Reflections of Political Discourse in Economic Dynamics

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Abstract: In this study, we take an approach to the development of sustainable or consistent economic models, which is described through the interactions between political discourse and economics. We highlight the importance of language in both - political discourse and economy -, as an articulating element from real to monetary factors, and the indescribable characteristic of value, as something that is integrated into the cognitive linguistic process. We show, through a critical look at political and media discourses, that economic theories are different from practice, shedding light on scientific research into the nature of the interpretative value in economic theories. The elusive effects of language on the economy cannot be taken for granted or as ideologically static, because it is precisely the structuring principles of the cognitive linguistic process that act in the construction of information and value. The determinism arising from the legal-political discursive instance, which establishes values in advance through laws, speeches, and narratives, can serve as traps and ambushes for economic transactions. Volatility in transactions is due to the dynamic context of "real" reality rather than idealized reality and both realities can be discerned in the fundamental structure of language. Economic theories synchronized with dynamic reality can change the economic landscape in a way that directs economic models beyond theoretical knowledge. In this way they provide a synergy between theory and practice, merging them into an intuitive model like human cognition.

Keywords: Political discourse. Economy. Value. Linguistic cognitive process. Information.

1 Introduction

This article covers the interactions of political discourse in the economy, showing the importance of taking language as one of the elements of articulation between real and monetary factors. The awareness that decision-making, fundamental in economic analysis, results from a dynamic language process, is something new that cannot be discarded by economic science. Economics is a broad field, and it was decided to focus more closely into insights into the elusive effects of language that affect it. We emphasize the need to understand the elements that underlie the cognitive process when constructing information or making decisions, to help economists and technicians in intelligent systems understand the complex interactions in economic modeling.

While language can be taken as connected to the evolution of societies, we can observe that this same language under a process of accelerating information exchange (through artificial intelligence such as the Internet, social networks, smartphones) is capable of globalizing not only information, but also the economy. The growth of the market for financial options and opportunities, such as cryptocurrencies, has acquired the characteristic of globalized information as it is linked to cognitive linguistic processes, both of individuals and of intelligent systems. To generate decision-making, globalized economic information depends on theories, techniques and on the influence of unpredictable events. The rise or fall in the popularity of some influencers depends mainly on "good" or "bad" communication with the market, that is, their millions of followers who are also their potential consumers. News (false or not) exchanged on social media and the internet has a direct influence on decision-making in the economic market. Among the decision-influencing "news" are also political speeches and/or short phrases from someone prominent in their social role published on social networks. Prejudice and political faith interfere with the consumer's interpretation or adherence to information. These are some facts that justify the discussion about the influence of sentences and narratives from politicians and journalists in the economy of a globalized market. We highlight some causal factors directly related to the cognitive linguistic process, be it human beings or artificial intelligence.

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It is noticeable in some economic theories that the role of information has been considered "ceteris paribus" [1] or static. The existence of a mismatch between the economic model and reality is due to some economists do not knowing how to deal with dynamic aspects of the information they evaluate. It is common to find economic theories suggesting that economists operate with low or idealized/abstract information ("ceteris paribus"). The results of poor assessment of a given economic situation can be directly linked to the dynamic process of language, that is, an uncertainty arises from the dynamics of reality that the economic model, by working with static information, cannot resolve, leading to irrational or insufficient decision-making.

When it comes to language, it is expected that there will be a lack of knowledge about all its relevant elements. Language and economics are complex knowledge because they are always under continuous change. We suggest that decision makers know at least how the cognitive linguistic process (origin of information) that will give rise to a decision is structured. Knowing the dynamics of meaning/information construction can reduce risk and uncertainty, as the economist becomes aware of what is at stake and can better assess the situation. The cognitive linguistic structure responsible for the construction of information and its consequent decision-making is addressed in this article from a single structure present in the cognition of individuals and equally present in the cognition of intelligent systems. This leads us to argue that structural knowledge of cognition is a strategy to be added to economic theories. Thus, when economists must make choices, they will have at their disposal clarification about the dynamic functioning of the elements at play in the construction of a given information.

Showing the cognitive linguistic functioning shared between humans and artificial intelligence [2], we explain that there is an implicit role of information in economic analysis that has not yet been properly explored. We suggest investigating the impact of information on economic analyzes or decisions, considering that this information is exposed to the speeches of politicians and journalists.

We ponder the connection between political discourse and economic dynamics under an important link: the dynamics of language in the construction of information. Monte Serrat and Cattani [3] show that the semantic web invests in systems that work collaboratively. Likewise, in the science of economics, the formation of meanings is intertwined, uniting political discourse and the economy, under the complex dynamics of economic relations.

Understanding the processes that underlie the movement of the economy cannot disregard the dynamics of language/information. The speeches of a politician or journalist or even the analysis carried out by an intelligent system, none of this should be considered 'ceteris paribus'. In addition to technical skills for calculations, the economist needs a good knowledge of the principles that explain 'how' human language constructs meanings or information, which are not neutral and must have their consequences in the economy equally investigated.

It is inherent to the linguistic cognitive process that information interferes with the rationality of decision making [2] [4]. Economists tend to evaluate information as a limiting variable in decision making. Hence our concern with articulating Linguistics (Discourse Analysis) [5] with Economics. Government services of technical information considered relevant, dissemination of news about the economy or political speeches have effects on the public, on shareholders, on companies.

1.1 Preliminary considerations for the use of the cognitive linguistic process in economic theories

We cover some topics from Linguistics, Neurolinguistics and Social Sciences to show how the structural principles of language act in conceptual formation. Cognition, when organizing the stimuli that reach the central nervous system, makes use of two characteristics of the cognitive dynamic process: the axiomatic feature, related to the collection of stimuli coming from the environment, and the logical feature, which organizes these stimuli so that they are make them understandable [2]. Decisions in the economy are based on principles, regulations, and laws (logical characteristic of the cognitive linguistic process) and on elements collected from contextual reality (axiomatic feature of cognition). The articulation of both features guarantees the construction of consistent, sufficient, and updated information in any branch of science. Likewise, the dynamic process of the economy can integrate discursive events in the environment with logical reasoning in the construction of information.

Decision making as a cornerstone of economic science assumes that individuals make rational decisions. As we explained, two features of cognition construct information: the logical feature (preconceived value) and the axiomatic feature (value taken from the environment). This combination of features in the dynamic cognitive process adds unpredictability to decisions. The central nervous system (place where decision-making originates) is also the place (underlying structure) for economic dynamics that are under the influence of oral or written discourses.

Instead of bearing in mind information as something that has no role in economic theory (taken as 'ceteris paribus' or as merely part of an assumption), we propose a strategy that opens new frontiers for economic thought: considering that economy and language occur under the same structural dynamic process in the construction of meanings/information. The complexity of the cognitive dynamic process, in any scientific branch, involves interdependent elements, which act

as a 'form' and not as a 'substance' in the construction of information or in triggering a decision. This way, all information can be relevant and available to the decision maker. Knowledge is not just perfect and rational, and economists need to consider this to understand all the possibilities and consequences of their decisions and know how to deal with risk and uncertainty. A practical example of this are prices, which are not always determined by rational elements.

Economics is considered in this research in its general aspect of human behavior relating to the allocation of markets, goods, and services. Finance or financial systems focus on money management techniques and tools. Economics and finance involve the interpretation of information and it is for this reason that we focus efforts on showing "how" a piece of information is constructed, in order to evaluate its effects on the community.

The approach to the interactions of political discourse in the economy highlights the importance of taking language as one of the elements that articulates real and monetary factors. The indescribable effects of language on the economy cannot be taken for granted, for this reason Section 1 makes preliminary considerations for the use of the cognitive linguistic process in economic theories, showing that structural principles of language act in conceptual formation to guarantee the construction of consistent, sufficient, and up-to-date information in any branch of science. The economy as a complex system, driven by countless iterations is the theme of Section 2, which shows causal factors of the globalization process, with direct or indirect influence on markets, the economic growth of communities, their businesses, or investments. Section 3 is extended to address complex relations between the economy and the determinism arising from the legal-political instance (laws, speeches, narratives). Topics are developed on misinformation and incorrect interpretation; successful interpretation; traps and ambushes by the legal body in communications about economic transactions; informational uncertainty and volatility in economic transactions; dissemination of information impacting the economy; successful construction of meaning while avoiding biased information. The effect of institutions on the economy, in Section 4, is outlined through the comparison between two economic models and the dynamics of the cognitive process on economic information. The complexity of the economy makes it necessary to approach neoclassical and heterodox currents and to address price uncertainty. Section 5 shows the dynamics of the economy from a critical perspective, questioning why economic theories do not satisfactorily explain financial crises. We use interdisciplinarity to present a methodology that considers the reality of facts and theoretical content as two independent planes. To do this, we explain the regulatory role of the State and its corresponding influence on the economy; we show that laws and regulations are imaginary and that institutions interfere in the financial market by anticipating the meaning of the information. Section 6 addresses the financial market in terms of the dimension of value in the discourse, unraveling the regulatory role of the State. Value and interpretation are taken for granted, but we show "how" they are constructed and "what" this tells us about politics and economics. As the object of economists' desire is to reduce uncertainty, we conclude by showing how to structure an economic model that considers the timeline to decrease confusing elements in expectations and decisions.

2. Economy as a complex system, driven by countless iterations

The process of globalization reveals a very close connection with the evolution of modern societies. Since the 1990s, increasing globalization has drawn the attention of academics and researchers to its many causal factors, both endogenous and exogenous. What would have a direct or indirect influence on the markets, on the economic growth of communities, on their businesses or investments?

In recent years, several models have been proposed to investigate the influence on the market, such as the chaos theory. In fact, the mathematical theory of chaos studies the behavior of dynamic systems [6]. According to this theory, small changes in initial conditions result in diverse effects on such dynamic systems. There is, therefore, a sensitive dependence on the initial conditions, which is the so-called "butterfly effect" [7]. Chaos theory can be applied to various branches of science, including the branch of Economics. Due to the complexity of the financial/economic system, the butterfly effect can be observed in its impact on the market crisis. We can mention, in the last twenty years, five crises in the main markets: the so-called dotcom crisis of computer technologies - Economic theories investigate the dotcom bubble, 1992-2002, which made use of practices from the market industry's hybrid risk culture in communications [8]; the US subprime crisis - The crisis of defaulted subprime mortgages in the USA was related to financial institutions' poor understanding of the relationship between the fall in housing prices and the increase in subprime defaults [9]; the Lehman Brothers crisis - in 2008 in the United States provoked cross-border influence on the Euro system's monetary policy measures due to a quantitative impact on interbank access and volume [10]; the reluctant Chinese Dragon crisis - Cycles of crisis in Chinese politics due to the alternation of competing elite groups triggered economic crises in the country [11]; the Covid-19 pandemic - caused a global recession, causing a 3.5% loss in the global economy in 2020 [12].

In a complex system like the Country's economy, the influence of a single parameter (causal factor) apparently small or

initially neglectable, (like the flapping wings of a butterfly) might have in a short time some nonlinear consequences on the economy, and the society. The analysis of these changes, and mechanisms behind, can be shortly, although unproperly, defined as economic dynamics, for the ontological similarity with dynamics in physics, which is based on the Aristoteles' principle of cause and effects.

A complex system, among which we can consider the dynamic system of the economy, must be understood: i) as a system as something abstract or concrete; as something elementary or compound; as something linear or non-linear; as something simple or complicated; or as something complex or chaotic, according to the classification mentioned by [6]. As for complex systems, they are built from many mutually interacting subunits (these subunits can also be composite). The interaction of these elements results in collective behavior that feeds back into the behavior of individual elements [6]. Chaotic systems, on the other hand, have their elements interacting in a way that produces very complex dynamics [6]. The behavior of a chaotic economic system may appear random, but it is generated by simple deterministic, not random, processes. According to Rickles et al.[6], the complexity of a system is revealed in its dynamic evolution, that is, in the way it undergoes changes over time, driven by numerous iterations.

When it comes to a country's economy it depends on several intertwined factors, including a balanced trade, government budget, and economic activities determined by investment in a given period of time, among others. This article discusses the effects on economic dynamics of politicians' speeches or comments published in national and international media, such as newspapers, TV, radio, Instagram, X (former Twitter), among others. We investigate the interference of a politician's or a journalist's speech in the plausibility of relationships between economic variables. We wonder if this speech interferes with intelligent systems designed to evaluate the dynamics of the economy.

The development of a country's economy occurs under a structural dynamic process like that of the cognitive linguistic process. Language and economy are subject to fluctuations arising from the legal-political instance expressed through speeches or narratives. Language and economy merge whether in oral or written speech, whether in media reproduction or through an intelligent system of a politician's speech. These situations deal with the representation of reality, that is, the real facts of a country's economy are filtered by the cognitive linguistic system. We show in this article that if we clean away the complex layers of discourses, whether written or spoken, a single structure remains, the universal structure of language [2] [13]. This structure helps us understand the dynamic process in its fundamentals, therefore helping to understand why political speeches cause reflex effects on the economy. Using Linguistics resources, we can explain the functioning of human language, whose context of reality changes the meaning of sentences. We highlight structural linguistic elements (i.e., present in both human language and the language of intelligent systems) that link the words of politicians or journalists to economic statistical data. The discursive analysis that we carry out in this article explains how this connection occurs to the point of causing interpretation biases in humans and in the interpretation carried out by artificial intelligence, AI [13].

3. Political discourse in economic dynamics

The complexity of economic dynamics leads us to place a focus on some elements that structure society. Among them is the economic base under the influence of the legal-political instance expressed in laws, speeches, or narratives. The legal-political instance and the discourse (everything that is written or spoken) form "a unity that a complex determinism achieves" [14] (p. 70).

3.1 Misinformation or lack of information leading to incorrect interpretation

An example of the complex interrelation between finance and information is the case of North American banking institutions that granted loans without real guarantees [15]. These institutions interfered in the economy by not clearly communicating the information that interest rates would increase over the years. An obligation has been created that has a debt as a side effect [15] (pp. 9-10). This phenomenon has spread around the world: "The problem was not limited to the United States only, due to the fact that many banks built financial products based on real estate loans from the United States, which were later sold worldwide in large quantities" [15] (p. 11). This is just one example of the dynamics of the economy associated with language.

3.2 True and false information and the most successful interpretation

The structure of the cognitive linguistic process is able to give us direction for an analytical procedure that helps us relate the following elements: (i) the language used in texts or spoken speeches articulated to social roles (who can say and what can say in a society such as banking institutions, politicians, journalists, etc.); (ii) the linguistic mechanisms that construct intelligible information; (iii) the way semantic processes occur (either the law imposes a meaning in advance, or the meaning is collected from the context, according to the theory of discourse analysis) [5] [16](Pêcheux, 1975, 1988).

The narratives expressed in political or journalistic discourse carry in their load a 'ready' discernment (in the sense that the interpretation is already directed towards something) regarding the nature of real events [5] (p. 9) [17].

These narratives presuppose the "notion of reality in which 'true' is identified with 'the real'" [17] (p.10). This phenomenon necessarily arises from the existence of a legal-political system connected to the legality or legitimacy of journalistic political authority.

We can simplify these ideas by stating that when we bring the dynamic behavior of the cognitive linguistic process closer to the behavior of the financial market, it becomes possible to identify the same structure that acts building an information. It can be observed that the externality/context/statistical data overvalued by legal or journalistic bodies influences the valuation of information (true or false, good, or bad), be it language or the analysis of financial market data by AI.

3.3 Legal instance traps and ambushes in communications about economic transactions

For now, we highlight that the legal instance is conceived as a communication system made up of norms (whether norms that regulate politics or norms that regulate journalistic activity), to allow the realization of a specific system of production and economic and social [18] (Chapter 1). The term legal instance in this article encompasses social institutions with their social practices.

It is important to point out that the legal authority dominates the entire social organization [14] (pp. 95-97), and that nothing escapes the Law. In other words, the legal authority (who has the competence, according to the Law, to say something and to determine what each person can say) is what establishes a 'certain value' to the information [19] (p. 136). In this topic we shift the importance of political or journalistic information to consider the behind-the-scenes of how the meaning of information is produced by society (State, government, journalists, media, artificial intelligence). We now focus on the dynamics of language when constructing meanings, as it is through language that the dominant class maintains the reiteration of crystallized processes, causing a "constant return to the same sayable space" [19] (p. 137). We show that there is a dynamic functioning of the cognitive linguistic process that alters the information construction processes, biasing them.

The legal instance imposes a dominant meaning. The set of production relations, as the economic structure of a society, is under a legal and political superstructure [14] (p. 66). Citing Marx, Miaille [14] (p. 67-69) clarifies that society is structured in three levels: economic, at its base; the legal-political level and the ideological level. They are autonomous bodies that act differently in different societies, with their own logic, mechanisms, and institutions. The author [14] (p. 70) explains that, although autonomous, these instances are not independent: "they have a unity that a complex determinism achieves"; they have "a structural causality" [14] (p. 74).

It is in this structural space that the legal body acts, interfering in social relations: power/no power dictates the behavior of subjects (juridism), as the social issue cannot be thought of without the political issue. Coercive power is historical [20]. However, due to the dynamics of the cognitive linguistic process, we can understand that the meanings are replaced at each moment, giving rise to information different from that imposed by the political or journalistic instance.

3.4 Information uncertainty and volatility in economic transactions

Another concern regarding the construction of the meaning of a piece of information is its volatility. According to Serapica [21], volatility is not only the characteristic of liquid and solid elements passing into the gaseous state, but it is also a term used to refer to economic variable in the science of Economics. Serapica [21] states that in finance related to financial assets (stocks and derivatives), volatility is a measure of the variability of the price or return of a financial asset. Its negative value is due to uncertainty about future value, contrasting with the stability that the capitalist system would need to grow. In our research, volatility, in its aspect of uncertainty regarding the effects of information on economic analysis, could be the result of the complex relationship inherent to the structural elements of language expressed both in journalistic discourse and on social networks.

There is volatility in the economy because it is under the discursive effects of complex elements rooted in the production relations of society's economic life. Understanding this volatility is difficult to grasp due to the intricate relationships between the legal and political superstructure and the various forms of social consciousness [14] (p. 66). Lagazzi [20] (p.15) relates this phenomenon to Locke's lesson in which man originates from the equality of his "state of nature", but the "invention of money" and "the attribution of a value to it by tacit consent and voluntary'", leads to the unequal distribution of wealth. Although the economic level is the basis of society, the legal-political level acts in a fleeting, transient way, but with a complex determinism that presents itself with a 'structural causality' [14] (p. 70). It is in this volatile space that language/law/legalism and the valorization of actions or decision-making are worked to determine social relations [18].

Uncertainty in information may also arise from the assessment of the economy in which the State could be summarized

as a steady element. Even though it is known that the economy is dynamic, some economic models insist on considering the predetermination of a stationary State corresponding to constant variables and shocks set at zero. It follows an outdated model that, by appreciating generic, neutral, and frozen-in-time elements (parameters such as standard business cycle models, physical capital depreciation rate, productivity process coefficient, among others) does not keep up with changes in fluid and dynamic reality.

3.5 Valuing the dissemination of information in the economy

Lavoie [22], when discussing inflation in post-Keynesian economics, presents a distinction with conventional theories. These theories give great importance to the notion of equity and justice, customary rules, or market forces. Lavoie mentions that these elements have an impact on the perception of salary and price. Having said this, the author [22] (p. 547) highlights the issue of information transmission, mentioning that the notion of justice in conventional theory, for example, is a relative issue to which there is a need for comparisons. Comparisons, according to the author, require information about, for example, company profits, industry profits, salary structure, negotiated agreements, value of benefits, and so on. Lavoie [22] (p. 547) states that some post-Keynesians recognize the importance of information diffusion in the economy.

Following this line of reasoning about the importance of information on economy and the influence of language/discourse/law, why not reflect on the consequences, for a country's economy, of the information provided by a politician? This can also cause pressures or changes in inflation rates, prices, and wages.

One may suspect, assuming available information is correct, that the larger the set of information, the larger is the potential for inflation. When information is generally incorrect, better information may reduce rather than increase inflation pressures. For instance, the information to which the ordinary person or the ordinary union member has access is usually biased. The media have a tendency to publicize only the most spectacular and most outrageous wage deals, contributing somewhat to the inflationary forces by providing a biased informational content of wage Post-Keynesian economics spillovers. [22] (pp. 547-548)

The European Central Bank, ECB, [23] explains that the prices of goods and services, from the perspective of the market economy, are subject to change. Some prices rise, others fall. The phenomenon of inflation occurs when there is a broad increase in the prices of goods and services, and not just individual items. Under inflation, we can buy less for one Euro today compared to yesterday. Inflation, therefore, reduces the value of currency over time.

Price changes vary in their importance, and there may be an increase in products that we use most, such as electricity, in relation to products on which we spend less, such as sugar. Technicians in the field or intelligent systems measure inflation considering the goods and services that families consume (items of daily use, durable goods, services). What would be the consequences in the economic evaluation if technicians or AI considered in their calculations the disastrous speech of the President of a country, or of a publication in a national newspaper? How can we explain the relationship between this discourse and inflation? We suggest that the cognitive linguistic activity of constructing meaning should be considered.

3.6 Successful construction of meaning from information

While Lavoie's [22] (p. 548) inflation theory argues that biased information occurs due to existing limits for information to be processed in a world dominated by rationality, we consider the foundations of the cognitive linguistic process to explain the causes of the unwanted bias. The successful formation of the meaning of news or speech (true or false) can be like data mining or knowledge discovery, as long as one is aware of the cognitive linguistic structure that underlies this process. The main steps are: i) in data collection, the language used cannot be taken for granted. The entire context in which information was generated must be taken into account in the analyses; ii) pre-processing and cleaning, that is, integration of contextual data that underlies the formation of collected data and removal of redundancies; iii) processing, that is, organized in a way appropriate to the context from which the data were taken, they are ready for evaluation and information extraction; iv) post-processing, that is, visualization of information with choice of the most appropriate form to make the information more attractive.

It is possible to find, in the universal dynamic functioning (process) of information constitution, the 'key' to deal with the constitution of the meanings of an information. The cognitive linguistic structure operates "any process that alters the mutual relationship of two or more things" [24] (pp 122-123). If the attention of the economist or technician dealing with AI algorithms applicable in the economic area remains only on changeable symbols, their reasoning on the interpretation of economic dynamics is limited.

Researchers on economic theory are trying to circumvent the deficiencies of their theories, founding heterodox schools, and carrying out political and empirical analyses. There is a need for a deep understanding of mathematics and economics in these complex tasks. The link between economic theory and language theory can help to find the causes

of instability in the economy arising from political speeches.

We intend to convince readers that there is an alternative to interpreting economic dynamics precisely because we are dealing with the origins of information. Dealing with information requires being more eclectic and collecting elements from different sources, such as Linguistics that we propose here, leading to productive debates.

4. Effect of institutions on the economy

In this section we discuss two economic models of interaction with society. We show the different influences of the dynamics of the cognitive linguistic process on economic information and on the difficulty of predicting, in the long term, the evolution of the economy. We clarify that the economy is not just about access to raw materials or energy. It has an expanded range covering complex elements such as, for example, environmental preservation, climate change, global warming, and it is worth mentioning, among these elements, the effects of institutions and information and communication technologies on the economy [22] (pp. 579-580). Lavoie [22] comments that the economy lacks a theory of the State, focusing on production and not the complementarity of other factors on the complex functioning of economic relations. This lack makes it very difficult to predict the long-term economy that would strengthen prudent decisions.

4.1 An overview of theoretical currents in Economics: between neoclassical and heterodox schools

It seems important to know the two schools of thought in the science of economics before addressing aspects of the interpretation of information.

The neoclassical school focuses on the individual agent, optimization, technical dexterity, and resource allocation [22] (pp. 577-578). According to the author, this limits the evaluation of economic events. The heterodox school, in turn, makes use of methods more acceptable to the social sciences, which provides the opportunity to be informed about alternative economic traditions.

For Lavoie [25], in Economics, the comparison between heterodox and neoclassical schools requires an approach based on global assumptions. It is possible to differentiate the neoclassical approach from the heterodox one through four methodological categories. In neoclassical theory, we find: instrumentalist epistemology (science of learning); methodological individualism; unlimited rationality (noun); and the exchange economy based on the scarcity of goods. On the other hand, heterodox economics emphasizes realism; organicism (holism); procedural rationality; and the production economy. Regarding the scope of this article, the reality of the context and the rationalities of the schools under study are compared considering a political element.

When confronting organicism versus methodological individualism, it is possible to affirm that the "heart" of neoclassical theory is the individual, the economic agent. This is notable in the new macroeconomic reconstruction of neoclassical theory, which requires microeconomics to represent the atomized agent. On the other hand, in the heterodox view, individuals are beings belonging to the world and society, influenced by the environment, including culture and social class. Organicism (holism) is the pillar of the heterodox approach. In this way, institutions should not be perceived as imperfections or impediments to the market system, on the contrary, they are important for the stability of the economic system taken as a whole [25].

Regarding the comparison between procedural rationality and substantive rationality, Lavoie [25] states that the neoclassical theory understands economic agents as endowed with absolute or substantive rationality. This understanding is unfeasible because it presupposes an individual with almost unlimited knowledge to calculate economic results. For heterodox economists, in turn, rationality is limited or procedural since institutions and individuals have limitations in acquiring information. In this case, when dealing with economic issues, individuals follow rules and norms dictated by institutions, in order to reduce problems arising from uncertainty.

It is also important to mention the concept of fundamental uncertainty, characteristic of the post-Keynesian school. It can be said that the preference for liquidity is linked to this concept. Contrary to what neoclassical schools say, the future is uncertain and unpredictable. Fundamental uncertainty defends the idea of historical time and limited rationality [25]. Finally, according to the post-Keynesian fundamentalist, Paul Davidson [26], it is better to describe the real world with some approximate accuracy, than to describe an imaginary world with great accuracy. We would just like to point out here that historical time, rationality, imaginary world and concepts and theories result from the cognitive linguistic process, the structure of which we expose in this article, showing how information is constructed and the way in which information interferes with human or machine interpretation.

4.2 Pricing uncertainty

The need to protect against uncertainty in the financial market is a topical problem which continues to be urgent.

Although this article does not deal with index creation of implied volatility, we highlight the importance of the cognitive linguistic process in constructing information about Economics to circumvent uncertainty. The cognitive linguistic process, whether human or machine, is updated in real time, creating meaningful effects in conjunction with the environment. In addition to perceived volatility, the implicit volatility of the meaning effects of political and journalistic speeches must be considered. The simultaneous approach to perceived and implied volatility innovates by bringing the critical perspective of language into the study of Economics.

Uncertainty or volatility in economic studies is valued and priced by some authors, especially the uncertainty arising from investment decisions in the financial market. John Maynard Keynes [27] explains that there are two relevant rates in the act of investing: the marginal efficiency of capital and the interest rate. The first refers to the expected internal rate of return, and the second refers to the opportunity cost, that is, the alternative return provided by the investment. Thus, according to Keynes, for the entrepreneur to decide on his production, the profitability of his investment must be greater than the interest rate.

Hyman Philip Minsky [28], post-Keynesian economist, when studying this subject in relation to the behavior of the financial market, chooses to study prices instead of rates. For him [28], the use of prices, due to capitalization, among other elements, makes it possible to introduce uncertainty and the preference for liquidity in a more assertive way.

Capitalization makes it possible to update what is expected to earn. For Minsky [28], what determines the capitalization rate is the expected income flow and marketability. Therefore, when comparing, for example, a machine and an asset (public security), it is possible to state that the second is more liquid than the first. In this way, the relevance of negotiability (relative liquidity) stands out. It is liquidity that allows "uncertainty pricing" to be carried out.

Serapica [21] mentions implicit volatility in market prices. It is called implied volatility because it is unobservable and due to its indirect derivation through market prices of options. The volatility function is calculated by the difference between the market price of an option and its theoretical price [21]. The author [21] cites an innovative financial instrument as an example of preventing percentage fluctuations in volatility, sigma index, which can be constructed both with historical volatility and with implied volatility.

5. The dynamics of the economy from a discursive perspective

Considering the financial market from a discursive perspective is a necessity in economics departments. Lavoie [22] (p. 584) mentions that the new generation of students is disenchanted with the courses offered because economic theories do not explain the global financial crisis. Although our article does not offer "the" solution to this discontent, it partially meets this need because it directs economic theory towards interdisciplinarity. Our articulation of Economics with the cognitive linguistic process [2] and with the critical analysis of the social and political context [14] [18] meets the students' call for pluralism and thinking qualitative in the science of economics. We hope that in this way new options for economic analysis will emerge based on the structures underlying the information collected, optimizing evaluations.

French discursive analysis [5] [16] is the methodology used to approach the content of this article. When theories in general state a problem and analyze its content, they do so in such a way as to consider the reality of the facts and the theoretical content as two independent planes. The theory of Discourse Analysis [16] teaches us to assess the problem and its context under a simultaneous analysis. In this case, the social conditions that gave rise to the problem studied are evaluated together with the problem that resulted from them. Between the theory that proclaims the independence of conditions in relation to the reality that generated the situation, and the discursive analysis that evaluates the situation together with its production conditions, there is a methodological and theoretical impasse. All the problems in content analysis stem from this impasse. Simply theoretical practices for analyzing economic dynamics cannot escape circular reasoning, without reaching a solution to an issue.

Discourse Analysis [5] [16] critically analyzes science as being supposedly "neutral", proposing that it be seen from an epistemological perspective beyond the idea of transparency and idealism. The methodology of Discourse Analysis, AD, understands political power and its function of dictating to regulate social behavior as a way of producing a social functioning that reproduces the State. Miaille [14] (p. 17), rejects thinking limited to describing what is visible, removing the one-dimensional character of descriptive science to consider real facts and to point out new ways of analyzing facts, thus moving away from the idealism of explanations theoretical and ideological (belonging to this or that current of thought).

5.1 The regulatory role of the State and the corresponding influence on the economy

Monte-Serrat [18] (pp. 293 et seq.) explains the connection between Law and State, showing that both characterize politically organized society, since the relations between individuals must be disciplined establishing what is lawful, what are the rights, the obligations, faculties, and powers concerning each citizen. The norms have an abstract character

and can configure models of conduct that must be imitated or are models of conduct disapproved by society. Complex social relations involve conflicts of interest, and it is then up to the State to determine what is the appropriate conduct in a specific case. For this reason, the representative of the State, be it President, Prime Minister, or Minister of Finance, has a direct causal relationship in the behavior of the financial market when making statements regardless of the citizens' agreement. A country's journalistic body is considered the 'longa manus' of state power. Both politicians and journalists enjoy rights before the State and, on the other hand, their functional activity is regulated by the State [18] (p. 293 et seq.).

The set of regulatory rules for the financial market is dictated by the State with roots and consequences at the national level. Market management follows an imaginary dimension that is not always in line with popular policies and depends on discursive activity to convince citizens to join programs that protect the internal market at the expense of citizens' rights. The causal relationship between market rules is set apart from the existence of the State (which is responsible for the common good). In this way, market rules are seen as just another competitive relationship, motivated by complex issues that can have negative effects on the citizens. Journalism, normally disregarded in economic calculations, is a 'longa manus' activity of the State [29]. We are referring to the State's ability to exercise its power or influence through agents, representatives, or institutions. Under this line of reasoning, we can infer that there is an extension of State action connecting public management to activities carried out by other bodies (health, education, transport, among others) that work to achieve objectives of public interest. In the case studied in this article, many economic transactions are carried out under the influence of news (media, television, newspapers as indirect agents of the State) that concern the activity, opinions, and statements of politicians.

Milei and Giacomini [30] (p.7) mention, for example, negative aspects of the government's coercive intervention in the market. Thus, according to the authors, "income policies" establish the monetary price of goods below equilibrium, which generates excess demand, disrupting economic activity in society. Another harmful government interference in the economy, according to Milei and Giacomini [30] (p. 7) are exchange rate controls in open economies because, when there is a loss of reserves, government control sets the price of foreign currency below the current market price equilibrium.

In this article it is not possible to address all politicians' statements, or all information published in intelligent systems. We focus on some official statements, pointing out words that indicate polarity, which configure the 'root' that gives the main meaning to the declared information, whether by the politician, or by the journalist, about the economy of a country. This information, based on values previously placed by the politician or journalist, will produce positive or negative effects on the behavior of the financial market [31]. This effect not only arises from the political-social context but is also linked to the dynamics of language when constructing information (language in its structure is covered in Section 6, explaining how information is constructed).

5.2 Laws and regulations are of imaginary record

Miaille, [14] (p. 90) relates the "form of value" and the "legal form" in the legal order of capitalist society as a resource that allows to hide real relationships in the legal imaginary: "The law designates and displaces real problems at the same time [...] When perceived, the law does not say what it should be, it already says 'what it is' ".

The use of a standard element makes one believe that this is a source of value. It is at this moment that fetishization comes into play: I attribute to the standard element a quality that seems intrinsic (mandatory, imperative), just when this quality belongs not to the element but to the type of relationship, the real social relationship of which this norm is an expression [14].

Milner [32] and Serrani [33] explain that language is linked to the three records established by Lacanian psychoanalysis - real, symbolic, and imaginary [34] [35], establishing relations of similarity and dissimilarity within a time frame or space. These relationships are in the imaginary record, according to the authors. Pêcheux [16] (pp. 128-129; 119-125) states that the imaginary record masks any epistemological discontinuity, covering up ideas and establishing, in their place, a material efficacy to the imaginary. Quinet [36] (p. 126), in turn, affirms that the imaginary is the register of consciousness and of meaning, capturing the multiple in the forms of unity.

5.3 Political speech

For Orlandi [37] (pp. 244; 247) the imaginary and symbolic act in the form of an institutional discourse constitutes a ritualized discourse whose meaning is given in advance.

Political discourse is an example of institutional discourse that interferes in the financial market due to the anticipation of meaning that it imposes on information. As we explained in the previous topic, the order of language relates reality and imagination. White [17] explains that the narrative (whether from a politician, a journalist or from artificial intelligence) has the role of continually replacing meaning. The narrative performs the pure and simple copy of events,

mediating conflicts, arbitrating them, or resolving them. This is how political discourse, laws and regulations give the financial market a structure, a previously established order of meaning (established in the imaginary record of theoretical or legal content). This previously imposed meaning, therefore, does not result from the mere sequence of historical facts (real fact or environment). The concept of 'value' for the financial market arises from the theoretical discourse of scholars, either from law (through the imposition of rules) or from politicians representing government institutions, adhering to the same set of values.

6. The financial market: dimension of value in the discourse versus the dimension of the regulatory role of the State

Understanding the complexity of the financial market necessarily takes us to the lessons of Karl Marx in his work *Das Kapital* [38]. Marx [38] argues that merchandise, because it is material, satisfies man's needs, acquiring use value. Merchandise can also be exchanged, simultaneously acquiring exchange value. These two factors transform merchandise into commercial wealth that has use and exchange value [39]. Marx [40] (TII, p. 162) conceptualizes value as something inherent to the 'functioning' of the bourgeois 'system'.

While Marx [40] explains physiological values within his theory, we, in this article, explain that values are related to the physiological functioning of the cognitive linguistic process, which is the origin of the construction of meanings that make us understand the world. Value and interpretation processes are generically taken for granted, but we show 'how' they are constructed and 'what' this reveals to us about politics and economics.

The structures of the linguistic process operate value to establish meaning [41]. This process deals with logical patterns and patterns taken from the context, to, in the end, give rise to semantic values that may be detached from the context (idealized values from static elements; immune to historical variations) or can be strictly connected with the dynamics of the environment (context from which the elements were taken to serve as a basis for interpretation). There is therefore a dynamic (physiological functioning of cognition) that generates interpretation which may or may not give rise to decision-making [2] [13] [41]. A theoretical model can establish that value can be limited to a pre-established legal standard (logical standard), or the value can be conditioned to a dynamic situation in the environment. In this way, the interpretation of a given value can result from a cognitive process supported only by logic (equipped with static principles and rules set in advance) or supported by the dynamics of a contextual reality (in which several elements are considered in the present time to generate the interpretation or decision).

Value (economic or semantic) is not something entirely indifferent or external to the dynamic context of human relationships. It is part of the cognitive linguistic process (or of the "functioning" of the bourgeois "system 'by Marx [38], whether of man or artificial intelligence. If value concept is taken in a generalized way, that is, as a generic or idealized recipe for the conditions of a given socio-economic context, it misses the peculiarity of its dynamic context. This leads to the freezing of meanings, interpretations, and decisions, which become anachronistic, or a "type" of value or interpretation linked to certain elements, and which is doomed to disappear. We consider value concept as linked to the linguistic process, to a 'way' of constructing information in any scientific branch. In this article, value is not associated with an abstract concept, but rather with an exchange dynamic process between abstract theories and rules and the context of a specific event.

Values emerge from a behavioral pattern in market dynamics. The foundations of value are in the behavior of cognition, which constructs meanings based on value-dependent selection, as taught by Friston et al. [42]. The authors [42] show that the cognitive linguistic process is regulated by sensation and reaction – namely the adaptive value of behavior. Such value, reflected in neural value systems, interferes with the modulation of behaviors and the circuits relevant to these behaviors [42]. Cognition not only responds to signals from the logical feature of the cognitive linguistic process, but also responds to stimulus inputs from the environment [2] [13] [31]. The logical and axiomatic characteristics of language structure are responsible for changes in the synapses of the central nervous system [2] [13], in charge of producing meaning, information and possibly triggering decisions. This dynamic process that makes value emerge is, therefore, the basis for evaluating human behaviors, whether social, economic, or resulting from interaction with intelligent systems.

6.1 The two characteristics of the cognitive linguistic process as a bridge to understanding the value dimension

Monte-Serrat and Cattani, [2] describe the universal structure of language through two characteristics: a logical characteristic (which logically organizes stimuli from the central nervous system so that these stimuli are understood) and an axiomatic characteristic (which collects stimuli from the environment and carries them to the central nervous system). Human cognition depends on the articulation of these two characteristics. The axiomatic and logical fronts of the cognitive linguistic process are responsible for the interpretability of the environment. If data collection from this environment is manipulated in its logical aspect or in its contextual elements, this will lead to biases in interpretation [13].

The way interpretability naturally occurs in neural networks [13] helps us clarify the behavior of value-dependent modulation in economic dynamics. If economists give preference in their evaluation to the logical feature of language (theory or regulation that establishes a previously given value), they make decisions detached from a dynamic context. On the other hand, if they privilege the axiomatic characteristic of the language (which evaluates the environment through statistics) they make decisions according to the dynamic context (noting that those decisions may be subject to bias if the data collected from the environment has been manipulated) [13]. Cognitive value systems imply behavioral sequences and interfere with decision-making, whether human or an intelligent system's [2] [13] [31].

The logical side of economic theories and regulations are well explored so far. We propose that economic modeling does not take dynamic context as something given or static. The context interferes in the evaluation and decision. As an example of this, we have Tommasone's [15] (pp. 50-51) report on the role of context in risk assessment. He mentions, for example, that individuals who purchase corporate bonds issued by the private sector are exposed to greater risk than those who purchase public bonds guaranteed by the government. The price of securities may be subject to fluctuations and if investors sell them at a market price that is lower than the purchase price, there will be a loss.

Friston et al [42] use a synthetic neural model to illustrate the value-dependent acquisition of a behavioral response to a visual stimulus (elements given by the environment). The authors explain that the value system of neural networks is plastic and is therefore capable of mediating values collected from the environment/context. In neural networks, interpretability is a behavior of cognition that is subject both to the exposure of cognitive activity to logical reasoning and to statistical data arising from the environment.

In the case of using statistical data, their manipulation will condition the intensity/density of the information, reflecting on the interpretability and, consequently, on the behavior of both individuals and intelligent systems. According to Friston et al [42], discriminative responses correspond to value-dependent receptive fields. They (op. cit.) consider that in the temporal dynamics of learning there is a transfer of responses from the value system from one sensory modality to another. Monte-Serrat and Cattani [2] explain that, as it is structural, the dynamics of cognition with its values are not restricted to any sensory modality. We also consider that the appreciation of value, as it has its origins in cognitive activity, is not tied to a specific scientific branch, but is a behavior perfectly applicable to the interpretation made in any branch of science, including economics.

6.2 Dimension in which the determining factor of interpretation is given in advance

The State, as an institution with normative power, establishes norms that dictate values in advance. This semantic or discursive dimension of the State places it as a producer of prior evidence. In other words, the State has the power to configure 'a priori' a dimension in which a certain 'value' will capture people's attention. In this way, the State is exercising the function of showing or hiding elements to, in the end, designate a space for interpretation about what can and cannot be interpreted [18] (p. 235). We suggest that this strategy designates the semantic or discursive space in which the financial market is constituted. Grunig [1] (p. 34) gives this phenomenon the name 'institutionalized minds' through habitual assumptions that they acquire and take for granted.

This is a phenomenon that harbors polarity. If the influence of the State dimension is positive on the market, there is a bullish position (market growth, upwards). If the State dimension offers negative factors, it will cause a bear market (downward).

Pastor and Veronesi [43] assume that governments define the rules of the game (rules created a priori) in which the private sector operates. This affects companies in collecting taxes, providing subsidies, determining compliance with laws, regulating competition, defining environmental policies etc. The authors [43] also state that when governments change policies, they trigger price reactions in the financial sector, with a weak reaction when the change is anticipated, or a strong reaction if markets are caught by surprise. Financial market values, then, change not only according to the set of previously established values, but also with the advent of unforeseen events.

The economy, according to Grunig [1] (pp. 32 et seq.) does not only accommodate rationality, but also conditions of uncertainty. Rationality ends up structuring in a simple way situations that are complex and cannot be controlled. Economic, social, or legal institutions may harbor some deductive methods of economic theories for some time, but they do not explain really day-to-day (axiomatic aspects) economic performance. Static (logical aspects) theories deal with adjusting values to a static situation taken for granted, and not a dynamic one like the economy.

6.3 Working on a dynamic process in economic modeling instead of expanding rationality

Grunig [1] (p. 36) warns that it is not about expanding rationality in economic theories. Even if there is rational behavior, this is not enough to circumvent the perception of reality under various operational objectives.

The complexity of the environment and the dynamics of relationships go beyond theories. We propose to understand all the determining factors related to the economy beyond rationality (which is just one of the characteristics of language),

encompassing the context (axiomatic feature of language) as well.

The dynamics of the cognitive linguistic process (shared by human beings and intelligent systems) constructs information, which may or may not trigger behavior or decision-making. We are not talking about static theory, but about a dynamic process that relates rationality (logical feature of the language) to statistical data collected from the environment (axiomatic feature of the language). Rational theoretical models are suitable for simple operations, with a simple objective. The complexity of the environment with dynamic changes implies knowledge about mechanisms and processes [1] (p. 35). It is in the dynamic interface we suggest the economic models be carried out.

The rationality of an economic model is based on decisions usually taken by the individual. When we talk about designing the economic model on dynamic processes, it means that the decision is based on information retrieved from the crossroads between a relevant object and an unknown/unforeseen element. We refer to a dynamic process between awareness/interpretation, decision, and action in a certain space of time focused in reducing uncertainty.

Shonkwiler [44] addresses the virtualization of capitalism explaining that there is a financial imaginary (based on logical reasoning) that regulates troubled and abstract relationships. This social imaginary, dependent on laws and institutions that give value in advance, was described by Monte-Serrat [18] in its role of constructing meanings detached from the reality of the environment.

Science with its own statute and methodology [45] illuminates and guides the knowledge of reality. However, science is not reality, but it is just the abstract domain of theory added to the tangible domain of practice. Theory and practice belong to separate domains and the connection between them is carried out through a tense process situated between abstraction and application. For Einstein "in theory, theory and practice are the same thing. In practice, they are not".

We emphasize and make this very clear: the critical truth practiced in comparing theory and practice is just a framework for a common understanding to be shared. The rational and abstract nature of scientific investigation interferes with the interpretative value in any discipline, including economic theories. Monte-Serrat [18] shows that the logical aspect of cognition has the function of forming a set of abstract values, idealized through theories and laws, placing these values within a virtual dimension, which is the symbolic dimension of cognition. Laws and rules (symbolic dimension), therefore, trigger the construction of idealized (abstract or virtual) meanings/values that are detached from the 'real' reality.

Despite laws regulating the market, it is possible to observe that the context interferes in an economic model. By designing a simple asset pricing model, Pastor and Veronesi [43] were successful in showing both the role of the government (abstract rules) as an active decision maker in domestic and foreign markets, as well as the influence of the media and the speeches of (context/environment) in financial markets. The authors make it clear that some words used by politicians intentionally caused the market crisis.

The influence the media and political or journalistic speeches (taken as environment) impose on financial markets can be related to the toxicity of their words or to their intentional negative influence on the market, causing a crisis. Sovereign states have official pages where speeches by their representatives such as prime minister or president are published. Let us assume that if a certain State enacts a new law simultaneously with a certain event, this contextual 'coincidence' can result in market fluctuations in the following days. This can be described as follows: in Speech 1 the main words used were 'employment', 'future', 'technologies' and 'investments'. A subsequent internet search on what the market was like during the three days following Speech 1 may reveal: i) that the market was (+++), meaning that on the first day it was growing (+); ii) on the second day it was growing (+); iii) and on the third day it was also growing (+). If another speech is studied, Speech 2, for example, whose main words were 'employment', 'future', 'technologies' and 'stagnation', the result of the market research in the subsequent three days could be: i) (- - +), means that on the first day the market shows itself downtrend; ii) on the second day it shows downtrend; iii) and on the third day the market shows itself uptrend. A set of analyzes on the relationship between published speeches and market behavior reveals that the discursive context (and not just logical regulations or theories expanding rationality) has the effect of positively or negatively interfering with market performance.

The sciences that deal with the concept of 'value' in complex structures are involved in a challenging task, as 'value' cannot be taken for granted. The concept of value arises from the procedural dynamics of cognition, which is responsible for linking it to more than one characteristic of the same evaluated entity. The economist or researcher who assesses entities' values will qualify them according to different positive or negative categories, depending on the context in which the analysis is carried out.

This argument about the connection of (i) financial system, (ii) previous determinations (of laws or regulations), and (iii) unpredictability (such as that resulting from political or journalistic speeches), to financial balance has its bases on the structure of the linguistic cognitive process. This cognitive dynamic structure exists in humans and intelligent systems, establishing, as its function, values and meanings when constructing intelligible information. This strategy

focused on the fundamentals of language help to clarify the information behavior/ decisions made in the financial area. Although the unexpected cannot be predicted, mathematics and the structure of language shed light on the relationship between economics and value, and can also be useful in developing artificial intelligence, AI, tools.

7. Conclusion

We show in this article that practice, taken as social influences, institutions and the social roles of politicians and journalists, interferes in decision-making about the economy together with regulations and laws (theory). We explain the origins of the influence of the social and political system on cognitive activity, which is carried out in any scientific branch. In economics, the cognitive linguistic process (with its logical and axiomatic dynamic characteristics) is affected in the construction of economic information.

Events interfering in the economy are something expected by economic theories; however, their causes are not always revealed. We show that when an economic model is based only on logic, it does not follow the dynamics of factors generated from the speeches of politicians or journalists (considered here as a long manus of the State). Politicians and journalists occupy positions of influence in the community, so why not consider them as participants in the process of constructing inaccurate information that leads to biased decisions?

Considering positive or negative effects for the market is not only related to something anticipated (a set of values or abstract rules, for example), but is also related to the uncertain dynamics of life in society (the context of 'real' reality). The value worked in an economic model, therefore, cannot be defined as something static or taken for granted.

We highlight that contemporary capitalism works according to imaginative conceptions of the context (abstract or frozen conceptions of reality), which are called "financial realism" [44]. In this case, it is a paradox in which what is 'real' is something 'presupposed', assumed in advance by laws and regulations. Reality, however, is unpredictable, dynamic, changing all the time, not adjusting to an abstract concept and frozen in the timeline. It would be very naive to consider 'assumptive financial realism', that is, an abstraction, as the only cause of impulse or change in the functioning of the stock market. Although the concept of 'value' is an amorphous characteristic, which escapes a fixed material form and operates in a field of abstraction that is difficult to understand, it is necessary to consider it in some way in the economic model, because, in the financial sphere, it operates as an omnipotent force. This force is identified as something that stands out from historical predictions by bringing new concerns about the loss of autonomy or control over alignment with market temporalities. The value that emerges from contextual dynamics overlaps and can contradict the economic virtue advocated in a system assumed a priori (abstractly, ideally), as is the case with the influence of presidential speech on a country's economy.

This clash between the fragmented and disorderly reality of financial practices and the supposed unity of financial practices brought about by rules and regulations shows that the concept of value is of the symbolic order (linguistic cognitive process) through which not only language, but also finance operate. Shonkwiler [44] shows that financial capital is less an explanatory structure of how the world economy works, and more an imaginary set of narratives considered "neutral", which are loaded with global symbols to apparently justify the health of the market covering unpopular political guidelines.

Although complex and abstract, the process of constructing any information by the cognitive structure (shared by individuals and machines) may or may not trigger decision-making. This interdisciplinary approach that brings economic models closer to the cognitive process can serve as a complement to economic theories, so that they are able to explain the influences of political or media discourses on the dynamics of the economy. It is expected, therefore, that economic or financial market scholars can recognize and evaluate all factors, including discursive ones, in the development of decision-making models.

The assessment of the economy must, therefore, be carried out considering that it integrates a dynamic process and must be estimated in its temporal dimension. Theories that suggest modeling considering static parameters are doomed to error. Differences in elements, political roles and social pressures interfere in the decision-making process. Economic appraisal uses information that, in turn, is generated by the dynamic cognitive linguistic process of both individuals and intelligent systems. An economic model, to be sustainable over a period, must therefore consider the articulation between the fundamental elements of cognition: logical elements (from theories and regulations) and contextual elements (collected from the environment of the phenomenon under analysis).

An object of economists' desire is the reduction of uncertainty in their models. Although they may have less than perfect knowledge at hand, the task of structuring the model according to the foundations of human cognition helps to reduce uncertainty, improving the understanding and accuracy of the decision maker's expectations. Instead of, on the one hand, making use of the extension of rationality, which can lead to the idealization or freezing of dynamic elements, the articulation, on the other hand, between rationality (logical element of the cognitive linguistic process) and context

(axiomatic element of the cognitive linguistic process) will lead to an intuitive decision based on experience, adapting the economic model to a given context or situation. This strategy deals with an information processing mechanism linked to temporal dynamics, which helps the decision maker to be more efficient. This has immediate implications for decision-makers in the economy, as they are subject to the evaluation of market and service information, legal authorizations, technical reports, and oral or written government acts. For them, information that reduces uncertainty is more valuable because it reduces confusing elements in expectations and decisions.

When it comes to economic theories, principles and rules describe how the economy works, providing part of the framework for understanding the dynamics of the economy. Economic analyzes that disregard data collected from the discursive dynamics of people who occupy a social role of "being able to say" something to society (political and media speeches, for example), become obsolete and frozen under a "capitalist idealization". This situation is comparable to that of a skeleton devoid of muscles and blood in the context of 'real' reality. We consider that the economic panorama can change by directing models beyond theoretical knowledge, to develop a model adapted to the dynamic reality of events. A model that articulates frozen theory, on the one hand, with everyday practice, on the other, exemplifies the synergy between theory and practice, merging them into an intuitive model such as human cognition.

Conflicts of Interest Statement

The authors certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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