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Intuition in the process of instantaneous decision making¹ L'Intuition dans le Processus de Prise de Décision Instantanée

Fernando Kuhn ANDRIOTTI
fernando@kuhn.com.br
Escola de Administração – UFRGS (PPGA)
Rua Washington Luis, 855/307 – Porto Alegre – Brésil

Directeur de thèse:

Henrique FREITAS
hf@ea.ufrgs.br
Escola de Administração – UFRGS (PPGA)
Rua Washington Luis, 855/307 – Porto Alegre – Brésil
Phone: +55 51 3308 3482 / FAX: +55 51 3308 3991

1. DECISION MAKING IN THE SPOTLIGHT

The decision making environment is getting more and more complex and it demands from people to react quickly and with quality. This environment is also much more dynamic, each time new elements should be taken into account when a decision must be made. There are many tools to assist the manager in this whole process. However, when a decision must be made immediately it is impossible to rely on these tools.

These decision making issues occur in many different times, locations, sectors; there is a wide range of situations that may require the manager, no matter if he's well prepared or not, the ability to cope with this kind of decision. So, if any person can be a "victim", why is not there a model, or a formula that will lead these people to make better decisions? The answer is given below, with a vast number of attributes that help to shape the process from the more intangible features such as the importance of collected information, to that more tangible ones like the amount of available information. Included are cultural factors, psychological, availability, among others. However, when something really happens there is always something new, a surprise element, something that did not occur as planned. It's on this type of environment (uncertain, with risks, incomplete information) that the experience, skill and intuition have an important role in defining a solution.

The reasons why something does not go as planned, studied or simulated can be explained by different natures. Two scientists, Weick and Simon, introduce some elements that help the understanding of such situations. The first one focuses on the environment and on the goals that are behind each decision's process. Regarding the goals, according to the author (WEICK, 1979), there is an issue because they are not static, that is, opposing to what one might imagine, there is a number of factors that influence their definition. This is where a second contribution, related to the environment, assists the understanding. According to the author there is more than one way to see the environment where we are involved, just like a painting in an art gallery, where each person sees it in a certain way and this specific view is influenced by several factors such as the academic one, life history and hierarchical level. The process of making a decision, even if individually, is influenced by environmental factors. Therefore, the same individual has, at different stages of his life, a different understanding of the same situation. It is like a journey that does not have a fixed point of arrival, but where someone is continuously building it, with each new information available, with every new conversation held, that is, we cannot think of the environment as something static, with a well defined shape.

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Simon (1965) presented the well known bounded rationality concept which points out that even if someone tries to be as rational as possible he rarely will be. This exists due to the complexity of the environment, lots of information to be analyzed, many alternatives, and many results to be analyzed. Apart from the environment's limitations, individuals also have a reduced cognitive capacity of processing all the information available as well as reduced time to analyze it and make the optimal decision, which, for the author, will be no more than satisfactory. Besides the pointed limitations, even if the individual tries, he will not be able to manipulate the environment completely in all its complexity, there will always be something unpredictable, a new information, new variables that were not accounted in. As an example, the study made in 2004 by the consultancy firm Price-Waterhouse Cooper with 200 companies in different sectors of the economy in 30 countries, shows that only 2.5% out of 10,640 projects were considered well succeeded; the remaining 97.5% of the decisions that had been unsuccessfully made may have had their causes in hasty decisions with little information, or where managers were unable to understand the environment and adapt the decision to the context (Ferraro, 2007). In fact, this is something that deserves to be highlighted in any study of decision making: comprehend the individual and his perception of the world, which leads us again to Weick (1979). When talking about the individual, there is a huge amount of variables that influences the way a decision is made. According to Snowden and Boone (2007), "due to the complexity of the environment, intuition, intellectuality and charisma are not enough. Leaders need tools and techniques to guide them and their firms through non-familiar water".

Klein (1998) points out that standard decision models are useless and, according to Snowden and Boone (2007, p.3), "it is important to remember that best practices are, by definition, past practices", there is much to learn about the decision making process and, according to Woiceshyn (2009), intuition is being ignored during all this time as a useful tool. According to Buchanan (2006), in a moment of pressure, with little time available, lack of information, lack of history, the individual is led to trust his instincts. It is believed, based on Lehrer (2009), Klein (1998), Dean and Sharfman (apud EISENHARDT, ZBACKARI, 1992), among others, that everything ends up influencing the decision-maker.

1.1 Definition of theme

According to Simon (1965), it (the decision) follows the principle of bounded rationality, i.e., the executive's capacity to solve problems is lower than the complexity of these. It does not matter if you have all the information available, or if there is a truly interest in making the best decision, the decision maker will still be subject to 3 different factors that will guide his decision: mental skills, habits and reflexes; information and knowledge; and personal values that differ from the organizational values.

It is a fact that the sources of information are not fully exploited (DAVENPORT, 2001), so the organization will have to be satisfied with the information that presents the best cost-benefit relationship. Due to several factors the decision will not be the ideal one, but the one that meets, at the time, the needs of the organization (ALTER, 1999). Goodman (1993) points out that this "good enough" method of information-gathering and decision-making can be often beneficial, but can also incur in damages to the organization.

Difficulties in the decision-making process are the most diverse possible. Goodman (1993), in his study on the use of information in decision-making process found some elements that are common in decisions with an unexpected outcome: (a) searching for information is disconnected to the decision-making process, (b) information to support decision is collected after the decision-making, (c) collected information for a given situation is usually used for different purposes other than the originally intended ones, (d) the information gathering process always goes beyond the necessary, (e) even though having the necessary information, managers complain about the lack of information, (f) too much information, beyond the capabilities of the executive to read and interpret.

It turns out that, looking at a list like this introduced by Goodman (1993), as well as many others (KLEIN, 1998, EISENHARDT, 1989; DRUCKER, 2006), it is possible, due the objectivity of factors, to create a list, like a checklist of items to be considered in a decision. At this point it is important to make a distinction of Simon (1977) on the types of decisions that are presented on a day-to-day basis in the life of an individual/organization. As the author points out, it is possible to picture a

ruler, which possesses, at one extreme those ordinary decisions (programmed), and at the other end, those decisions with unprecedented nature, non-scheduled (non-programmed).

In this context of decisions that are beyond the ordinary, where there are no simple solutions, with a high level of uncertainty, with ill-defined goals, the manager still needs to manage the issue of time, or how to overcome the various obstacles in an instantaneous way. While it may seem obvious, an instantaneous decision involves much more than only the question of time, its limitation, or the pressure exerted by it (BENSON III and GROTH BEACH, 1998). It also involves uncertainty (KLEIN, 1998), intuition (SADLER-SMITH, 2007) and experience (EISENHARDT, 1989). However, as pointed by Woiceshyn (2009) in a recent study, the influence and interaction between the intuition and analysis processes that make up the decision-making process is not well understood, and have received little attention by the academic community.

The pressure of time (instantaneous), on the other hand, is subject to several studies in the fields of psychology, economics, management and, more recently, in neuroscience, so it is possible to understand how individuals behave in situations of emotional stress, but lacks on researches focused on intuition. Many of these studies demonstrated that the rational model of rational decision-making is beyond the reach (MILLER, HICKINSON AND WILSON, 2004) and that in such cases there is a strong influence of more personal factors, linked to intuition (KLEIN, 1998; LEHRER , 2009; ARIELY, 2008, KAHNEMAN, 2003a, among others).

An instantaneous decision has as its main characteristic the individual being not prepared in advance, even briefly, and having to make a decision that has to be made in a period of time we arbitrarily define as less than a day. During this time the entire cycle of the decision needs to be complete: presentation of the situation, heuristics, information, and decision scenarios. Buchanan and O'Connell (2006) have a similar definition to this type of decision, but they call it differently, they use an expression that refers to the individual's heart, in the original expression "gut decision" (p.40). In fact, they refer them as the decisions that are quickly made, usually when faced by a crisis, where there is no time to "weigh arguments and calculate the probability of each possible outcome. They are made in situations where there is no precedent and therefore little evidence "(p.40).

In this sense, recognizing the importance of intuition in decision making, this study aims to answer the following research question: how intuition works in instantaneous decision-making process?

1.2 Relevance

In opposition to what the classical authors imagined, there is not a dichotomy between reason and intuition; actually, there is a complementary notion, where one does not work without the other. As stated by Ariely (2008), we are all owners, at some level, of models that help us in decision making and we rely on the "... attractive and simple idea that we are able to make the right decisions for ourselves" (p. VII), the concept behind this statement is that we seek, always, to maximize the results (the utility) of our decisions. Kahneman (2003a) introduces a framework that helps to understand the use of reason and intuition in the process of decision-making (Figure 1).

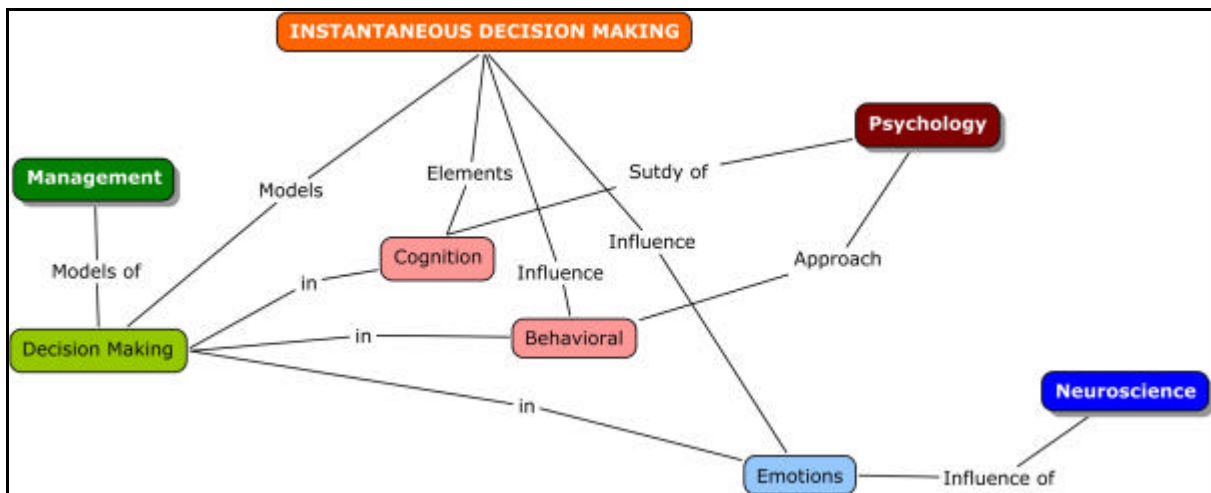


Figure 1: System 1 and 2
 Source: Kahneman (2003a, p.698)

This classification in system 1 and system 2 made by Kahneman (2003a) - originally appointed by Stanovich and West (2002) - relates the differences and similarities that exists between the use of reason and intuition. In some cases our thinking is more structured, with the necessary time and information to chain a line of reasoning, which is more connected to the system 2. Also according to Kahneman (2003a), intuition, always connected to hasty decisions and possibly with undesirable outcomes, more closely linked to fast, automatic, with strong emotional background processes may be, in individuals who have appropriate experience, an indispensable tool for routine activities. Although each system has its merits, both may be related to abstract concepts, triggered by language and still be connected to the events of the past, what is happening now and also imagining the future.

Thus, the goal of this study is to understand how executives or managers make use of intuition in instantaneous decision-making processes.

2. INSTANT AND INSTINCT

It is believed that the instantaneous decision making is in its majority, more connected to the system 1, but with strong influence of the system 2 (as shown in Figure 1). According to Kahneman (2003), the system 1, more connected to intuition / perception, is always present, and it is unlikely to be changed by the system 2, however the latter will always be present, whether based on intuition, whether based on a more rational analysis. This connection is so strong that it would be impossible for a system to exist without the other. This can be seen in the studies of Antonio Damásio (2000), in which patients who suffered brain damage and had the area responsible for emotions affected were no longer able to make decisions, especially those requiring quick responses.

How to explain situations in which the individual must make a quick decision with little information? Without emotions, the so-called "gut decisions" would be impossible in any environment and often they are decisive, as stated by Lehrer (2009, p.48), "... even when we think we do not know something, our brain knows something. This is our feelings trying to tell us something".

2.1 Intuition stimulus

Intuition has a fundamental role in decision making; however, sometimes it is seen as an individual's property, often innate, other times it is interpreted as an element that distorts the decision-maker of a rational way (SIMON, 1987; KLEIN, 1998; ARIELY, 2008; BAZERMAN and MOORE, 2009; LEHRER, 2009, among others). In fact, a decision making model cannot be complete if it does not consider intuition in the process. As pointed Sadler-Smith (2007) and Hodgkinson et al (2009) intuition, insight and instinct are not exactly synonymous, as shown by the definitions in Table 1.

Instinct	Automatic reaction on a relatively fixed way to one stimulus, as something biologic, innate, like a self-reflex.
Insight	Observe a specific problem's solution and be able to verbalize or articulate the knowledge – for example, having a <i>eureka!</i> moment in difficult situations and an incubation period away from the problem.
Intuition	An involuntary analysis/ judgment, hard to articulate, carried upon emotions, based on knowledge and experiences, which is rapidly achieved through holistic associations and without rational and deliberate thinking.

Table 1: Instinto, insight e intuição

Source: Sadler-Smith (2007, p.31)

According to Hodgkinson et al (2009), in the management field the concept of intuition seems to have reached a consensus, which has the following characteristics (p.280):

- Capacity to directly reach the knowledge or understanding without the apparent intrusion of rational thought or logic interference;
- Neither the opposite of rationality, nor a random process of guessing, intuition corresponds to the thoughts, conclusions and choices largely produced by non-conscious mental processes;
- Judgments loaded with emotions that emerge through fast, non-conscious and holistic associations.

Klein (1998), as well as Simon (1987), deals with intuition not as something magical, impossible to obtain. Based on their studies, the authors found that, actually, intuition is something that can be acquired through various experiences, inner awareness, self-knowledge, and therefore, is better understood as a skill than as a gift. The more diverse the experiences lived by this individual on day-to-day basis, the more he will internalize the different situations and they will become part of the intuitive process.

According to Bazerman and Moore (2009), most of our decisions are based on System 1; the busier and hastier the individual is, the more he will trust, and leave his decisions over this system, strongly influenced by emotions, "which can influence all the poles of action" (ELSTER, 2009, p.40). The question is when to use one or another, or which correct function to balance these systems.

Simon (1987) states that intuition is nothing irrational, and it is not a process that operates independently (of the analysis), in fact they are complementary (reason and intuition). There is an important distinction about the use of intuition and, above all, in specific situations. One cannot confound decisions made by experienced people in dynamic contexts against decisions of a more emotional, personal way. One is based on knowledge, experience, also the goals are different, the other is based on personal involvement, with a greater weight to the emotional mechanisms.

When it comes to a management environment, Simon (1987, p.63) states that "the manager cannot afford to choose between analytical and intuitive approach", the time and urgency require a rapid response; delaying it can mean making a decision, which might not be the most appropriate.

2.2 Reason

The researcher Anthony R. Damasio (2000, p.277) makes a statement that expresses the relationship between reason and emotion: "... it is natural to want to protect the reason for the weakness that the emotions or abnormal manipulation of the normal emotions can trigger the planning process and decision making". Elster (1998), examining various emotions (love, envy, anger, shame, guilt, etc.) realized that rationality is also knowing when to rely on one or another, that is, under certain conditions it is better to follow more prescriptive, mechanical models rather than invest time and energy on something unnecessary. Lehrer (2009) reaches the same conclusion, the debate cannot be eternal, time is short, we just need at any given moment to decide, in a more emotional or rational way, both points are taken into consideration and decision is made.

Eisenhardt and Zbaracki (1992) show that the decision maker sometimes is rational and other times he is not. At times we have the necessary tools and information to decide in a conscious and rational way. It turns out that during the process, some factors are changing, such as the environment, and end up, inevitably, creating adjustments in goals, which will also be changing. Moreover, as pointed out by Elster (2009), the individual chooses a course of action that will satisfy, given his beliefs and desires.

Goodman (1993) complements this approach by stating that the process of decision making in organizations is, in many cases, a chaotic process, that is, in the process there are a series of paths, delays, loops that can influence. For each situation, it must be taken into account the pitfalls of the process, the available techniques and, above all, the time available for decision making.

Below, there is a brief discussion on the influence of time (and the pressure exerted by it) in decision.

2.3 Time pressure and decision making

In the process of decision making, it is impossible to predict how much time that a person needs to analyze a situation to get the response that maximizes his or her satisfaction. However, it is known that in a management environment, the tasks do not allow this individual to have as parameter the time, but the time that the activity requires. In this sense, Ordóñez and Benson III (1997) made an important distinction between time constraints and time pressure. The first is linked to the task, that is, the deadline for it to be developed (including a decision); on the other hand, the latter relates to the individual's feeling regarding this task, that is, the stress to deal with the restriction of time.

The dynamics requires that decisions must be made at all times, so the limitation of time (task), and time pressure (feeling) are presented in an everyday basis to managers and executives. According to Mankins and Steele (2006, p.79), "in the real world, managers make strategic decisions continuously, driven by a need for immediate action (or reaction)". There is not enough time to

explore each opportunity, each threat, to make a detailed analysis of scenarios and alternatives, one more unit of time dedicated to a task can mean less a unit for anything else, at least as important as the first. The time, as well as other factors, limits the amount and quality of information that the manager will have at their disposal.

3. RESEARCH ARCHITECTURE

Woiceshyn (2009), when studying how directors, considered effective by their peers, make decisions, came up with some elements that can lead an individual to have a better quality of decision making, these are: focus on what really matters, seek to identify standards and apply them, remember that not all standards are appropriate, go back and forth in evaluating the possible alternative courses of action, look for what are the facts behind the issues, to gather and reflect on the emotions that are in evidence and, finally, be motivated to solve the problem.

Each of the above suggestions is somehow able to be identified in the theories of decision presented below (Figure 2).

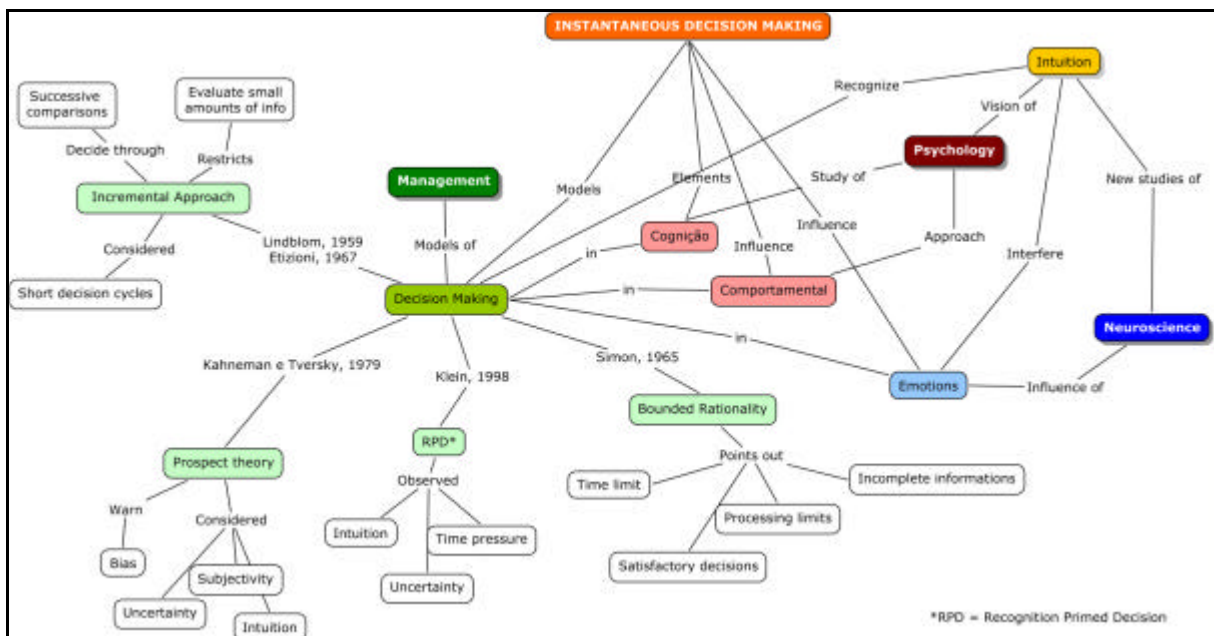


Figure 2: Decision making instantaneous and elements

Source: prepared by the author

This is the scenario to understand instantaneous decision, so experienced in the activities of any individual, whether in a more strategic level, whether in a more operational level. Keeping these elements in mind, makes it possible to try to identify them and understand how they influence the executive when there is great pressure for time and high level of uncertainty. Below, it is presented, in table 2, a compilation of some of the contributions of some authors that assists the understanding of instantaneous decision-making.

Author(s)	Contribution	References
Lindblom e Etzioni	Incremental approach: questioning the rationality of decision-making; focus in increments rather than in the general formulation; process susceptible to change with the environment; consider a few options for analysis; makes room for intuition in the process; more realistic reading of the environment	Linblom (1959); Etzioni (1967); Quinn (1980)
Gary Klein	Naturalistic decisions: questions rational models of decision making; observes events in their natural environment; quick decisions; considers intuition in decision making; decision making model based on the	Klein (1992; 1998; 2004; 2009); Lipshitz <i>et al</i> (2001); Lipshitz, Klein e Carroll (2006)

	first identified option; seek to represent reality; see intuition as a skill and not as a gift	
Daniel Kahneman e Amos Tversky	Psychology in the decision: normative models are not used by individuals, uncertainty and risk have a major influence on the decision-maker, has biases that operate in the individual; considers the intuition in decision-making as something present in quick decisions	Kahneman e Tversky (1979); Kahneman (2003a; 2003b); Tversky e Kahneman (1974; 1983; 1986)
Gerd Gigerenzer	Gut feelings: limitation of time and knowledge, use of more unconscious level of thought and believes that intuition is linked to the ability of bringing to mind those experiences in the subconscious	Gigerenzer (2007); Gigerenzer e Goldstein (1996)
Jon Elster	Emotions: considers emotions as having a central role in decision-making; state of mind influences how the individual sees and interprets the environment	Elster (1998; 2009)
Beach & Connolly	Psychology and Decision: through a retrospective, approaches the issue of psychology in decision making and how it can contribute to the research and understanding of the phenomenon	Benson III, Groth e Beach (1998); Beach e Connolly (2005)
Eugene Sadler-Smith	Intuition: seeks to understand the intuition and its influence on the actions of individuals, intuition as something connected to non-conscious mental processes, with fast association and emotion-laden	Sadler-Smith (2007); Sadler-Smith e Sparrow (2008); Hodgkinson et al (2009)
Barry Schwartz	Paradox of choice: not always having more options to compare is better for the decision maker; the time requires the brain to process more information in less time; biases of the decision; limits the amount of items to be taken into account	Schwartz (2005)
Dan Ariely	Rationality: author questions the rationality in decision-making; introduces, in controlled experiments, the mentioned biases by Kahneman and Tversky; recognizes the influence of emotions in decision making and also the intuition	Andrade e Ariely (2009);
Jonah Lehrer	Neuroscience: brain knows more than we think it does and considers intuition as having a key factor of success in decision-making	Lehrer (2009)
Jaana Woiceshyn	Rationality and intuition: how to combine both concepts to reach a better quality of decision-making and rapid cycles of decision	Woiceshyn (2009)

Table 2: Authors and contributions to the study
Source: prepared by the author

4. METHOD

A project that aims to investigate a modern phenomena, it is known, will face some difficulties when it comes to the choice of the object. There are various forms or aspects, which are based on the own style and preference of the researcher, therefore, there is a range of methods that can take him to explore the subject from different perspectives. In most cases this will be an incomplete view, or according to Mason (2006), depending on the complexity of the environment, the object of study, the lens selected for analysis, and what he calls micro-macro, that is, each phenomenon as part of something bigger, a series of elements that are present, even if subtly, but eventually influence the way the actors act, imposing a series of limits on the research itself. As Freitas and Janissek (2000, p. 12) "[...] the objectivity of the collected data in a research is no longer sufficient for the understanding of a phenomenon, [...] subjectivity makes it possible to understand the true reasons for the behavior [...]"

The study has a theoretical basis that involves aspects of the administration field, of psychology and decision-making more specifically, therefore it is expected that over the work items will arise from its field to be studied, and this will imply on the search for more references. According to Guba and Lincoln (2005), during the research process some controversies will arise, contradictions that alert the researcher when it is time to stop and deepen the theoretical object of study, and when it

should delve further into the field. As pointed out by Freitas and Janissek (2000) it is essential to carry out, a priori, an extensive literature search and that the instrument is a reflection of this study, where the different dimensions have theoretical support. Figure 3 has the research representation that will be used for collecting and analyzing data.

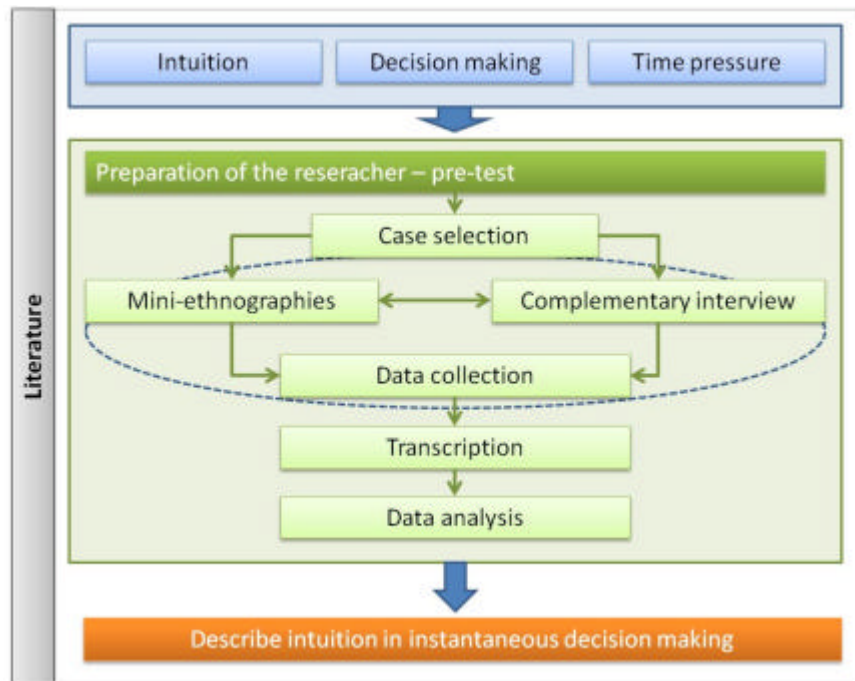


Figure 3: Research method - observation

Although at all stages of the research the literature supports the researcher, it is believed that in the first phase of observation, a more exploratory one, literature is of special aid for a later discussion about the data that will be collected and analyzed. With the elements that will surely come, it will be possible, corroborating with other recent studies, to develop a protocol that will support into the next steps of the research. Thus, in addition to items already supported by literature, there will be elements that emerged from its field of study, resulting in something closer to the reality of the study.

4.1 Preparation of the reseracher

This stage has two main goals, the first one is to approach the object of study as a whole, becoming familiar with the field; the second goal, not less important, is to go beyond what is already being raised in the literature, that is, incorporate elements of real situations, as observed by the researcher in the field. It is thought that, since it is an instant decision, a few days are sufficient to observe a good number of these decisions and draw something for the next steps. As stressed by Cooper and Schindler (2003), the method of observation, for its versatility, "makes it a primary source and an essential complement to other methods" (p.304).

4.2 Field of study and case selection

When addressing the issue of the instantaneous decision, other issues arise automatically, for example, what is the scope, how to cope with the world of management decisions that may occur in that sector and in which specific field it is thought to develop the study? Well, these issues lead us to search the answer in the literature. Regarding the scope, as has been pointed out, decisions will be observed on a more strategic level where "hardly all variables are available or there are many difficulties that impede them to be collected and organized in a timely manner" (FREITAS et al., 1997, p. 56)

This study seeks to investigate the intuition and its connection with the decision-making process called instantaneous, where there is shortage of time and the decision must be made within a maximum of 24 hours duration, ie, that doesn't allow people to postpone to the next day. Given this imposed limit in the observations to be made, or the protocols that will be conducted, many decisions

will not be considered for the data analysis, but many others which are of strategic nature, but perhaps not too important a matter for the organization, will also be explored.

Case selection is the biggest challenge to the researcher in this type of study, regarding the methods used and the object of study itself. Like other studies, firefighters could be observed (KLEIN, 1998), as well as consumers (LEHRER, 2009) or doctors (DAMASIO, 2000); conversely, we chose to observe managers or executives. However, this only increases the range of options available, given that these individuals are in all organizations of different sizes and characteristics. A questionnaire will be set to be distributed to different executives, which will be screened according to certain criteria and will allow the study with a sufficient number of individuals, regardless of the route chosen. It is known that in the case of an observation, there will be a smaller amount of people, but with greater depth and in the case of a think aloud protocol, participants will be selected to contribute with the object of study, ie, taking many decisions day-to-day, agreeing to participate and are part of different organizational strata.

4.3 Observation as mini-ethnographies

The observation, as well as ethnography, has a number of well defined peculiarities and stages, even if the collection occurs in a non-structured way. As the researcher will play a neutral, non-interference role, the observations will be non-participating, or simple, "more appropriate to qualitative studies, particularly those of a more exploratory way" (GIL, 2006). Therefore, an attempt is actually closer to naturalistic studies, which, in accordance to Lipshitz et al (2001) "... is an attempt to understand how people make decisions in real-world settings that are known and familiar "(p.332), and the naturalistic decisions seek to understand what the decision maker really does, and the nature of his tasks (LIPSHITZ, KLEIN and CARROLL, 2006).

4.4 Complementary interview

At this stage the interviews serve as an auxiliary technique for a better understanding of the subject matter. Given that the observation will be the simple type one, without interaction, some elements may go unnoticed, especially when they are not externalized. Thus, as shown by Rapley (2004, p.16), this technique allows "producing retrospective (and prospective) versions of their actions, experiences, feelings and the past (or future) thoughts."

4.5 Collection, transcription and data analysis

Following Gil's considerations (2006), firstly it will be explained the reason of the study and the importance of each interviewed person's collaboration for data collecting and understanding of the studied phenomenon. With the interviewed and observed individual's authorization the interactions will be recorded for a later stage of transcription and, finally, analysis of these data.

5. CONTRIBUTIONS OF THE STUDY

Bonabeau (2003) points out that the use of intuition in decision-making is related to the executives' dynamic environment, where the information is on real time, in staggering quantities, and it is important to decide on something as soon as possible. Since this type of situation is increasingly common on a day-to-day basis to executives, managers, supervisors and individuals in general, this gap needs to be studied, to provide subsidies so that everyone can read, understand, and define their own rules for decision making, supported by structured resources, but also supported by those not so structured as intuition.

Trying to understand how managers cope with these situations and how the decisions in these environments, under these adverse conditions, are made is extremely important so that others can be trained to act with more quality. This study adds to others and aims to equip managers with the tools to have a better quality of decision making, especially where there is a high level of uncertainty and, specifically with regard to this work, where intuition has an important role.

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