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Entangled Entrepreneurial Competitiveness Advantage: An Opinion Paper

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Abstract

The economic action of any individual seems to be guided by psychological components belonging, often more to the sphere of the intuitive rather than to the logical mind. Cognitive Economics, unlike other critical approaches to neoclassical rationality, is aware of this reality and moves the center of gravity of the theory of the mind of the economic actor from the aspects of conscious, explicit, intentional, and rational towards the tacit, sub-conscious, intuitive and emotional. Cognitive Economics, as empirical theory, par excellence, does not refuse to consider the contribution of the mind to an economic decision. The role of the psyche in many situations of choice is undeniable. It is not, however, the only cognitive reality responsible for economic choices. From this point of view, the concept of limited rationality, remaining within a vision of intentionality in cognitive activities, loses much of its explanatory capacity. One of the motives for economic action is limited rationality because there is not enough computational capacity for calculating the consciousness and the intentions of the human mind. Rationality is also limited through the influence of intuitive, affective, emotional, and silent factors, which all characterize what we have called the intuitive mind. The economic actor's mind theory is based on cognitive duplicity, integrating the insensitive and the intuitive component depending on the situations and contexts of a decision. However, there are few situations in which we can say that the insensitive component takes the decision without influence of that intuitive. A small part of the mind emerges to the surface image of the economic actor, which characterizes some of the intuitive. But it rests on the larger submerged body of the mind, which is not visible but responsible for guiding the inferential paths of homo-economicus. The' cognitive economy assumes that this duality of the human mind and the primacy of the intuitive component explains economic action.

Keywords: Theory of Chaos, Complex Systems, Deductive Rationality, Psycho-Economy Themes, Persuasion, Decision-Making, Heuristic-Decision.

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Introduction

In 1995 Daniel Goleman published the concept of "emotional intelligence". In some respects, this term expresses an almost revolutionary concept because it has reassessed the traditional economic conception that almost exclusively attributed human capacities to the commonly known IQ, the intellectual dimension, and the weight it has on individuals and organizations to prepare them for success. Goleman has overturned this conception, saying that success is often linked to other variables, i.e., emotional ones. These statements are also supported by Salovey's and Mayer's studies (1989/90), who first introduced emotional intelligence from the earlier concepts of social intelligence and personal intelligence.

Later, the Nobel Prize for Economics in 2002 was awarded to Daniel Kahneman, a cognitivist psychologist, for "integrating the results of psychological research into economic science, especially on human judgment and the theory of decisions in uncertainty". Kahnemann contributed to enriching the economic setting

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traditionally based on the search for the state of the best by giving greater weight to non-rational determinants in the formation of economic choices.

This mutual commutation between psychology and economics enables a creative synthesis of the two disciplines, which can be profoundly innovative with respect to the methods used today for "doing business". Entrepreneurs, managers, consultants, and economics scholars could use new ways of using well-known tools or create and use completely new tools to manage the emotional part and integrate it with the rational one[1]. From here, an opportunity arises to develop a considerable competitive advantage for both individual and the enterprise because the emotional part, while present in each individual and every organization, has been largely overlooked in the study of cause-effect between choices, actions, and significant results.

According to some economics and finance experts there is a close link between the human choices we make every day and the lack of perfect disorder in the succession of certain data, which does not exclude, that human choices are an ineffable order, and that its complex secrets cannot be traced simply to the property of numbers but must be explored through understanding the theories associated with regularity and symmetry. In particular, research that was developed at the level of theoretical physics on the relations between these types of properties has fueled the conviction that it could be employed in the study of complex systems, whether organic or not. Especially when it comes to probability and statistics this kind of speech takes on proportions is not easy to formulate, since it is always difficult to develop "exact" laws.

From Analogies to Physics to Standalone Economic Theory

Physics naturally studies many phenomena, ranging from disordered complex systems such as ecosystems, neural networks, or financial markets. And here is the so-called economic-physical, a new branch combining finance, mathematics, statistical mechanics, non-linear dynamics and other more complex and difficult-to-use items. In a famous 1984 paper, Milton Friedman highlighted how the role of the economy as the economic agents was to predict phenomena. The referential probabilistic model was the Bayesian model, where the prediction of each phenomenon assumes a known and reducible margin of error. Once again considered rational, agents know the distribution of probabilities and act in a "learning model", which builds on insight from observable outcomes. Each phenomenon is thought to be correlated with a series of independent variables multiplying by estimated coefficients due to the data they possess, and which are usually their marginal effects. Quantum theory has introduced the idea of an irreducible error, different from zero, also with infinite remarks[2].

In ideal conditions, while controlling for any variable, the scientist cannot predict a given phenomenon with certainty as it can be manifested in different forms. If, as mechanistic theories suggest, it is hypothetically possible to predict by 100% the trajectory of a ball by checking for any internal error in the system, the same cannot be said for an electron, capable of bending even in ideal conditions. The unpredictability of human nature is an excellent parallel in social sciences: while controlling for any independent variable, the margin of error of the coefficient cannot be reduced to zero because the actions of individuals are not predictable. With Heisenberg, human knowledge has found an inescapable limit[3]: the product of the probability of velocity and position of a particle is equal to a constant − man will never know them both. In this case, to observe the particle, the scientist interacts with the system and changes its initial condition.

"We cannot define as perfectly objective any observation. It is as if we were introducing elements of subjectivism into theory, as if we wanted to say: what happens depends on how we observe the facts".[4] The figure of the scientist observing the system from his ivory tower collapses definitively, and in the economic and econometric field the consequences are innumerable. Choosing one regression rather than another, one model rather than another often reflects an a priori assessment of the economist, influenced by its values or assumptions. Though he is professing himself objectively, with his choices the scientist influences the final result.

[1] Simone, H. (1955). Un modello comportamentale di scelta razionale. QJ Econ, *69*(1), 99-118
[2] Arkady Plotnitsky: 28 maggio 2016 https://doi.org/10.1098/rsta.2015.0239
[3] https://www.jstor.org/stable/42964712

[4] Shapere, D. (1982). Il concetto di osservazione nella scienza e nella filosofia. Filosofia della scienza, *49*(4), 485-525.
[4]Cavaliere, Randall. Fisica per scienziati e ingegneri: un approccio strategico. San Francisco: Addison Wesley, 2004.

A second implication of Heisenberg's theorem lies[5] in the exclusive choice between the number of variables included in the econometric regression and the accuracy of the coefficients of each variable due to a finite variation of observations: by increasing the number of factors we can approach a description more complete than the phenomenon, but we understand less how every single variable determines the final outcome. Since the data we possess is not inconspicuous and there is no realization of error-reducing to zero, the choices of an econometric are often bound to this limit and he is aware that he will never be able to explain completely and without no margin of error is a given social phenomenon.

Newton and Heisenberg represent two different but complementary approaches to economic theory. The rigor of formulas, systemic determinism, and non-biased analysis can achieve very little if not accompanied by the awareness of the limitations in predicting social phenomena and the probabilistic and empirical approach to them. Thinking about human beings in terms of science and mechanics is likely to be very restrictive as it tries to reduce economic phenomena to simple but unlikely equations. The way out of the dilemma is applying quantum entanglement to the human dimension by referring to people as "stories", information and emotions that interact and have memories of the past and projections of future intentions.

The Multiplicity of Economic Actions

Entangling quantum theory into the human dimension can best be attained through resonance consciousness. Resonance consciousness is like a spontaneous consistency in a swarm of 'agents' (insects, birds, ants, neurons, thoughts, feelings, and people who act under critical conditions) with behaviors suddenly appearing and disappearing magically. Agents can work in harmony as if they were a "single multi-agent entity", a multi-unit, an inseparable.

Let us say that we 'resound' with an idea or with another person when we share a series of unusually rich perceptions that imply that we are 'on the same wavelength' − another form of a metaphorical link to physicists' models. It is a common experience that often affects the strength and complexity of shared understanding. It is associated with successful interactions in couples and groups of people who share universally recognized experiences. Productivity and creativity are obviously strengthened by resonance and cooperative responses to an issue by which all parties in a group are affected[6]. Bill McKelvey has found that understanding the entanglement of quantum theory can shed light on the nature of the links between people and their impact on emerging order in organizations. In terms of human behavior, he explained that a high correlation between the stories of paired people would mean that they think in similar ways; a low correlation would mean that they go in different directions. McKelvey believes that the sciences of complexity can offer precious insights into the processes that define the conditions for emerging order in businesses, offering the potential to develop tools, techniques, processes, structures, and norms in support of a new "leadership science". It could help managers create the conditions for the likely emergence of effective behaviors without creating barriers that are often the result of a command-and-control management system.

A Novel Approach to Decision Making

Neuroeconomics is a highly interdisciplinary field of research which aims at building a neurobiological model of inferential and decision-making processes by integrating knowledge, methods, and results from many areas of mind research, including psychology, neuroscience, economics and artificial intelligence. Integrating these and many other sources evokes a broad articulation of the subjects of study relevant to neuro-economics and including theoretical and fundamental aspects of what motivates action (How should we rationally take and how do we make decisions? How Does Our Brain Participate in Decision Making?).[7] From there, surveying the neural base of reasoning has become the core nucleus of this discipline.

When we are faced with a difficulty − whether it is personal, relational, or professional − the first thing we can do to solve it is to use a strategy that appears productive, perhaps because it has worked in the past for such a problem. If the chosen strategy works, the difficulty is resolved in a short time. Still, sometimes it happens that our method does not work as expected. It will further intensify our efforts since we thought that the solution was still the most logical, obvious, or the only possible.

Heuristics save on cognitive energy because the processing is almost instantaneous, while the downside is that they can often lead "off-road" through gross assessment errors[8]. Although heuristics are not strictly

[6] Neurosci Biobehav Rev. (2020). Ott 3: S0149-7634(20)30565-0. [CrossRef]
[7] Turner, 2001; Cacioppo e Patrick, 2008; Gazzaniga, 2008; Fouragnan et al., 2013; Lieberman, 2013
[8] Gigerenzer, G., Gaissmaier, W. (2011). Heuristic Decision Making. *Annual Review of Psychology, 62*, 451-482. [CrossRef]

indispensable for our survival, they continue to act and activate themselves automatically in human behaviors through a function we call intuition (meticulously perceiving and reflecting). We also employ our heuristic kit even in the simple everyday events: every time we almost instantly say what we like and what not, we create an overall view of the situations we are in or the people we meet. Let us take decisions and make judgments that help us in the "understanding" of the chaotic world we are in. Since every decision-making process involves massive brain energy, our resilient economist brain constantly tries to optimize and balance the cost-benefit ratio so that the cost does not exceed the benefit.

Conclusion

Economic action is based on decision-making, for which we need both the powers of rationality and emotion. One way to combine the two is through heuristics. The principle justifying the existence of heuristics is based on the social cognition paradigm that human cognitive systems have limited resources and can use "tools" to simplify decisions and problems. Over the years several heuristics have been identified. Here we have especially focused on the heuristics of judgment, the heuristics of representativeness, availability, simulation, and anchorage and accommodation. These are very useful in "new" situations that create disorientation as they give the possibility of creating a first impression of the other or of the circumstances with which they come into contact and may lead to systemic orientation. However, they do not provide a solution to any problem. But by approaching a problem it with approximate and straightforward rules they can limit the effect of "tempted solutions" that do not work and often give rise to misunderstandings, evaluation errors, and behaviors with unforeseen consequences.

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