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Chaper 3: An "In-Side environment and I&E"

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Chapter 3

An "In-Side environment and I&E"

3.1 Introduction

In the previous chapter the multiple options available to people when the knowledge they can acquire from the outside world is objective and identical, have been deeply analyzed. In these cases the environment is given and can be freely inquired, so probabilities of interesting events can be calculated, yielding cases of certainty, risk-based decisions or choices founded on a trade-off between acquiring more information and the cost of such researches.

But what happens if the outside environment is an abstraction and cannot be accessed? Shifting to this new environment a clear distinction between exogenous and endogenous probability has to be made. A probability is said to be exogenous if it is *given from out of there*, meaning it has an external cause or origin. In the ambiguous environment, on the contrary, probabilities are endogenous, which means they are *coming out of us*, and they are often based on someone's beliefs.

In this chapter the endogenous field of *weak* ambiguity is presented and answers to some important questions are given. Are decisions really influenced by knowledge? What can be identified as knowledge? How can it be acquired? More information does not always bring to better decisions and an excess can cause confusion. Furthermore, sometimes decisions cannot be made just after an information search process, because probabilities are inside us, not externally given. Making decisions in an ambiguous environment is not easy, it is a matter of perspectives: there is not a unique rational point of view to follow during the decision making process. Knowledge is based on a personal interpretation and since everyone can interpret facts in different ways, one can not decide who is right and who is not. An example of the ambiguous environment can be found in politics. A politician takes decisions based on the vision of his political party, but changing party can lead him to change also his decisions. As said before, it is a matter of perspectives.

Is it possible to destroy the reality and make new innovative decisions in an ambiguous environment ruled by perspectives and common sense? For example, imagine a completely empty room destined to a lecture. Students meet each other there for the class and everyone is going to do routine actions: stand up, talk, pay attention, play with phones, and so on

and so forth. Now imagine the same scenario set in a room where chairs are divided into two groups: on the left side of the room chairs are sparse, whereas on the right side they are closed together. What would students do before the teacher comes? Commonly, people would put all the chairs in order, making a square or a circle, or just arranging them like in the right side, according to the *idea of class*. Is this an innovative decision? Through this chapter a step forward is taken into innovation and new decisional models and strategies are suggested. The aim is to teach how to spread all chairs in the room, upside down, creating a stimulating disorder that brings fresh original ideas, something that does not fit in standards.

The first paragraph of this chapter examines in depth the *viewpoint* concept, based on the theory of Paul Feyerabend on *what is True and what seems to be True* and the definition of aesthetics by Kuhn, that express how what really matters is what looks nice according to us.

Moving on the meaning of Data, Knowledge and Information, the actor network theory formulated by Callon is analyzed, with a focus on agnosticism.

The core of the chapter presents the art of decisions making in an ambiguous environment explained by March, with a full description of a decisional model, the *garbage can*, and the relative organizational model, called *spaghetti organization*. The chapter ends with conclusions, focused on the role of innovation and entrepreneurship.

3.2   Feyerabend Relativism

According to Paul Feyerabend *et al.* [David Wood, 2005] the discussion about what is True and what it seems to be True lasts from the Pre-Socratic philosopher age. On this topic, F. *et al.* assert that "True is not True, True is whatever is True for a single being; each one could have a different opinion about the Truth, relative to themselves: to their experience, to their dreams, to their being."

Thus the *relativeness* of the definition of truth directly affects the understanding of reality, the ruling and living. This usually leads to an averaged vision of the personal opinionated views called *common sense*. Once the *common sense* is defined and accepted by the whole community, it influences the interpretation of the Truth for the future actions. Sometimes this influence is so important that leads to a reconsideration of the past.[1] Thus *the Truth* can be considered both the *result* of the process that tries to understand and model the world, both an *instrument* to modify and control it.

The Relativism is essentially the opposite of the Objectivism, which assert that everybody, regardless of their own perception and opinions, lives in the reality. The truth is only one, scientifically studied, politically adapted, fancy interpreted to meet the common folks needs[David Wood, 2005].

Objectivism failed to identify *a single model* for such world: many models were designed, but none of them rules the whole be. This is supposed to be related to the fact that even

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[1]If "the history is written by the winners", then these winners can impose their will and ideas, shaping the common sense of future generation .

the scientists are, willing or not, influenced by their opinion, wishes, and needs to research "only" particular events and properties of the world, doing that in a different way.

Basing on these facts the process that models the world and the Truth has to be considered as a combination of the two proposed models: the combination of the objective information interpreted by the single being, influenced by the personal experience and will, averaged in a common sense (acceptance) from the society, and by the power that the process has on itself. This combination varies at each time of the process progress leading to a model that should account for an infinite factors and possibilities, and infinite complexity. Furthermore the formalization process itself would influence the modelling leading to an infinite loop, thus, making the task impossible. This process is said to be *autopoiesis*.

The unmanageable complexity derived from this leads to a lack of understanding, namely *ambiguity*, that can be exploited.

3.3 Aesthetics

When dealing with *ambiguity* there are also other, non mathematically demonstrated, factors that can contribute to the interpretation, and thus deciding or modelling, action. According to McAllister the "Beauty is a sign of truth"[J., 1996, J., 1998]. Starting from this J. Morgan argues that "Beauty can play a significant role in the "logic of pursuit"[Morgan, 2013] an a priori style justification in contrast with the most common a posteriori one, the "logic of justification".

During the process of modelling the unknown, ruled by the ambiguity, doing something and then try to justify the choices made, it is not always the best option. Exploiting the a priori approach is thought to bring to better solutions: the unknown needed variables could be substituted with a consideration of the underlying (beauty) model given the choices made are the right ones. This approach can be found also in the decision theories that analyze how a scientist decides what to research next, and in the considerations made when founding a research project[Morgan, 2013].

3.4 Retrospective random reality

Given the complexity of the model of the reality the *rationality* is said to be "retrospective since knowledge of external constraints and forces is insufficient to predict action and is complicated by internal differing goals and objectives. Under these conditions, motivation is a collective process of group decision making and ownership, restricted by any constraint from the external environment...Under a random perspective, rationality is an emerging process wherein prediction is not foreseeable to group creates its own context"[Craig R. Wood, 2015].

The modelling is so complex, mutable, and easily influenced, that the motivation can only come after the analysis, the creation of the *common view*, as a justification. Such situation is called *random reality*. A reality where none has a global understanding of it,

nor leads its modification; which evolution is subject only to the random[2] combination of its agents.

3.5 Data, information and knowledge

At this point it could be useful to consider for a moment some relevant concepts for decision making and try to understand if and how they change in the context of an environment as the one described so far. Data, information and knowledge are key notions underlying every decision, but what do they mean? They are sometimes erroneously used exchangeably, but they indeed refer to completely different things. Some more precise definition follow.

Data can be seen as external stimuli, facts that can be analyzed or used in an effort to gain knowledge or make decisions. They can be structured or unstructured, noisy or clean, relevant or irrelevant.

Information refers to data that has been given some meaning by way of relational connection. The meaning applied to the data may not necessarily be useful. It is important to notice that without information one can not have knowledge.

Knowledge is the concise and appropriate collection of information in a way that makes it useful. Knowledge refers to a deterministic process where patterns within a given set of information are ascertained. It has some useful and applicable uses.

In other words, information is the meaning given to data by the knower according to an interpretative frame; knowledge is the conceptual frame or scheme through which data are interpreted and given meaning becoming information.

It is clear now how the meaning of data depends by the perspective of the inquirer, thus generating ambiguity. Different people could infer different things from the same data and build their own, perhaps conflicting, knowledge.

3.6 The perspective on the environment

If knowledge is nothing but a personal view on the data provided by the environment, then the latter can be considered as an actor interacting in a network. This idea was deeply analyzed by Callon [M., 1986] and led him to formulate the actor network theory. This theory highlighted how sometimes the relationships between the actors of a network are even more important than the actors themselves and that the environment in which the network grows is not a passive element, the background of the scene, but a node of the network, perhaps one of the most influent. The environment becomes a central node and all the others should consider its influence when making decisions. It can be an ally or an enemy, one may have to exploit it or to overwhelm it. In any case its role changes what it is understood and how decisions are made.

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[2]To be interpreted as: "so complex that the structure can not be even noticed". Since nothing is truly random.

3.7 Agnosticism and social identity

It is clear that knowledge depends on one's perspective and that this perspective depends, in turn, on the environment. But what kind of knowledge can one get from the ambiguous environment that is being considered?

The answer is pretty simple: nothing. If nothing can be undoubtedly stated, then nothing can be undoubtedly known. Such situation is generally referred to as agnosticism, the condition of who does not know, or believes that it is impossible to know, if a god exists or, broadly, anything [University, 2016] one can think of.

This situation obviously has a great impact also on the social identity, the portion of an individual's self-concept derived from perceived membership in a relevant social group. As originally formulated by Tajfel and Turner in the 1970s and the 1980s [Turner, 2010] social identity theory is described as a theory that predicts certain intergroup behaviours on the basis of perceived group status differences, the perceived legitimacy and stability of those status differences, and the perceived ability to move from one group to another. The term social is suggested for describing the joint contributions of both social identity theory and self-categorization theory.

If this agnosticism redefines the way people interact with the others and how they behave in an active environment, then how decisions are made?

3.8 Decision-making in an ambiguous environment according to March

John G. March conveyed three stories of how decisions happen in organizations, which are story of decisions as intendedly rational choices, story of decisions as rule-based action, and story of decisions as artifacts [March, 1991].

3.8.1 Decisions as intendedly rational choices

Decision making is resulting from consequential and preference based action. People believe that human action is the product of human mind and choice [March, 2006]. In this case, decision makers will base their choices on four things: alternatives, consequences, preferences and decision rules. They must know the alternatives for action and the consequences of each of them. Then, they must be able to put their preference order or subjective value for the alternative consequences. Independently, they have rules by which they compare and evaluate the consequences based on their preferences, in order to select suitable alternative.

There are two guesses from the theory about uncertainty in the future according to March [March, 1991]. The first regards the uncertain future consequences of current action due to informational and computational limits on human choice, for example, limits on number of alternatives considered and limits on the amount and accuracy of information that is available. Information has to be discovered through search. By evaluating the performance to achieve goals, the search is continued until it discloses an alternative that

seems good enough to satisfy objectives. In this way, the new alternative is added to the existing options.

The second guess is the uncertain future preferences for consequences of current action. According to theories of choice [March, 1991], preferences have the following properties: subjectively absolute, stable, consistent, precise, and exogenous. In fact, the practice and the theory are not consistent. Decision makers often make decisions based on rules and tradition, instead of fully conscious preferences. Preferences are inconsistent and change over time, so that predicting future preferences is difficult since the uncertainty appears. Furthermore, it seems like actions and their consequences affect preferences, although preferences, in theory, are used to select an action. However, such differences described in theories and in actual appearance can be interpreted as reflecting some ordinary behavioral wisdom of human beings, which does not always parallel the theory. Even though human beings want consistency, inconsistency shows them necessary aspects of the development and clarification of preferences. When inconsistency appears, the preferences to make decisions become ambiguous [March, 2006].

Another issue in rational choice model that has to be noticed is risk taking. Decision makers often face a situation where they can consider it as opportunity or danger. Risk always sticks on any decision or alternative or step that human beings take. It is not easy to estimate the probability of the risk, to decide whether to take the risk or to avoid it. Although decision makers can make sure the probability that something happens is between 0 and 1, they cannot be sure whether the probability of them taking the risk is high or low, a good or bad option. They face the ambiguity, in which the probability is unknown and it is hard to say their decision is right or not. Even when they decide to avoid risk, inadvertently, they take the risk.

Decision makers must be able to distinguish between taking risk and gambling. When they find variability, they try to control it rather than just treat it as chain to expected value in making a choice [March, 1987]. And in general, experiences become the biased factor for decision makers in risk taking. They 'believe' that they will do rather well in estimating future probabilities in situations in which they have experience. Past successes raise self-confidence in handling future probabilities and leading them to believe their own ability and insight [March, 1991]. In contrary, the successes make them hardly believe in the existence of luck. Consequently, the successful decision makers tend to underestimate the risk they have through experience and the risk they currently face [March, 1987]. When facing uncertainty and ambiguity, decision makers assume that uncertainty can be removed and they tend to try improving the quality of information. Also, they tend to trust few signs and exclude the rest from consideration when inconsistent information appears [Shapira, 1995].

3.8.2 Decisions as rule-based action

This vision exposes how action is the product of tradition, rule, routine, or revelation. Rather than by evaluating alternatives based on the values of consequences, decision making often rises by finding appropriate rules to follow [March, 1991]. This model involves three factors: situation, identity, and matching. The rules of appropriateness match the situation

and identities. Since it does not calculate the future consequences of current action, the changing or development of the rules is needed to match the changing situations. And these 'changings' are often ambiguous. When decision makers are uncertain with their own utility function, preference ambiguity is present [March, 1988].

Rules can be seen as an implicit agreement among rational parties to act appropriately in return for being treated appropriately, and current rules contain information produced by experience [March, 1991]. Rules can be modified as the organization learn from experience, for example, on the basis of feedback from the environment. The rule development can also be done by selecting rules that produce optimal decisions out of collections of invariant rules. Moreover, it is possible that decision makers copy each other and this is a common feature of ordinary organizational adaptation. The action of rules modification, selection, or imitation, can be a possible change that decision makers might do as innovators. However, each of them does not always work in any case. There are some factors like rates of change, consistency, and foolishness that decision makers should consider.

3.8.3 Decisions as artifacts

The two models described above seem to treat the outcomes as the main product of the decision process. In fact, the environment can be more complex and confusing. Many things are happening at once: technologies are changing; preferences and perceptions are changing; problems, solutions, ideas, people and even outcomes are mixed together making their interpretation uncertain and their connection unclear [March, 1991]. Thus, there is a change in the idea of how the connection between decisions and decision making is tought. March conveyed the new concept of decisions and decision making as artifacts emphasizes network of linkages within and among organizations rather than hierarchies, temporal orders rather than causal orders, loose coupling between decisions and decision making rather than tight coupling, and the role of decisions and decision making in the development of meaning and interpretation.

By emphasizing temporal orders in organizational decision making, decisions can be seen as the consequence of combining different events involving different individuals. The idea is that it is not possible that individuals or groups simultaneously involve in different event. If individuals attend to some things, they will not attend the others. Thus, the attention is engaged by certain participants to certain decision. And it depends on alternative claims on attention [March, 1991]. Such idea is a generalization that leads to a decision making model called 'garbage can model' which will be deeply explained in the next part. Due to their temporal proximity, problems and solutions are attached to each other, and to the choices as well that can lead to the decision. The meaning constructed by this alternative idea (not theory of choice) is that life is not mainly a choice, it is an interpretation, and process gives more substantial meaning to life than outcome.

3.9 How decisions happen in an ambiguous environment: the "garbage can model"

In an ambiguous environment, where there are no defined problems or answers, decisions cannot be constructed in a rational, hierarchical and consequential way. In this case opportunities *happen* and, sometimes, are taken as decisions according to a process identified as "garbage can model"[Michael Cohen, 1972, March, 1991]. This model and its applications on organizations were observed and analyzed in depth by Michael Cohen, James March and Johan Olsen in 1972 [Michael Cohen, 1972]. In that occasion, the garbage can process was defined as a mix of four streams: problems, solutions, choice opportunities and participants. Specifically, problems and solutions are associated together and related to choices, when they are in temporal proximity [March, 1991]. Participants move from one choice to another, taken from the garbage can, depending on random entry time.

Problems are the result of prediction inability. For each problem, there are an entry time t (the moment in which the problem becomes visible), a quantity that defines the energy required to solve that problem, and a list of choice opportunities related to that problem. Solutions search for problems to resolve, but are distinct from them. For each solution there are an entry time t and the energy required, which represents the quantity of energy needed for that solution at moment in which the solution exits from the can and becomes part of the decision system. Choice opportunities include all the occasions in which an organization is expected to produce a decision; they can be activated at a given time t and are eligible to a list of participants (those that are part of the organization at time t). Participants are not fixed: they can vary both in the available time they can dedicate to the decisional process at time t, both in their relative preferences, that put them in contact with a particular problem or solution instead of another one [Michael Cohen, 1972].

Inside the garbage can, all those elements are mixed together and then extracted randomly, in order to obtain a decision that is untied from a pre-defined preference. From this viewpoint, "decisions do not follow an orderly process from problem to solution, but are outcomes of independent stream of events within the organization(Daft, 1982)"[Daft, 1982]. This confused state and the lack in rationality of this model can be seen as a disadvantage from a hierarchical and organized point of view. However, for an entrepreneur who is searching for innovation, it is essential not to lock ideas and, instead, to mix together multiple sources and people (each with a different garbage can of new possibilities) in order to extract something original. A real innovator never underestimates the potential of random diversity and creativity, even if it can appear as chaotic. As a quoted sentence says: "It's called garbage can, not garbage cannot". Even if this process can appear inefficient, it enables some type of choices that otherwise would not have been possible, because of ambiguity, lack of knowledge and order, and dynamic conflicts. In situations like those, common management strategies cannot be applied, because of the collapse of all the assumptions they base on.

The decision process that emerges from the garbage can is very interactive, with problems, solutions and participants moving from one choice to another at any time. Exploiting

this feature, important choices in ambiguous organizations are often made by flight or oversight, without following a schema and purely under the control of improvisation and cooperation. Only unimportant choices are made by resolution (after some period of work) [Michael Cohen, 1972]. This happens because important choices are those related with innovation and innovation is an art that feeds on fluidity, original ideas and ex temporary scenarios.

By describing the garbage can model from a structural point of view it is possible to identify four organizational structures, often represented through matrices or tables: the net energy load, the energy distribution, the decision structure, and the problem access structure. The net energy load is the difference between the energy required to solve all problems and the effective energy available [Michael Cohen, 1972], and it reflects how much the organization is *stressed*: when the value is zero it means that the energy required is equal to the energy available, yielding a case of heavy load. The energy distribution model shows the differences among all decision makers with respect to energy. In this case, it is possible to observe how the distribution of energy regarding important people in the hierarchical decision structure of the organization can change the situation of all the workers: if important people spend few energy on a problem this will have implication on the motivation of all the others. The decision structure and the access structure reflect, respectively, the possibility of connection between decision makers and choices, and the accessibility of problems with respect to choices. All those structures are strongly related with time, whose rhythm allows or impedes one situation or another.

The garbage can model has been adopted by organizations that deal with ambiguity, referring to features such as: the decision process, the energy available, and the technology exploited. In those organizations the decision process is guided more by a collection of different ideas (problems, solutions and choices mixed in the garbage can) than by a coherent structure. The production process is unclear and learns from past experience via trial and error procedures. Participants come from different domains and are characterized by differences in availability and personal preferences.

In the next section specific examples of the garbage can model applied on such organizations are presented.

3.10   Spaghetti organizations

In the previous section the garbage can model has been described: it depicts an organizational structure in which decisions are made under an uncertain environment. As stated in[March, 1975], decision-making is something that happens in presence of limited rationality, where organizations, and people that participate to the decisional process, learn from their experience. This puts the basis for future actions, in a continuous and cyclic process called "adaptively rational". In that sense the garbage can model highlights how individuals and organizations try to make sense of their experience, and consequently modify their behaviour in light of their interpretation of events. Organizations make experience, but without a specific structure or method that drives it.

This section gives two examples of organizations classes in which decision-making faces situation that fully represent the garbage can model presented before: unclear goals, technologies and fluid participants. Due to this, it is possible to refer to them as *spaghetti organization*, to underline the aspects of randomness and intricacies of their structure.

The first class presented are the *universities*, as discussed in[Michael Cohen, 1972]. Choices are typically made without attention to existing problems and with minimum effort in terms of time and energy (oversight). Moreover, problems pass repeatedly from a choice to another, but decisions resolve no problems (flight), such that, "it's likely that important choices don't solve problems". This ideal *garbage can*, made of problems, choices, and decision makers, rearranging themselves, makes the understanding of both solutions and choices increasingly difficult, and this is the reason why the decisional process is susceptible to an increase in the work-load.

Even when problems are solved, by oversight or flight, choices are typically not the first problems they were attached to. In such scenario, a right matching between the *garbage can* actors leading to a solution is also dependant from timing and the current load of the system. An analysis of the response of the model when an advert event happens follows.

A particular event is called *slack*, and is defined as the excess of capacity maintained by the organization. It emerges when resources are not fully allocated and organizations do not completely utilize them. This situation can determine episodes in which, for example, "employees are paid more than necessary to retain them within the organization and the firm is charging its products less than it would be possible"[Näslund, 1964]. The example before suggests that *slack* is sensible to both the external resources provided to the organization and the consistency of internal demand due to its participants.

The *reduction* of *slack* represents an advert event inside the organization, and implies some important consequences in the garbage can decisional process. This scenario has been analysed by Cohen, March and Olsen in 1972[Michael Cohen, 1972] taking into account four parameters that allow to infer the response of the structure previously described in universities and schools: *net energy load*; *access structure*; *decision structure* and *energy distribution*. A part of their experiment is now reported, in order to clarify the university organization. Four types of universities have been considered: (a) large, rich universities, (b) large, poor universities, (c) small, rich universities and (d) small, poor universities. Given such pattern, relatively rich universities are expected to have a light energy load and an unsegmented decision structure, representing a particular rigid and hierarchical scenario, whereas poor ones show a different energy distribution depending on the structure dimension. Moreover, the amount of unresolved problems (under the hypothesis of *slack*) will be higher in poor institution than rich ones. Table 3.1 summarises this initial scenario.

The garbage can model can be used to predict the variation of these parameters under *slack reduction*. Availability of resources will be shorter, thus the increase of net energy load, because problems need more effort to be solved. Adversity also affects both access structure and decision structure and shifted toward, respectively, a more hierarchical access and decision structure, because administrators are less able to move from one decision to another. However, poor universities are in the worst position under adversity, due to a

Table 3.1: Results in pattern variation under slack reduction.

	LOAD	ACCESS STRUCTURE	DECISION STRUCTURE	ENERGY DISTRIBUTION
LARGE, RICH	Light	Specialized	Unsegmented	Less
LARGE, POOR	Moderate	Hierarchical	Hierarchical	More
SMALL, RICH	Light	Unsegmented	Unsegmented	More
SMALL, POOR	Moderate	Specialized	Specialized	Equal

much higher increase than rich institutes in problem activity and decision time. The model also predicts that any institution will experience improvements in their position over longer times.

Another example of *spaghetti organization*, analysed in[Fagerberg, 2004], is given by a danish firm, Oticon, producer and market-leader of ear aids, that in early 1990's decided to operate a radical organization transformation, representing a dramatic change from the previous "hierarchical, functional-based organization".

The adoption of this model was due to the loss of competitive advantages of its products that were "largely dependent from a mature and declining technology" and aimed to create a more creative and entrepreneurial organization structure. When the *spaghetti organization* was introduced it immediately produced substantial technological innovation during the 1990's. However it was gradually abandoned due to lack of "coordination and problem sharing within projects". In the end, the management attempted to selectively interfere in projects (*selective-invention*), causing an increasing frustration among the employees.

3.11   Conclusion

Throughout this chapter the *weak* type of ambiguity has been described like a situation in which people decide what to believe in. Everyone's behaviour is driven by probabilities that reside inside us. In this sense it is possible to say that the whole environment is all a matter of perspective: every intention to pursue an idea is based on some beliefs, on what it is perceive as fair during our lives.

There are two main actors playing an essential role within the environment: the innovation itself and the entrepreneur.

Introducing and spreading innovation is the main objective of the entrepreneur. Doing innovation nothing is simple and it is also very different from the learning phase everyone experiences on a day-to-day basis. Innovation involves generating knowledge rather than *simply* understanding it. It requires a deep exploration of the problem domain one is trying to solve and it is also a matter of dealing with other people. Some of them can be positive figures helping us achieving our goal, but some others can turn out to be discouraging and interfering with our work. Here is where the role of the entrepreneur becomes even more critical: this kind of person is keen on exploring new horizons but, at the same time, needs to exploit what the world already offers to him.

The exploration phase is the trickiest and hardest one, since it is a common thought

that news are doubtful or wrong, even though they are well supported by argumentations and facts.

Exploitation is the other key part in the innovation procedure, during which the idea is developed in a final product. It is necessary to avoid getting stuck with unobtainable dreams. The main risk is to get stuck in a circular process unless someone else invents something new. It is probably the most difficult problem the entrepreneur has to face.

Therefore the entrepreneur's goal is to find an equilibrium state between developing, discovering new things and consolidating what already exists. Thus, as the scholastic philosophers affirmed a long time ago, *"in medio stat virtus"*: this is the motto of the entrepreneur.

Nonetheless the entrepreneur's work must not be confused with reinventing something just for the sake of doing it, without giving birth to something useful, something which is really better than everything else that already exists. Nowadays, with the spread of so many startups, nearly everyone can experience the thrill of being an entrepreneur. Many people affirm to be entrepreneur of themselves, to be the head of a little company, but only few of them can say they are developing something really innovative, something that somehow and someday can change people's habits and way of living.

The best way to deal with this continuously transforming environment is to accept and understand that only few phenomena can be fully controlled by a human being. In this sense everyone (also the innovator and the entrepreneur) has to try to find a way to accept and to deal with the randomness characterizing our inner and outer world.

A possible way out is exploiting as much as possible rationality, chasing the chance to tame the randomness characterizing the environment.

The type of ambiguity described in this chapter, that can be defined as *ambiguity one*, has a key difference from the other type of ambiguity that can be found in the environment, which is presented in Chapter 4 referred to as *ambiguity two*.

In the first one the entrepreneur plays the role of a *speaker* supporting his ideas, presenting them to other people. He leaves the audience the freedom to choose without any pressure. On the contrary, in the latter case the entrepreneur tries to convince people of the soundness of its choices and words. Doing this way, the audience is under pressure and the freedom to believe in what they think is better tends to disappear. Manipulation takes the place of perspectives. This is where the two types of ambiguities are deeply different and how the entrepreneur's role changes the rules of the game.

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