is crucial, and both firms and organizations question their place in a society with huge inequalities in income and quality of life proper to go with the economic debate with questions from the perspective of Herbert A. Simon, What kind of rationality that inspires the distribution of public expenditure? How to improve the working environment of the organization, What influences does the rationality of personal behavior in the collective spirit and identity of the company? How could the utility functions with social equity criteria?,

[1] Herbert A. Simon received a PhD in Political Science from the University of Chicago. He was Professor of Management and Head of Industrial Department in the Graduate School of Industrial Administration of Carnegie Institute of Technology. He received the Nobel Prize in Economics 1978.

What to do when the media fail organizational? How to link the efficiency and performance programs of better quality of life of workers in companies?

With the evolution of theories about organizations and the fundamental changes in information technology (Egidi - Marengo 2001), the need to complement these changes from a broader concept of collective rationality, with the effects and impact of programming models in enterprises and the creation of digital communication systems, economic theory is found again midway between abstract mathematical modeling and common sense (Simon 1978). Thus, for this kind of complexity that accompanies the main transformations of contemporary society to propose some ideas of Herbert A. Simon may be theoretically edifying.

This article presents some reflections from Herbert Simon's work with the following aims:

1. Identify certain features of the critique of Herbert A. Simon the conventional approach.
2. Exposing the epistemological implications of the theory of bounded rationality of Herbert Simon.
3. Suggest some notes from the reading of Herbert A. Simon for institutional economics.

In fact, the thesis that runs throughout the analysis is simple: the theory of Herbert A. Simon is a powerful model for understanding organizational economics and institutional theory, and its rediscovery is needed to understand the heuristics of the contemporary social sciences (Earl - Elgar 2001)[2].

Simon's critique of the conventional approach

During the '60s, Herbert A. Simon and James March, write an original work entitled Organizations (1987, 1994) leading to a paradigm shift on the approach to the bureaucratic organization proposed by Max Weber. The authors summarize this book a variety of field experiences and research results confronted empirically that brings out certain anomalies in the functioning of the bureaucratic scheme of the organization. In its findings, Simon and March show how some inconsistencies in the Weberian model of bureaucracy may be one reason both for its durability crisis (March - Simon 2003).

Not only but also the pyramid base of corporate governance scolds Weberian with structural changes from horizontal achievement of agreements between employers and employees. A conventional theory of the organization also opposed changes from new information and communication systems. Organizations must be interpreted

[2] The author develops the epistemological scope of the theory of Herbert Simon (Earl - Elgar 2001).

dynamically from the theory of natural evolution, suggests Herbert A. Simon, when economists preferred model of mechanistic explanation (Simon - Kulkarni 1988).

Remember that Herbert A. Simon is a precursor of cognitive movement in organizations (Langlois 2003). An organization evolves from a collection of options in response to situations, issues and feelings looking for solutions to problematic situations of conflict and where necessary make decisions or looking for topics that can become answers, in organizations, those makers decisions are always in a job search[3]. Consequently, Simon sees the dynamics of the organization in terms of constant evolution between decisions that are the result of a process of reasoning of the agents involved. The philosophy of the organizations account for less than the identity of a group of bureaucrats to the achievement of daily goals agreed between employers and employees:

> Often discussions of centralization and administrative decentralization will end up in the question "Who is the decision maker?" This question is meaningless, because a complex decision is like a great river that draws its many tributaries the many assumptions that compose it. In the same way, there are many people and organizational units that give to every major decision, and the problem of centralization and decentralization is in order this complex system in an effective scheme (Simon 1962, XII)

This conception of business organization gives us a first idea about Simon's criticism of the conventional model. Recall that the bureaucracy in the Weberian organizational structure would function as long as the decisions were the result of ex ante planning. The framework is supported decisions on the criteria of power and delegated authority (Perrow 1991). Herbert A. Simon says flaws in this view, one of the most important, lacks of incentives and the substrate emotional decisions. Again, Simon appeals to biology to show the progress of organizations in terms of adaptations by trial and error struggles (Richard N. Langlois 2003). We never have conclusive answers to hand off the crisis of the organization since in each case is required to develop new skills and make decisions within limited ranges of information[4].

Herbert A. Simon sees the task of administration as a necessary task in the organization when it takes a practical rationality in decision-making (in terms of organizational goals). The criterion of rationality in the conventional version highlighted the results of the processes; the rationality of the conventional model is as a device that draws the ends. Nevertheless, Simon believes that one of the greatest

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[3] According to Simon though people may try to be rational, can rarely meet the requirements of information or provision that imposes rational models.

[4] For Simon adaptation in the organizational context may be at the individual level through learning, initiation of workers, or may be in the population level through differential survival and reproduction of the most successful employees. In one way or another, the consequences of adaptive processes are often difficult to deduce where there are many interacting agents following rules that have nonlinear effects (Simon, 1995)

strengths for the growth of the companies was their ability to expose openly the possibility of making sound decisions that positively affect the interests of managers and subordinates. Discussing and examining the media. As the primary refer to for organizational decisions would not be a board of corporate governance, but a philosophy of collective actions reasonably identified by each worker in a deliberative work environment (Simon 1991).

We must remember that Simon began his work in public administration and research as a consultant. As a result of his act as a catalyst in various universities could integrate their experience various aspects of administration in both the private and public sector (March - Augier 2002). At Carnegie-Mellon University (Pittsburgh) deepened as it relates to the theory of decision-making use of computers to simulate human thought. Subsequently, Simon's work with computer programming models contributed to a tighter integration between information technologies and systems, collective decision-making (Shu-Heng Chen, 2005, pp. 121 -131)[5].

For Herbert A. Simon is synonymous with management decisions, but their main interest was to emphasize the "how." The source is reflective of his theory of practical rationality (Simon 1978, 1982; Simon - Kotorky 1990, 2002). Corporate decisions are important as they can be effective and deliver results. He suggested that the overall process of decision-making there are three main stages:

(a) Finding cases where there is a decision to take; we can associate with an intelligence activity in the military sense.

(b) Inventing, developing and analyzing possible courses of action, which might be called a design activity.

(c) By choosing a particular course of action of all possible options, representing an activity "option / choice" or "optional."

Corporate decisions are not carried out in empty. They are taken due to specific conditions need it: change the marketing systems, improve communication, integrate more employees, lay off workers, increase sales, cut costs, and offer incentives. Herbert A. Simon is innovative in-game theory and rational strategies. In war as in organizational life decisions can decide a last course of events. Likewise, decisions

[5] Herbert A. Simon is the forerunner of present-day Social Science has become a dominant form of modeling based on the paradigm of rational choice. The modeling uses computer simulation that aims to provide an approximate representation of particular empirical applications (Simon 1973, Roger Frantz 2003)

involve strategies that can be targeted often sub optimal. An organization depends on this small and varied decisions made over time (Simon 1979, 1984, 1987)[6].

Design plans, building models, structuring possible plans of action are natural conditions of managerial rationality. It is clear that a broad idea about the faculty policy in the organization. Simon opposes "organization" to "personality." We can not understand or what an executive receives or gives what if we do not understand the organization where you work, because their behavior and the effect it produces in the other are functions of their status within that (Simon 1962, XV). This important, principle has been renovated to look within the organization what Robert Axelrod calls "cultural dissemination"[7]. The psychology of organizations is developed in an environment of routine habits and behavior, imitative, which find the mutual trust between managers and workers (Herbert A. Simon 1986).

Therefore, Simon in the business intelligence activities often precede the design, in turn, precedes the election. But the model is not met as a simple sequence and not always under this scheme. What is absolutely certain is that all managerial activity is embedded in the decision-making. Intelligence, design, or planning and decision-making, make up the triad categorical to understand the purpose of the organization. Because, this analytical framework Simon presents a conception of administrative behavior that incorporates the progress that was then projected in computer programming technologies, computer networks and psychology of rational preferences (Augier - March 2003).

One question asked what Simon is behind the decisions of managers? (Simon 2001) economic theory responds with the assumption that man is hedonistic act with the aim of achieving increased utilities. Getting the greatest happiness depend on how much energy is spent on investing in yourself. Especially, economists have to do a model of "economic man" who rationally chooses the best alternative course of action possible to maximize their performance (Simon 1979; Beckenkamp 2004). This classical version of utilitarianism transfers a wrong image of the real man in all its complexity, according to Herbert A. Simon:

> The business manager recognizes that the world he perceives is a drastically simplified model of the increasingly noisy confusion which is the real world. Is content with this crude simplification, because it believes the real world is, mostly empty, most real-

[6] In *Ulysses and the Sirens*, and *Egonomics* Jon Elster has also explored a wide variety of examples of suboptimal conditions of rationality in terms of individual and collective decisions (Elster 1997).

[7] Cultural dissemination within organizations allows us to understand the effects of a mechanism of convergent social influence. If you have employees working daily in fixed locations. The basic premise is that the employee is more like your neighbor is most likely that the employee take some of the features of neighbor. In the model developed by Axelrod illustrates how local convergence can generate global polarization (Axelrod 1997, 1995).

> world facts are irrelevant to any given situation that he faces, and more chains transcendent causes and consequences are short and simple (1962, XXIV)

Indeed, the need for administrative theory exists precisely because there are practical limits to rationality. These limits are not static as they depend on the organizational context within which the decision is carried out individually. Therefore, the task of "managing" is strongly linked to the design of an organizational context where the person can approach rationality in decision-making and where this approach is practical in terms of organizational goals (Novarese - Rizzelo 2003).

As a result of their hypotheses, Herbert Simon proposed the model of "administrative man" to replace "economic man" (Simon, 1962). While maximizing economic man to select the best course of action of all the options, the administrative man simply "satisfied" in its efforts to reach a decision that is good enough. In brief, according to Simon in his actions on day-to-day and the manager seeks to take decisions within a satisfactory range of alternatives that are not necessarily the best alternative, and this in turn has consequences beyond the people, which means practice organizations also only satisfy their aims in sub optimal levels of rationality (Elster 1997).

As an example, we could say that if managers were to make a birthday cake for one of his sons would make a pie that could be eaten "and not a cake that is greatly enjoyed and remembered by your child's classmates (perhaps this is notable for the excellent predisposition of managers to "delegate" to other tasks that are trivial). In particular, nothing this phenomenon in organizational terms and from the standpoint of business, we can say that in the process of management within companies are not looking to "maximize utility" but have a reasonable profit, instead of paying an optimal price we speak of a fair price, and instead of selling at the best price, sales are made at a price you finish a good time with this stock.

In terms of Herbert A. Simon's, experience of managers, their qualifications and diplomas in the best universities and graduate courses are not enough to maximize the usefulness of decision-making. Further, Simon states that the "new" situation as temporary in the processes of products and services, a manager can run intelligently but be less effective and efficient. This leads to a very important consideration given that leaders who act motivated by this approach placed the organization in a risky situation when the "relative rate of change is high."

The model of Von Neumann and Morgenstern on game theory concepts was introduced five independent economic theory: (1) The idea of representing the future behavior as a "tree", where several branches originating from each point of the election (2) The idea of taking the minimax (select the branch that will work best against a malicious adversary) as a definition of rational choice in a competitive situation (3) The idea of using a mixed strategy in a situation competition, to prevent the proper motions are noticed by the opponent (4) The idea of defining rational choice in situations of

competition with more than two players, with regard to the possibility of forming coalitions[8]. (5) The demonstration that in the presence of unsafe choices, which only knows the probability distribution of results, make a consistent choice is to assume that the decision maker has a fundamental utility function, and is thus choosing to most expected value (Esther -Mirjam Sen 2004).

In his conception of entrepreneurial behavior incorporates point Simon (1) but not (2), (3), (4), (5), all property credited with neoclassical economic theory. But the limits of economic rationality are expressed by Simon when he addresses the administrative behavior. Simon's thesis is simple but powerful:

> What is the central concern of organizational theory is the boundary between rational and non rational aspects of human social behavior. Management theory is, in particular, the theory of intentional and limited rationality of the behavior of human beings "are satisfied" because they lack the intelligence to maximize the (Simon 1962)[9].

There are two issues that Simon developed rigorously in his writings on administrative behavior. First, the limits of rationality that run when the manager must make decisions that do not give time and under conditions of biased information (Sent 2004). Second, the phenomenology of organizational behavior that emerges from a psychology of sub optimal preferences. These issues are part of the background to understand how effectively the firm (Simon - Wash 1998).

In analyzing the process of organizational decision-making that takes place within a changing context, sometimes reactive to what happens in the market and sometimes, when the organization takes initiatives and act proactively, not always the decisions come from conditions designed with any accuracy. Namely, Herbert A. Simon makes a distinction identifying two positions inclusive, decisions can be scheduled or non-scheduled without both involving their mutual exclusion (Chen 2005).

Programmed decisions are similar to what occurs largely within organizations in mechanistic terms of Burns & Stalker (1961) or rational bureaucratic organization Max Weber. This type of programmed decisions based on the fact that are repetitive and respond to routines in the day-to-day operations within the organization. Beside, this means that before a new repetitive action of something that has been done in the past not to generate a new decision-making. Mechanistic organizations are making efforts to develop large daily routine (and control), dysfunctional consequences are widely

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[8] This was the original idea proposed in 1945 with the publication of *The Theory of Games and Economic Behavior.*

[9] "Behavioral Model of rational Choice", *Quarterly Journal of Economics*, February de 1955. (Simon 1962, p. XXIII).

referred to by Simon. In fact, if the majority of management decisions were simply programmed require less time on-site managers (Simon 1986, Simon - Vera 1993)[10].

When confronting a new situation and unstructured, or even under situations where it clearly emerges only or best option (something that was of concern to Frederick Taylor some 40 years earlier) we are facing an unplanned decision. With this sort of situation-permanent feature of the organization, "for more effort made to find an answer in its corporate history or person, it is very possible that is not the optimal solution. Generally, it is no coincidence that in this type of situations, organizational change and development, companies "importing" external resources to the organization to help and aid. This applies Maslow beautiful phrase when he says that "if we have to solve a problem is a hammer, then we see almost everything as a nail." Abode all, therefore the best way not to see so many nails is to have a wider range of tools. The consultants and companies that need them are ideal for showing these phenomena, regardless of the results can be achieved.

For instance, there are innovative techniques that have emerged to give a new twist to the business philosophy: operations research, electronic data processing, information technology, computer simulation, mathematical analysis, digital media - which were initially used for routine activities - and scheduled operations as were applied with administrative staff (Chen 2005, Foss 2001, Simon - Wash 1979.1998). Simultaneously, with the passage of time have incorporated elements of value-added operations in the first cycle were not scheduled and are being transformed for the second cycle. Eric Gaynor (World Congress of The Organization Development Institute in Zimbabwe, 1999) refers to the fact that it is applied especially to the "professionals" that make up a very significant percentage of the plant staff of large corporations. Today, large multinational corporations are able to make significant reductions in the total force of professionals as the "discretion" in making decisions is on the decline and makes unnecessary its "titles."

Weber sought to show that bureaucratic organization is a rational response to the complexities that arise in the daily actions of the companies (Perrow 1991). More specifically, sought to show how bureaucratic organization can overcome the computational limits that people have for making decisions or other alternative forms of organization such as specialization or the division of labor, such as. Certainly, Weber was beyond the model "mechanistic" because among other things, studied in detail the relationship between the person and their role. However, Weber saw bureaucracy as an adaptive system to make use of specialized skills, ignoring some aspects of the nature of human behavior.

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[10] This phenomenon of substitution of skilled labor at companies under the deployment of advanced technologies and computer systems means one of the most significant events in recent organizational history. It is again necessary to recognize the original prediction of the theory of Simon. For a detailed assessment (Ulrich Beck 2000)

In a perspective that contrasts with the Weberian conception, parallel studies of bureaucracy gave greater attention to the "consequences" in advance "of the members of the company. Such is the case of Merton (1936), Gouldner (1957) and Selznick (1949), who make mention of many of the dysfunctional consequences of bureaucracy (Perrow 1991). These scholars suggest that the failure to run under the model "mechanistic" may even perpetuate it further. In summa, the models of these authors show similar aspects, in particular, as an independent variable to find organizational ways and how these control personal behavior. It appears that the rules have implications for organizational leaders but also gives some dysfunctional consequences for the organization.

Merton pays attention to organizational learning dysfunctions. Participants suggested that learning organizational responses to similar situations which, under other conditions, are inappropriate for the organization. An independent variable to Merton's, "demand for greater control". That must those at the top of the organization, which in turn influences a greater relationship between behavior and "responsibility." These aspects are in place within companies through standardized procedures that often adversely affect the performance and production (Simon 1962). Among the negative aspects Furthermore, Merton mentions the reduction in the amount of personalized relationships, internalization of norms and standards against organizational goals, and a simplification of the categorization for making decisions, which in turn affects the search alternative solutions to problems. And it includes examples of dysfunctional consequences in relations with customers, who have been notorious in organizations "service" and government agencies.

Selznick differs from Merton (who chooses the larger variable control) and pay attention to the delegation of authority. The delegation has a multitude of consequences, including the need to better training ability. These specialized skills tend to diminish the difference between organizational goals and personal achievement, further strengthening the delegation. At the same time, causes a greater delegation "departmentalization" and an increase in the "bifurcation of interests" between the various sub-units of the company. The training also brings increased competition among peers what will lead to more spending on "people changes" and these increasing conflicts of interest. As well as, the conflict of interest increases the clash between different organizational sub-units, resulting in a greater difference between the aims of the company and the professional development of workers. In the worst case scenario the various sub-organizational units begin to develop ideologies for each department of the company.

Gouldner's model somewhat resembles that of Merton and Selznick (Perrow 1991). Like Merton, Gouldner is interested in the impact of bureaucratic rules and regulations on organizational performance. To show as a control technique to keep up the balance of a sub-system alters the balance of the system as a whole. Gouldner suggests that the creation of standards and norms in the work action oriented corporate participants that deviate from the goals of the company and those who intend to stay at the top of the pyramid. Likewise, organizational members learn to imitate the behavior

acceptable minimum. Last, this performance of "minimum acceptable" is considered a failure by superiors. In turn leads to a "closer supervision" that increases the degree of tension within the working group, and eventually alters the "original balance was expected to get through the implementation of rules and norms.

The analysis of Herbert A. Simon and James March evaluates other authors: Bendix (1947), Dubin (1949) and Blau (1955), critics of the bureaucratic system. But the most prominent approaches to Simon are the three authors to have made mention before (Merton, Selznick, and Gouldner), these authors exhibit dysfunctional consequences for organizations that adopt an array of bureaucratic type.

Simon's theory on *Bounded Rationality*

What better way to realize this that playing the meaning of some words from the genius of Herbert A. Simon in which the company says the future has to run by programmed decisions. Which in turn are made in the automated office is on your side? Also, remember that this was expressed around 1960. James March and Herbert A. Simon spent a considerable effort in the analysis of the bureaucracy and put the focus on the shortcomings of that which can be seen in the works reviewed. And nothing betters these authors to know in detail the limits of bureaucratic organization.

> The intuition and reasoning are alternative ways to solve problems, the intuition is similar to the perception, people often answer a difficult question to answer an easier, and processing of information is often superficial, because the categories are replaced by prototypes. All this was in our minds when we started working with Tversky in 1969, *and most were in Simon's mind earlier* (Kahneman 2000)[11].

Indeed, the powers of Kahneman faithfully reproduce the genius of Simon meritorious when questioning the imponderables could expect the scope of mathematical models of perfect rationality sang neoclassical economic theory.

The focus is on Herbert A. Simon who for experimental and theoretical work won the Nobel Prize in 1978. A job which, as Kahneman says, we propose a rational imponderable, nuanced, a more-or less rationality-rational (Kahneman 2003). For Simon: "My main goal is to understand human rationality. Annoyed by the inapplicability of classical optimization theory to the realities of public decision, I turned towards a theory of decision based on the proposition that human rationality is bounded (*Bounded Rationality*). Due to limitations in their knowledge and capacity of

[11] Emphasis added.

information processing human beings yearn for levels of compliance and not maximizing profits" (Simon 1995).

In particular, these textual references outlining the theory that both fund has in sociology, economics and management. The theory of bounded rationality implies that human beings do not have a personal goal of maximizing the benefit of your company, but certain levels of compliance that are due to personal goals, subjective. These targets are different ways of being consistent with the thinking of the organization. Before entering this thought, Simon had to devote much of their forces to study the behavior have isolated man: his way of thinking, what drives their choices dealing with the circumstances (Simon - Gregg 1967).

Afterward, to make the field internalize procedural decisions, Simon was inclined to isolate certain theoretical assumptions. Then induced rationality and decision are largely determined by human thought and the amalgamation of subjectivity - in the case of bureaucracy. "My interest in economics began in 1935 as part of my interest in human decision-making, particularly in how human beings face the complexities, uncertainties and conflicting goals before us daily in the personal and professional life. Took me pursue my goals a long but pleasant search through a maze of possibilities (Simon 1978).

To understand budgetary decisions must understand the overall decision. To understand the decisions in general, still its rational aspects, we must study the decision-making, and more generally the process of human thought. To do this I had to get away from my first studies of political science and economics, for the psychology, computer science and artificial intelligence "(Simon 1991, 1995). Concurrently, we also need to understand that nothing, not even the decision-making run in empty, since as factors, rationality, decision, behavior or instinct, part of the organizational context. It is not enough time to decide how they performed each of the factors, but the features that characterize the interaction between these factors. Simon did not emphasize enough on the latter.

While their studies are spotless from the isolated operation of thought, in the contexts and circumstances of the organization, interaction that subjects have with the environment does not seem to be a matter of their studies. The same, Simon assumes that men have when they run in accordance with their own theories of reality and not in line with reality itself; they share same concepts through language. Thus, one might ask, will they be targets in accordance branched or understood differently? What is a manager for an exaggerated price for the president can be a very small cost. Knowing even accounting studies put the figure and their real costs, the potential risk of spending may or may not be rational for one of the two (Schwartz 2002).

Abode all, can not think of a communication of abstract principles Frege style (in which case any situation is understood by both partners equal) if you think some bounded rationality. Limited not only by the lack of information or compliance rates, intuitive interaction with the person actually carried out by decision-makers is fraught

with differences, perhaps thereby enclosing the logic of rationality within the organization should not be defined as limited or conformist, we must think about the conceptual differences which contrasts *in situ* force of reality (Minka-Foxall 2003).

To hear and decide certain essential features of human thought, Herbert A. Simon worked with artificial intelligence coming to the invention of a program that solved complex problems advanced. "The theory of bounded rationality emerged from the study I did on recreation in Milwaukee, confirmed what had discovered by analyzing the tax incidence in California" (Simon, 1991, 1996). That is, this is a theoretical discovery work based on circumstances experimental. There, Simon manages to get the basic tenets than settle for his special theory of rationality:

> The most important years of my life, from the scientific point of view, were 1955 and 1956 [...]. In 1955, while I kept my concerns to the administration and the economy, I focused particularly on the psychology of the human process of problem solving, more specifically, to discover the symbolic process by which people think. I quickly became a behavioral psychologist and a computer scientist [...] invented a computer program capable of reasoning on a non-digital [...] On December 15, 1955 was born the heuristic solution of the problems, by computer, when we demonstrated how a computer could use search heuristics to solve difficult problems [...] chess became a standard tool in cognitive science and artificial intelligence research. Our research focused on chess and chess players worked, who at best could analyze 100 different faces a difficult position "(Simon 1978, 1991).

Simon then went to different perspectives of human thought to think the decision-making process (Simon 1984, 1995). Intuitively assume that thought can be standardized, meaning that it is something stable, a neuronal form is maintained, and this does not seem to confirm that there are different realities. *Bounded rationality* is then, "rationality" to re-define its principles continuously. Therefore, decision-making becomes complex, especially if it is group decision-making centers, the rational principles fluctuate because of personal preferences; even if consistent with the goals of the organization differ. The question is then how to find, in the midst of a bureaucratic decision-making center, the best alternative to a situation?

Simon says that "the concrete human being has very limited capacity to understand and compute", which obviously affects their ability to decide. And so, adds: "My doctoral thesis is derived from two basic principles: human beings can only do bounded rationality, and as a result of their cognitive limitations, tend to find with sub" (Simon 1991). I n other words, we have said before that thought can not be considered stable and in line with overall goals, people who make up the group responsible for decision-making matrix are offshoot of the aims, "subjective" rationally and then give coherence to what has decide, this time with personal interests, the result of rational constraints offered by the generalization which is inscribed. As a result, predictive

learning what becomes a meta-theoretical challenge the rationality of the organization, only from this challenge can be generalized to the organizational goal, "Learning in the sense of reaction to perceived consequences is the main way that manifests rationality "(Simon 1978)[12].

> In solving problems, human thought is governed by software that organizes many simple processes of information, ordered and complex sequences that respond and adapt to the environment of the task and the data extracted from that environment as it develop sequences ... The secret to solving problems is that there is no secret: this is done through complex structures of simple and familiar elements "(Simon 1977).

Search and satisfaction, according to Herbert A. Simon, are two central concepts in the theory of bounded rationality (Schelling 1989, Simon 2000). Who has to make a decision gets an idea about what he wants. As found, the search ends. This mode of choice is called satisfactory (Novarese - Rizzelo, 2003). The importance of search theory and satisfactory, can show how they actually make decisions based on reasonable efforts in the field of computing, using incomplete information, doing the impossible ... carry out the procedure maximize. Although, just minor complications are introduced in a situation of choice; the remoteness of the conduct with respect to the predictions of the theory of subjective expected utility is obvious. People do not even behave as if maximizing. In like manner, the microeconomic foundations of the classical theory of the firm have nothing to do with reality. Not even remotely describe the processes that humans use to make decisions in complex situations ... In experimental tests with different groups behaviors deviate significantly from suggesting the hypothesis of subjective expected utility. (Simon 1979).

In view of rationality Simon operates from two basic areas of human nature, content and process. In the region of knowledge processes originally comes through perception, intuition and rational behavior[13]. In an evolution from a slow learner, partner, inertial and reactive up to be a separate structure, controlled, with effort, educated and flexible. Thus, the contents of rationality depend on the interactive relationships between stimuli, simulation of behavior and perception units with the capability of conceptual representation. Human beings develop the ability to compare past, present and future. For Herbert A. Simon language contributes greatly to jump the gap between our species and is largely the understanding of our common belonging to the culture and society (Simon - Kotovsky 1973).

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[12] "In December 1970 I visited Argentina, where I did something that had never done before, nor did next: request an interview with a celebrity. For a decade he had admired the stories of Jorge Luis Borges, and was intrigued by the role they played in the labyrinths. We talked, after which I concluded that there was no abstract model at the base of his works. He wrote stories, did not create models" (Simon 1991).

[13] Robert Nozick, 1995.

For the non-rationality devoid of principles has been externalized, Herbert A. Simon writes: "I know of no systematic development of a theory of information and communication, which considers the attention, not information, as the scarce resource." Yet "Today the problem for the human information processor, both inside and outside an organization, is to select communications you wish to attend, from the great flood of information that shakes him. The whole concept of what it means to know has changed. In the era before the computer a person knew something when he had stored in his memory, so that might find on the proper database [...] now the critical task is not to generate, store or distribute information, but filtered so that the processing requirements on system components, human and mechanical, not greatly exceed their capacities" (Simon 1972).

To the extent that the principles are outsourced decision-making, rationality is limited attach the scope, removing the obstacle of the ramification and qualification targets in cutting bureaucratic decisions. It is no longer a "to do" but a "how to". The rationale is now built concepts operational rationality (Simon - Iwsaki 1994).

At the working relationship brought about the search for a decision and under some of the considerations outlined above, "Our thinking is guided not by reality but by our theories of reality" (Simon 1987), but if subjective theory of reality is determined by unchangeable and immutable concepts, performance tends to be logical. "Do not confuse logic with human thought" (Simon 1991), however, the functioning of the organization is increasingly efficient for its resemblance to the logic and this is because the concepts that are harder, more coercive more still. Not to be confused with the stillness of the decisions, they are, paradoxically, more dynamic since it fits easily into context.

The rationale that drives the decisions is only one working moving concepts outlining a theory of reality that the person must register. Organizational culture, business climate, family and even the clichés of mission, vision and management are terms inclusive of people under the same reality. To illustrate, Simon refers to this by noting that the "assumptions of rationality are essential components of almost all sociological theories, psychological, political and anthropological know, but not in the version that uses the economic analysis, according to which man is a rational maximize, not settle for anything less than the best-possible, i.e. with the optimal". And addition, “in my opinion, almost all human behavior has a strong rational part, but in the broad sense, not in the strict sense of the economists, the economic analysis should by no means confined to the narrow definition of rationality and economic analysis has been concerned with the results of rational choice, rather than decision-making" (Simon 1991)

The rational expectations theory goes over the problems, contrary to solve them. Not interested in how decisions are made, but what decisions are made "(Simon 1978). And its contributions to organizational theory states: "in Administrative Behavior showed that decision-making is the core of the administration, and that the language of

management theory must emerge from the logic and psychology of choice human "(Simon 1979). Beside, Simon's approach introduces variables not previously covered by economic rationality, changes in consumer preferences which depend on your personal psychology, the role of intuitions, moods and increasing motivation varies temporarily. Simon is the merit of having identified the informal components of human behavior and having integrated into a more dynamic conception of organizations.

Simon's theory shows how organizational rationality has become operational and integrative (Simon 1984, 1998). There's no escaping all this a major aim, namely to maximize utility. Avoid subjective ramifications of each goal has been one of the major structural problems within the definition of organization and functioning as decision-producing agent. However, leaving aside the implications, no formal relations have been brought outside the organization when joining what has nothing to do with them. It seems that Simon's theory goes in search of a subject to join the organization modulates its reality, is incorporated into an artificial model of coercion in the first instance, then, shape the rational capacity of its decisions with sociological concepts group, making them controlled elections. Simon does not run the control, but makes an intense psychological mechanism of creativity (Dasgputa 2003)[14].

In short, the theory of bounded rationality in Herbert A. Simon allows us to test some clichés prevalent in the economics of organizations. And specify in greater detail why the company philosophy includes a relationship consistent with personal behavior of agents in this situation. Bounded rationality of people acts under relative degrees of comparison rationality.

Implications of the theory of Simon for Institutional Economics

Accordingly, one of the most powerful ideas that are derived from the theory of Simon on bounded rationality is that the nature of the organizations is based on the restricted nature of human intelligence and behavior. Precisely because human rationality is limited, divisions and competence in social knowledge are necessary. In a similar vein to Hayek (1980), Simon sees that human knowledge advances mainly due to the task and the ongoing effort of hundreds of researchers find their results within democratic institutions.

Both Simon and Hayek considered the analysis of institutions as essential to understanding the theory of human mind, but differ in that Hayek considers markets as the only institution capable of coordinating the decisions of people with such diverse interests, while Simon sees the division knowledge and coordination as a complementary process that marks the evolution of markets and institutions.

[14] A criticism of the concept of bounded Rationality employed by Simon: Nicolai Foss, "The Rhetorical Dimensions of Bounded Rationality: Herbert A. Simon and Organizational Economics", in Salvatore Rizzello, ed. *Cognitive Paradigms in Economics*. London: Routledge, 2002.

Simon genuine insight was to understand the organizational decision-making integrated into an evolutionary process of learning. Since the mid-70s to his most recent study: Choices, Values and Frames, Kahneman and Tversky (2000) investigated the psychological principles that govern the creation, perception and evaluation / alternative in the decision-making process. To explain, the authors found that preferences vary substantially according to the way a subject is presented ("frame"). Before stable preferences are reconstructed by people during the processing of the decision, a test of this process is provided by experimental conditions in which different representations of the same object of choice causes contrary preferences.

This suggests that the crucial aspect in the decision making process is the ability to build new representations of problems. One point on which Simon worked hard during their experimental research on administrative behavior in the 50 (Earl - Elgar 2001). How mental models with which people and institutions outlines their roles in society are part of a subjective dialectic overlapping interests which give dynamism and development of the same institutions.

Of course, another direction of Simon influential in institutional economics is clear in the work of Thomas Schelling on deterrence theory and agent-based modeling. Similar to Herbert A. Simon emphasized the value of starting the analysis of collective behavior with rules of behavior for people and use simulation to explore the implications of the results of a large-scale. Institutional behaviors are not a mere aggregation of personal behavior, but organizations significantly affect how people choose. Schelling called this interaction *Micromotives and Macrobehavior* (Schelling 1978).

“People follow many guidance and separates many ways, says Schelling. There is segregation of sex, age, income, language, religion, color, taste, and accidents of historical circumstances” (Schelling 1978, 130). Some segregation is a result of the practices of organizations. Another result is the interplay of each choice that discriminates. Another result is specialized communications systems, such as languages. In summa, some segregation is a corollary of other forms of segregation: the residence is correlated with the location of employment and transport. Schelling relates analytically by modeling later called tipping, personal incentives and collective results nostra how segregation involved in some quantitative restrictions, the mechanisms separating, sorting and conflict.

Schelling's analysis *Macrobehavior* and *Micromotives* and relevant to the economic study of institutions because it shows how numerical quotas or ratio can affect the probability of a stable balance of a given population. It is also important to understand how large groups of people come to concerted action. The logic of Schelling's model illustrates, such as, that consensus is not enough to do numerical balance. There are test cases identified in his work that relate extreme stable equilibrium within the same group (black or white during the worst period of racism in America.) There may be potential stable equilibrium, or more, the first positions and movements rates decide which of two conflicting groups will be imposed.

Ownership, the Schelling model is to make co-extensive relations between personal behavior and collective action. Furthermore, identifies the remarkable observations of Herbert A. Simon on the obvious organizational equilibrium deviations that take place under the psychology of emotions.

Eduardo Wiesner (1997) Simon puts the focus on the theoretical framework of institutional model. More precisely, it highlights the positive properties of inductive and experimental approach of Simon, in contrast to the deductive and abstract models of economic theory. Furthermore, Simon incorporates the idea that there are no magic formulas to solve problems in economics. Collective decisions are the result of psychological factors of choice for the emotions involved. The rationality bounded sets limits that result in the design of more sensible economic policies with the difficulties of economic equity and spending.

Conclusions

This article set out to make a basic presentation of the central aspects of the work of Herbert A. Simon, for analyzing the economics of organizations. We have presented the relations of the theory of Herbert A. Simon with a tradition in economics going back to organizational Max Weber. To get to highlight, the legacy of Simon in the context of the institutional theory of economic behavior reflected in the work of Kahneman and Schelling.

Institutional economics from a long tradition that goes back to Adam Smith recognizes the limited nature of the rationality of the actors, the limits within which a decision can be the result of selfish or altruistic reasons, or both. Thus, that collective decisions are partly derived from personal psychological expressivities is a wise economic philosophy in classics such as Bentham, Stuart Mill and Marshall. This subjective part of the operator is explored by Herbert A. Simon with new tools: biology, computer simulation systems, and mathematical modeling programs.

Simon's influence in the contemporary debate on the social sciences is gaining strength as the original property issues such as bounded Rationality, organizations, decision theory, collective action, individual behavior. The advantage of Simon with regard to the inherited tradition is that it manages to join a front-line philosophical reflection in a context as pragmatic as the signature field and organizational efficiency. In conclusion, Simon brings to the theory of administrative behavior an epistemological foundation of rigor with ranges that are still unexplored and undiscovered.

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