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Finding the Extraordinary and Creating the Unexpected: Gnome and Genius combined in an exceptional ethical heuristic.

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Abstract

Purpose – This paper aims to present an integrated framework for ethical decision making in uncertain conditions, such as those of entrepreneurship. The model aims to build an exceptional ethical heuristic employable by entrepreneurs.

Design/methodology/approach – The theoretical framework is anchored to Aquinas' theory of practical reason virtue, specifically its minor virtue *gnome*, and the Kantian faculty of *genius* or to better say its *modus operandi*. Thanks to the composition of these *prima facie* distant ontologies it is possible to build a 'ready-to-use' heuristic.

Findings – The paper through a philosophical discussion offers a ready-to-use heuristic that may help entrepreneurs and businesspersons when 'navigating' uncertain and troubled situations. In such situations, firstly it is important to recognize the 'exceptionality' of the situation, disregarding where necessary the ordinary criteria of judgment (an act directed by *gnome*). Secondly, a creative reconstruction of available knowledge able to re-shape the 'rules of the game' is needed (an act directed by PR but with connotations drawn from genius).

Research limitations/implications – The paper provides only a theoretical conceptualization of the heuristic model. However, the result is a ready-to-use heuristic rule for entrepreneurs, who work in uncertain and unclear conditions. Empirical validation of the framework can represent an opportunity for future research to test the operative impact of such an exceptional ethical heuristic.

Originality/value – Little attention has been dedicated to ethical decision making in the entrepreneurial setting built on a virtue ethics approach. This paper's proposed model may represent an innovative alternative to strictly rational models for ethical decision making.

Keywords – Ethical decision making, Entrepreneurship, Heuristics, Gnome, Genius, Aquinas, Kant

Paper type – Conceptual

1. Introduction

Traditional decision-making approaches often set apart moral and ethical considerations as if these elements would not be of interest in a completely rational choice model (Robinson *et al.*, 2013). However, in a continuously increasing number of valuable contributions (O'Fallon and Butterfield, 2005; Bastons, 2008), decision-making is claimed to be fully embedded into ethics and ethical beliefs. One of the most used perspectives in business refers to explaining the process of taking decisions as virtue ethics (e.g. Arjoon, 2008; Melé, 2010). However, most of such contributions tackle the problem in a 'quite orthodox' managerial fashion (e.g. Gibson, 2008; Grassl, 2010).

A literature gap can be recognized concerning the application of virtue ethics in the entrepreneurship field, which, by its intrinsic nature faces uncertain conditions and circumstances (Kirzner, 1973). In such specific circumstances, the decision-making process has to include uncertainty, extraordinary contingencies, and unstructured problems (Sarasvathy, 2001). As pointed out by pertinent literature (e.g. Busenitz and Barney, 1997; Guercini *et al.*, 2014), entrepreneurs seem to overcome such problems thanks to a marked use of heuristics, which are shortcuts and rules of thumb, allowing for fast decisions, and are indeed especially useful in uncertain and complex contexts (Tversky and Kahneman, 1974; Gigerenzer *et al.*, 1999; Kahneman, 2011). For these

reasons, a possible gap in the decision-making literature may be depicted, particularly focusing on a virtue ethics perspective specifically 'crafted' for entrepreneurship and its particular decision-making contingencies and processes.

With this in mind, we will target the *phronesis* virtue, translated into modern English as practical reason (PR) or wisdom, with a specific focus on *gnome*, one of the minor virtues connected to it also referred to as a 'potential part' (Cessario, 2002). *Gnome* or perspicacity is the mental habit of the discernment that operates in exceptional and extraordinary cases (Aquinas, *Summa Theologica*, hereafter *S.Th*, II^{ae}-IIae, q.51, a.4, 1947), which seems to fit perfectly with entrepreneurial ontology and nature (Pellegrini and Ciappei, 2015). Such a virtue, however, operates only in the cognitive moment of the decision: the *judicium* step (judgment), which is followed by the actual selection of preferred solution, i.e. the *electio* (choice) step (Westberg, 1994). In extraordinary contingencies, when they are recognized as such by *gnome* (Pellegrini and Ciappei, 2015), then the final choice/decision often needs to create a new set of rules to mold or shape this 'blurred' scenario into an ordered state. This is why the *modus operandi* of the *genius* elaborated by Kant (*Critique of Judgment*, hereafter *CoJ*, 1914) in our model seems able to fit the purpose. In a modern sense, the figure of the genius has been considered as "the avenue through which nature becomes subject to rules that have their origin in human reason" (Proulx, 2011, p.35). This implies that theoretically the figure's *modus operandi* is able to create a set of new rules and thus create unexpected (innovative) outcomes. This would also imply a possible logical assumption: entrepreneurs strongly employ heuristics in their decision-making processes and such processes are informed by the virtue of PR; firstly, thanks to the directions given by its minor virtue *gnome*, and then finalized by PR itself, which, however, assumes a similar *modus operandi* to that of genius. This assumption will be synthesized into an *exceptional ethical heuristic*, with the traditional indication of *search*, *stop* and *decision* rules. Entrepreneurs can easily use this heuristic as a 'guideline' for their most important decisions, orienting their actions toward the good.

2. Entrepreneurial decision making and heuristics

As premised, the virtue ethics perspective has often been used for blending traditional decision-making processes and ethical considerations (Arjoon, 2008; Bastons 2008; Grassl 2010; Melé 2010). The merit of these contributions is that of having 'introduced' the Ancient Greek Aristotelian tradition of the virtue into the modern context of business, setting a direct relation between the agent and his/her actions and the consequences especially in terms of internal consequences of who the agent becomes as a result (Ferrero and Sison, 2014). This approach stresses clearly that actions have consequences and these consequences are not only external but affect the agent who performs them (Bastons, 2008). However, most of those works tackle the problem in a more 'managerial fashion'; for example, Grassl (2010) clearly describes his decision-making model as a sequence of ends – or in managerial terms, goals – means (or resources), and execution (or implementation). This approach is surely generally applicable to all kinds of situations; however, in entrepreneurial activities, decision makers face uncertain conditions and circumstances with a limited access to information (Kirzner, 1973). Thus, in such specific circumstances, the decision-making process may not rely on strong planning. Similarly, Sarasvathy (2001) with her effectuation theory states that, in entrepreneurial settings, ends or goals are not always known nor fixed. Rather, entrepreneurs most of the time have resources (means) at their disposal and their courses of action result from 'constructing' opportunities out of such a setting.

While it is unwise to be open to a relativist perspective within ethical judgment, it is also true that completely disregarding contingencies would imply a 'cold' application of rules and principles without any form of moral sensitivity and, actually, this may lead to injustice (Buchholz and Rosenthal, 2005; Dunham, 2010). For this reason, several contributions have distinctly framed the problem of ethical decision making for entrepreneurship in comparison to a more traditional managerial situation (e.g. Buchholz and Rosenthal, 2005; Dew and Sarasvathy, 2007; Dunham, 2010). Our contribution is to enrich the entrepreneurial ethical decision-making field using a virtue ethics perspective based on the Thomistic tradition (e.g. Bastons, 2008; Grassl, 2010; Melé, 2010).

Talking specifically about decision-making processes, entrepreneurs do not differ from other decision makers from a categorical perspective, but simply in their more frequent use of heuristics for appropriate situations (Busenitz and Barney, 1997; Gaglio and Katz, 2001; Read and Sarasvathy, 2005). Kahneman (2011) seminally defined the heuristic of judgment as "a simple procedure that helps find adequate, though often imperfect, answers to difficult questions" (p.97). Heuristics are specific instantiations of a strategy that ignores part of the available information in the problem space or with the goal of making decisions more quickly, frugally, and/or accurately than complex methods (Tversky and Kahneman, 1974; Gigerenzer and Gaissmaier, 2011; Kahneman, 2011; Artinger *et al.*, 2015). For the purpose of this article, we focus on the recent paradigm called the "fast and frugal heuristics research program"[1] (Gigerenzer *et al.*, 1999). Such a paradigm highlights how heuristic decisions may be more appropriate in uncertain circumstances than rational and fully developed decisions. Especially in complex environments, typical of entrepreneurial settings characterized by unstructured problems (Artinger *et al.*, 2015), heuristics allow decision makers to adaptively respond to contexts' uncertainty. In such circumstances, rational strategies are less effective due to their excessive focus on rules and on a larger set of information (Guercini *et al.*, 2014). Heuristics decisions may lead agents to implement strategies with an 'ecological rationality'; in other words, the decision maker tries to match the internal perspective with the external contingencies aiming at coherence with the environment.

Gigerenzer and Gaissmaier (2011) bundled the basic components of heuristics into three steps: *search*, *stopping*, and *decision* rules (p. 456). Firstly, the decision maker has to know where to find appropriate information and hints to implement a decision (*search* rules). Heuristics delimit the

[1] In the pertinent literature, heuristics have been approached from two opposite points of view: the more recent paradigm, also used in this work, called the 'fast and frugal heuristics research program' (Gigerenzer *et al.*, 1999) and the traditional paradigm called the 'heuristics and biases research program' (Tversky and Kahneman, 1974). The latter framework interprets heuristics as inferior strategies for solving complex and structured problems. Heuristics are only 'shortcuts' in comparison to a rational and deliberative strategy. Thus, according to such a stream of literature, heuristic decisions are biased and characterized by intuitive/irrational thinking. However, for the purpose of this work and the nature of the context of entrepreneurship, despite acknowledging the existence of a traditional negative view on heuristics (Tversky and Kahneman, 1974), we consider this paradigm less appropriate and in a way outdated (Gigerenzer and Gaissmaier (2011).

information needed by recognizing the relevance and availability of environmental resources. Kahneman (2011) stresses how in particular circumstances individuals make a judgment by simply relying on the available resources and instances. For this first phase, the important element is the ability to find relevant and available information so as 'to grasp' the essence of the situation, which much resembles the entrepreneurial concept of 'alertness' defined by Kirzner (1973). Secondly, it is also important to understand when to interrupt the process of collecting information (*stopping* rules). Without this second element, heuristics would differ little from traditional approaches to decision making, which would imply a complete set of information. Finally, with such a set of alternatives, a decision must be made (*decision* rules); in other words, an appropriate strategy has to be devised. According to this decision rule, heuristics determine the way through which the final decision is attained. The logical sequence is as follows (see Figure 1): the entrepreneur recognizes the relevant and available information, stops when such a satisfactory minimum level of relevant information is adaptively reached, thus allowing the most appropriate alternative to be chosen.

Insert Figure 1

A general example of this process in entrepreneurship has been expressed by Berg (2014) in relation to the decision of an entrepreneur on where to locate his/her business. Successful entrepreneurs base such decisions on setting a bundle of 'aspirational characteristics' of the location (*search*), and the process is interrupted as soon as a satisfactory level of such characteristics is found in a single location (*stop*). The final decision falls upon the first object found with such a satisfactory level of characteristics (*decision*). Surprisingly such a simple and frugal decision path was the most cited by all the successful entrepreneurs (Berg, 2014).

3. A theoretical framework for entrepreneurial heuristics

The aim of this paper is to propose an ethical decision-making model in extraordinary cases, i.e. for entrepreneurship, and then to develop an exceptional heuristic based on such a model. This model results in a ready-to-use tool that entrepreneurs and managers can use in their daily ethical decision-making process.

We modelled the decision-making process using Westberg's (1994) interpretation of the Aquinas thought on human acting. In Westberg's framework, the decision stage, or the decision-making process in managerial terms, is formed by two consequential steps (see Figure 2); the *judicium* (the judgment), which may be seen as the perception and evaluation of the alternatives available in order to solve a problem and be cognitive in nature, and the *electio* (the choice), the real choice or the final decision about presumably the best solution which is instead considered to be a willing act (*S.Th*, Iª-IIae, q.13, a.1-6).

Insert Figure 2

Thus, in order to construct a complete model, an analysis of both moments is necessary; in this perspective, we used the *gnome* concept, a minor virtue of PR, such as the virtue that informs the judgment step that has already been associated with a kind of entrepreneurial perspicacity (Pellegrini and Ciappei, 2015, p.770). *Gnome* guides the judgment step in extraordinary cases by eschewing the ordinary decisional criteria and individuating universal principles, which are effective also in the particular contingency. Instead for the step of choice, we used the philosophical concept of genius elaborated by Kant in his third critique *(CoJ*), specifically focusing on its *modus operandi* which is able to combine and re-shape judgment criteria, thus giving an 'innovative' rule to the *status quo* (*CoJ*, 5: 307; 174; see also Battersby, 1998; Proulx, 2011).

Even if *prima facie* the Kantian ontology espouses with difficulty the traditional virtue ethics and the Thomistic paradigm, in a recomposed model of entrepreneurial judgment for extraordinary

cases, we may see a possible continuity. The following paragraphs will give a full account of these two elements, and the explanation of a possible final composition.

3.1. Practical Reason and its minor virtue gnome

A consistent number of contributions have successfully used the Aristotelian and Thomistic traditions with a specific focus on PR and the decision-making process (Buchholz and Rosenthal, 2005; Bastons, 2008; Dunham, 2010; Grassl, 2010; Melé, 2010). The virtue of PR is the disposition of character in finding a proper means to reach particular ends (Aristotle, *Nicomachean Ethics* VI, 5, 1138b24ff, 1968). PR is also considered to be a superior principle to face different contingencies and to discern the 'good' and 'evil' consequences of individual actions (MacIntyre, 1984). Thus, by interpreting the contingencies of reality and then ordering best actions, this virtue is rightly considered as to be central to any kind of ethical decision-making process (Melé, 2010). PR in the Thomistic vision is divided into integral, subjective, and potential parts (*S.Th*, II^{ae}-II^{ae}, q.48, a.1), which are all minor virtues of PR (for an extensive review of this topic see Bradley, 1997; Boethius, 1998).

The focus of this study concerns the potential parts that are specific and dedicated 'powers' or 'functions' of the principal virtue so they are directed to certain secondary matters and acts (see Figure 3). Within PR potential parts, *euboulia* or good counsel concerns counselling and finding the right means for the action; *synesis*, or common sense, concerns judgment in matters of ordinary occurrence; *gnome*, or perspicacity, concerns judgment in matters of exception to the law.

Insert Figure 3

Pellegrini and Ciappei (2015) have recently pointed out that entrepreneurial decision making needs to be based on the virtue of *gnome*. Such situations require a more 'sensible' kind of judgment since the contingencies are exceptional (extremely uncertain), thus the judgment too should be

exceptional. Indeed, *gnome* makes possible the application of superior principles, such as equity moderating and interpreting the norms in order to obtain fairer and better results when confronted with a special situation. In such cases, it is possible to disregard common principles and refer to equity or higher principles for the 'greater good' (Rodríquez-Luño, 1997).

Thus, it is quite straightforward that *gnome* is mainly linked with uncertainty and extraordinary (exceptional) cases, i.e. as much as entrepreneurship would require. It is important to stress that *gnome* is not a kind of neutral-moral perspicacity or being cunning that would not serve the purpose of PR, its 'mother' virtue but is the ability of the judgment to be fairer in exceptional circumstances (Rodríquez-Luño, 1997). Also, referring again to Pellegrini and Ciappei (2015, pp. 778-783), this virtue has a component of an intellectual nature, thus is partially moral-neutral, but at the same time it is possible to recognize a dimension named 'affective dimension' that instead calls for a consideration of the consequences in relation to others.

Concerning the application of this minor virtue to the decision-making process, its influence is limited to the first step of the judgment due to the pertinent function of *gnome*. Specifically in the analysis of PR and its potential parts (*S.Th*, II^{ae}-IIae, q.47, a.8, a.10, q.48, a.1), Aquinas assigned respectively the act of counselling to *euboulia*, and the act of judging to alternatively *synesis* or *gnome*, leaving the command act as the principal one of PR (*S.Th*, I^{a}-IIae, q.14, a.1). Hence, gnome informs the step of judgment (*judicium*), and thus the function of judging in a model of human action, when extraordinary circumstances occur. Instead, the choice step (*electio*), being an act of the will (Westberg, 1994), necessarily needs to be guided by PR. Willpower needs structure and order and this is an act of command, thus it requires the guidance of PR and not of *gnome* (*S.Th*, I^{a}-IIae, q.13, a.1; Cessario, 2002).

3.2. The concept of genius in Kant and its application

In our model, the step of choice (*electio*) is analyzed basing our considerations on the Kantian concept of the genius and its *modus operandi* elaborated in the third critique *(CoJ*). Such a concept recomposes the 'fracture' between freedom and nature that seems to affect all the Kantian

production (Proulx, 2011). Specifically, Kant defines genius as "the innate mental predisposition [*ingenium*] through which nature gives the rule to art" (*CoJ*, 5: 307; 174). Expanding this definition, the genius is seen as "a natural phenomenon, a result of nature's original productivity", and at the same time, "genius is the avenue through which nature becomes subject to rules that have their origin in human reason" (Proulx, 2011, p.35). This definition contains two important considerations about the genius concept. On the one hand, the genius is initially bounded by principles of nature, i.e. genius is a faculty given by nature. On the other hand, this consideration is valid only at the beginning of the process, when the genius is triggered. Indeed, once the action of the genius is accomplished, its creation may reshape the same natural principles from which it has been generated, thus creating new knowledge and a new set of rules (Battersby, 1998; Bruno, 2010; Proulx, 2011).

Building upon the first consideration, it must be said that the genius is triggered by situations where a judgment cannot be clearly assessed by using the predetermined set of rules offered by nature, or in other words, when the actual solutions offered by the *status quo* are not satisfactory, due to the uncertainty of the situation (Proulx, 2011). Specifically, in Kantian words, the genius is triggered after a reflective judgment, which tries to interpret and explain undefined situations (contingencies) by finding universal principles that may regulate the situation itself. Such a situation is opposed to the application of determinant judgments, the other category of judgments for Kant, which instead apply universal principles to contingencies (*CoJ*, 5: 386-389). Thus, the faculty of genius, despite being closely connected with the judgment moment, i.e. the reflective type, occurs after it and consequently cannot be a capacity of the proper *judicium* step.

The second consideration, i.e. the ability to reshape nature, is due to the characteristics of the genius of intentionally managing and manipulating various elements of knowledge, thus aiming at the creation of artistic outcomes (Battersby, 1998; Bruno, 2010). Therefore, the genius is a faculty of the will able to create and 'to craft' new solutions and knowledge for the situation and such outcomes may represent a new way through which future problems and situations will be assessed.

In other words, the genius can creatively shape new rules for action to adapt to the contingency (Gammon, 1997; Proulx, 2011). Sarasvathy and colleagues (2008) in describing the creation of Starbucks offer an exemplary case. Indeed Howard Schultz, the entrepreneur behind the success of the company, was able to create a completely new market for the coffee shops, out of the traditional successful elements of an Italian coffee bar, but that would suit the American mass market. Starting from a given situation, i.e. the tradition of Italian-style coffee bars, he succeeded in creating a new experience for the service, with chairs, a relaxed atmosphere and the introduction of flavored coffee beans.

However, a premise is necessary for the correct use of the Kantian concept of genius in a quite distant domain, such as that of business. Originally, Kant used the genius figure only for aesthetic judgments and highlighted the capacity of the genius to select new judgment criteria, thus giving the rules to art (*CoJ*, 5: 307; 174). In Kant, the genius gives a new judgment rule to art and differentiates from the artist, who instead follows the existing judgment rules (Gammon, 1997; Battersby, 1998). Some scholars (e.g. Bruno, 2010; Hall, 2014) argue that the faculty of the genius may go beyond mere artistic production, claiming that any time a new 'discovery' occurs from elements of knowledge not known and not simply deductible by nature, the figure of the genius could be recognized.. In this paper, we do not want to stretch further the object of the figure of the genius that is aesthetically or in the most extreme case, the scientific domain. Rather, we consider that its *modus operandi* characterized by the ability to create new sets of rules (Bruno, 2010), is what happens in entrepreneurial context as the start of a new venture and/or a new market. This is also the reason why, we did not venture into an extremely detailed analysis of the deontological approach of Kant to morality and ethics that is definitely not compatible with a virtue ethics approach, which instead is the baseline of our discussion.

The faculty of genius is linked to the step of judgment (*judicium*), because it refers to and uses judgment criteria, but it is excluded from the pure cognitive process because it aims to redefine of

these criteria to create a new set of rules that instead is an act of the will, and thus to the step of choice (*electio*).

3.3. Gnome *and genius recomposed into a unique framework*

Gnome and the genius seem to share some basic paradigms and similarities, even if philosophically speaking the two ontologies are difficult to be reconciled. Firstly, *gnome* operates a kind of judgment that is 'extraordinary', which can correctly judge exceptional cases, those that escape the normal rules of common sense where a higher sensibility is required (*S.Th*, II^{ae}-IIae, q.48, a.1). Similarly, the genius operates in similar complex situations, where a judgment cannot be exerted on common and predetermined rules, since the contingencies of the situation do not allow for an easy application of common judgment rules. For this reason, the genius seems to work in situations where the virtue of *gnome* is required as well. From a Kantian perspective, despite a completely different approach, a reflective judgment can be considered as 'extraordinary' (Gammon, 1997; Proulx, 2011) and cannot be assessed by the normal deductive mode. Thus, since a reflective judgment and a judgment based on *gnome* seem to have similar connotations, we can transitively assert that *gnome* can trigger genius too. More precisely, as we already stressed, *gnome* can trigger a PR with a genius' *modus operandi*.

Secondly, *gnome* activates the possibility for the agent to disregard the actual paradigm and 'common' rules in favor of an application of higher (moral) principles such as equity (*S.Th*, I^{a}-IIae, q.57, a.6 and II^{ae}-IIae, q.51, a.4). However, the action of *gnome* is limited to breaking or disregarding the ordinary rules and identifying the general principles without setting courses of action which have to be taken (*electio* step) since this step is reserved for PR. In our discussion, the *modus operandi* of genius seems in continuity with such processes directed by PR. Indeed, if PR would operate as described by the genius faculty, this creates a new set of rules and/or criteria of selection from both the generality of principles and the specificity of the contingent case. Thus, the

modus operandi of *genius* in a contingent situation is able to act by modifying the ordinary rules and identifying new decision criteria (Gammon, 1997).

Despite such similarities of *gnome* and genius and this possible continuity, we must stress that differences do exist. *Gnome* in Aquinas searches existing standards or higher principles imprinted in the soul (*S.Th*, II^{ae}-IIae, q.51, a.4; Rodríquez-Luño, 1997), while the genius of Kant builds new rules. However, both *gnome* and genius help to assemble elements of knowledge for decisions in extraordinary cases: *gnome* deals with the breakdown of the principles and genius deals with the reconstruction in order to create new rules. In managerial terms this means that *gnome* allows entrepreneurs to disregard their traditional mental schemata (Pellegrini and Ciappei, 2015), while genius allows the best and creative solutions to be found.

Despite the description of our model appearing to be moral-neutral, the presence of *gnome*, as a minor virtue of PR, assures an 'ethical' decision-making process. Indeed, *gnome* individuates universal decision criteria oriented toward the good, thus distinguishing between good and evil in extraordinary cases, where ordinary rules are not suitable.

Instead, the genius, especially its *modus operandi* is neutral; however if the universal concepts on which the genius works are identified by *gnome* then its action will also necessarily be oriented toward the good, creating an adaptively set of rules with ethical connotations. It is useful to stress again that while the presence of *gnome* guarantees ethicality in the whole decision stage, properly when the *judicium* step takes place and indirectly in the *electio* step through the action of igniting genius on ethical premise, PR is the only virtue that can assure an ethical behavior. In order to have ethical and virtuous actions, PR needs to be present in the implementation of the action, i.e. the stage of execution according to Westberg's (1994) model. In entrepreneurial contexts, we only stressed that such an act of PR assumes a *modus operandi* similar to that of genius.

4. An exceptional ethical heuristic for entrepreneurial settings

4.1. Integrating gnome *and genius into heuristics*

In the ethical model for decisions in extraordinary cases proposed here, *gnome* judges the extraordinary contingencies (*judicium* step), and the genius' *modus operandi* achieves the choice for the final decision rooted in the virtue of PR (*electio* step) (Westberg, 1994), as we have already presented. However, since our model aims to explain an entrepreneurial decision making that is based on heuristics (Busenitz and Barney, 1997; Read and Sarasvathy, 2005), especially from a fast and frugal perspective (Gigerenzer *et al.*, 1999), how are these two elements related to heuristics?

Gnome shares the context of application with the heuristics: uncertainty, complexity and extraordinary contingencies. Indeed, *gnome* is the mental habit that operates in exceptional cases (*S.Th*, II^{ae}-IIae, q.51, a.4), in which the normal rules stop working. In the same way, heuristics are one of the commonest methods to deal with unfamiliar and complex conditions (Gigerenzer *et al.*, 1999; Kahneman, 2011). In particular, fast and frugal heuristics allow entrepreneurs and managers to rapidly select and implement decisions with few clues and limited information taken in conditions of uncertainty and complexity.

The interaction between man and nature represents a link between the genius concept and fast and frugal heuristics. Indeed, the genius, according to the Kantian concept, is able to reconstruct a balance between personal freedom and the rules of nature. Similarly, from a heuristic perspective, the *homo heuristicus* adaptively interacts with the external environment combining his/her personality (Guercini *et al.*, 2014). Therefore, both genius and heuristics foster the strategic interaction between human freedom and the uncertain and complex environment, allowing for better adaptive solutions to unstructured problems (Artinger *et al.*, 2015).

Thus, a heuristic based on *gnome* and the genius' *modus operandi* allows the decision maker to stop the application of normal rules thanks to *gnome* and then allows the selection and creation of a new set of criteria thanks to PR that assumes a modus operandi similar to that of genius.

4.2. The exceptional ethical heuristics

Having explained the relationship of heuristics to the philosophical elements, *gnome* and genius, it is important to construct a 'ready-to-use' or 'practical' heuristic for decision makers (Artinger *et al.*, 2015) what we have called an *exceptional ethical heuristic* (Figure 4) .

As explained previously, heuristics are composed of three fundamental building blocks: *search*, *stopping* and *decision* rules (Gigerenzer and Gaissmaier, 2011).

The search and stopping rules, due to their nature, are included in the step of judgment (*judicium*), thus associated with *gnome*, while the decision rules are included in the step of choice (*electio*), and are thus associated to genius' *modus operandi* rooted in PR.

Insert Figure 4

Search rule (using gnome): Identify ordinary criteria for the specific decision and contingency, and evaluate their correct application.

Stopping rule: (using gnome) Stop when more than one criterion does not fit with the contingencies. Thus, from the ordinary criteria for the specific decision, ascend towards the related universal principles. Stop as soon as the connected universal principles for each criterion for the specific decision are found.

Decision rule: (using PR and the genius' modus operandi) Select the universal principles that are more important in the specific extraordinary case and from these define a new set of rules to make the specific decision.

A heuristic for extraordinary cases begins with a searching phase. Following the initial searching rule, this heuristic first of all needs to identify an ordinary or extraordinary case. In order to do that, the searching rules needs to find ordinary criteria for the specific decision and contingency. However, if the contingencies are extraordinary, these criteria are not appropriate. This searching rule is translated into a 'traditional' ethical evaluation exerted with common ethical principles. However, in this case, the scenario formed by a traditional judgment should seem to the agent to be

unfair and unethical. Thus, *gnome* in the searching phase stimulates the acknowledgement of unethical outputs caused by an 'ordinary' ethical evaluation. Building on Pellegrini and Ciappei's (2015, pp.782) elaboration, in this phase *gnome* scans "*initial symptoms, weak signals and hints coming from the circumstances*" and charges them of emotional contents.

Consequently, the circumstances require the intervention of the virtue *gnome* to stop the application of normal rules. As we said before, the action of *gnome* allows the derogation of the normal rules and the search for universal/higher principles that can guide the 'extraordinary' evaluation. In the stopping phase, *gnome* marks the amount of operational information needed by the decision maker (Gigerenzer *et al.*, 1999) to assess the exceptionality of the case. Specifically, the virtue of *gnome* identifies for each ordinary criterion for the specific decision, the possibility of application. The process is stopped when a fair amount of criteria does not respond to the contingencies of the situation. *Gnome* in this phase is able to 'imagine' and evaluate scenarios in which the ordinary rules are disregarded, referring to the universal/higher principles (Buchholz and Rosenthal, 2005).

In the deciding phase, genius, or to better say PR with a *modus operandi* similar to that of genius, selects the universal/higher principles that are the most relevant for the extraordinary contingency, and recombines them in order to create a new set of rules. This intervention of genius' *modus operandi* allows PR to have an adaptive response to extraordinary circumstances that is more effective than pure rational strategies, which are too focused on rules and larger sets of information.

Conclusion

The outcome of this paper is the development of a comprehensive model for entrepreneurial ethical decision making in extraordinary cases with a virtue ethics approach. As a result, we defined an *exceptional ethical heuristic* based on the ethical elements of *gnome* and genius' *modus operandi* rooted in the PR virtue.

This model could increase entrepreneurs' awareness of ethical concerns in the blurred conditions of entrepreneurship (Buchholz and Rosenthal, 2005; Dunham, 2010). Indeed, this paper stresses a

specific gap in entrepreneurship that faces extraordinary (extremely uncertain) cases and situations. The conceptual model is shaped in a heuristic that allows entrepreneurs to respond adaptively to contexts' uncertainty and extraordinary contingencies.

The main limitation of this work is related to using a mostly theoretical approach to sustain our claims. Further studies should employ our proposition regarding the *exceptional ethical heuristic* to test it in empirical settings and also test its adherence to reality. However, offering a theoretical heuristic rule can already be of some use for entrepreneurs as a guideline for their actual daily judgments.

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