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Enactive Economics: Interactionism, Social Cognition and Epistemic Horizons

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Abstract

This paper introduces a new economic methodology, starting from an enactive and intersubjective aspect of the economy. The economic agent is a process-in-time, has a unique epistemic horizon that tends to evolve as new autonomous processes of interaction appear. The whole economic reality is composed of economic agents situated in a cognitive institutional framework, this phenomenon allowing them to interact, assign meanings and expand their epistemic horizon. This dynamic and intersubjective vision emphasizes the heterogeneous nature of entrepreneurial perceptions, which will translate into specific actions, constantly in potentiality.

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I. Introduction

Current economic theories remain strictly focused on the mechanical aspect of the economy, assuming the existence of a homogeneous economic agent with static preferences in a context of general equilibrium. This simplistic view hides the possibility of relevant economic analysis, social phenomena having a marginal role in the infallible decisions of economic agents. These infallible decisions come from the very assumption of constant actions, which are not changed in time. This means that decisions and economic activity take place in isolation, outside a social framework, without taking into account the possibility of changing preferences and perceptual or epistemic horizon through interaction. In what it follows, I'll use perceptual and epistemic terms interchangeably.

In contrast, in this paper, an enactive intersubjective economic model will be proposed, starting from the possibility of active interactions in time. Instead of looking at economic agents as static elements, without the possibility of influencing the economic process, in this model, the social world is dynamic, constituted by autonomous interaction processes. Social cognition is the result of a dynamic process between the active economic agent, which has a unique epistemic horizon and thus allows him to imagine a fallible plan and to attribute a meaning to this plan, and the enactive social world, in which the economic agent was situated and in which we find perceptive differences. This evolutionary model is based on eminently interactive and social-economic agents, each interaction process assuming active interconnectivity between two lived bodies, but also the possibility of extending cognitive processes as a result of this dyadic process between economic agents in a socio-normative context. Economic agents have a fallible perspective on the world, given the limited set of prior experiences, and this perspective changes as the number of interactions evolves. Therefore, we also say that the perspective of economic agents is first- and second-person, but not third-person or observational one.

Thus, we can say that the economic agent has fluctuating preferences but also a perception from a unique standpoint, which emphasizes the evolutionary and dynamic character of a real economy. As such, starting from an enactive framework, each economic agent participates in the generation of meaning.

Economic agents constitute social phenomena through a constant process of interaction using their own lived body. It is important to emphasize the lived body because cognition is not strictly a mental event but emerges from different interconnected processes between the brain-body–social-world. Cognitive processes are based on a variety of bodily and emotional factors that actively participate in the emergence of unique perception, and this perception will be used for the emergence of new future cognitive processes in a continuous circular relationship. "The relationship between human beings and the world, like the relationship between human beings, is interdependent" (Alerby, 2015), which means that human beings are active elements of the social world. They are participating in it, not just standing in it. This process is possible due to the fact that any action involves more than the activity of the brain, namely the lived body, which facilitates the ongoing sensory-motor interaction between the epistemic horizon of the economic agent and implicitly a type of action and the social environment. We spoke, hear and perceive through embodied processes, not through an isolated brain. And this process takes place due to the socialization of the economic agent in a socio-normative framework.

Economic agents can be understood as active bodies that initiate actions starting from a selective interpretation. This capacity of interpretation underlines the hermeneutical and historical character of each action. Each economic agent has a series of unique experiences that allow him to attribute his own meaning to a social phenomenon. Therefore, "*the relationship between objective economic variables (...) and the expectations of individuals are dependent on the interpretation that agents provide to them*" (Bellet & Durieu, 2004, p. 236). As the flow of experiences is unique, we understand that each economic agent has a unique perception, and this temporarily limits his ability to act, which means that two economic agents cannot have an identical past and therefore cannot have an identical entrepreneurial vision. But precisely, these temporary limits demonstrate the possibility of an ex-post error. Since there is no possibility that a subjective perception includes all possible experiences, the economic agent will make decisions based on an incomplete epistemic horizon. But these limits can be overcome due to the historical character that derives from the subjective interrelation between the past – the present – the future of the economic agent.

Thus, the perceptive ability can also be understood as an evolutive phenomenon, each new experience being added to the present perceptive ability in an active way, which expands the ability to understand a social phenomenon in a different way. And this new capacity will

represent a new t0 moment that will act on the future knowledge. In other words, perceptive capacity can also be understood in terms of circular causality, in which "*perception is the source of memory, but also the product of memory*" (Fuster, 1995, p. 87). Each experience becomes complementary to the already existing knowledge, which improves the perceptive horizon of the economic agent and thus allows him to initiate new types of entrepreneurial actions.

The economic agent is a process-in-time, cannot be perceived as static or with homogeneous preferences. It goes through a constant stream of embodied and intersubjective experiences that act on his epistemic, affective and perceptive capacity, and the existence of real-time facilitates this stream. This real-time is heterogeneous, psychological and subjective. It represents an interpretive binder, connecting all the temporal moments to each other. At the same time, it highlights the importance of memory in any future decision and the possibility for subjective expectations to evolve. Thus, "*each phase of time as lived is differentiated from its predecessor and its successor*" (Boettke, 1994, p. 114). Every temporal moment acts on perception and implicitly on expectations about an entrepreneurial act. In other words, "an experience is not (...) just something that flows past quickly in the stream of conscious life" (Gadamer, 2004, p. 66), but is a phenomenon that acts directly on the economic agent.

At the same time, this temporal evolution is non-linear. Each new experience will represent an uncertain phenomenon, and you can never know exactly how it can influence our ex-post expectations or the degree to which it will. Thus, the capacity of interpretation is not temporarily limited, but it is unlimited as new experiences arise. Therefore, it can be said that the economic agent is a continuous process, which experiences and interprets new activities, becoming complementary to those initiated by other economic agents in an intersubjective framework. And the active passing of real-time creates the economic agent's novel and unpredictable situations, hence the evolutionary character of the economy.

As the active passing of real-time facilitates the existence of distinct experiences of economic agents, they do not passively adapt to an objective, pre-established reality. "*Organisms do not passively receive information from their environment*" (Fuchs & De Jaegher, 2009). They do not produce representations or predictable binary processes but develop fallible and selective interpretations based on historical experiences and genetic and cultural construction. Each economic agent uses its lived body to interact socially and contextually but also to assign

subjective and contextual meanings to phenomena or objects. Therefore, the world is not pre-established but is the result of social processes of interaction. Thus, the world "*is not a pre-given external realm represented by the brain*" (Fuchs & De Jaegher, 2009), but is enacted in the light of one's own knowledge. At the same time, this historical capacity to assign meanings presupposes autonomy in relation to the social world. It cannot represent a determining factor of the action but strictly an enactive and implicitly coordinating context. Thus, the continuous interaction within the social world emphasizes that our cognitive processes "*has to be in view of their role in worldly contexts where they acquire meaning rather than as a representational mapping (...)*" (Gallagher, 2019).

The economic agent has" *(...) freedom from the environment*" (Gadamer, 2004, p. 441), he decides to interact subjectively according to the expectations he has. As selective interpretation is intertemporal, we understand that any direct interaction with an economic agent with a different set of experiences allows us to obtain new interpretations of phenomena or objects, observing a new way of acting. Thus, "*every sensation must (...) be regarded as an interpretation of an event in the light of the past experience of the individual or the species*" (Hayek, 1952, p. 166). In the absence of interpretation, we would have a homogeneous and static agent without variable preferences. But it is precisely the uniqueness of the interpretation that allows us to understand the necessity of subjective action, directed only towards certain purposes, using a fallible epistemic apparatus.

"*In the brain-body-environment system, changes, or adjustments to the neural processing, will accompany any changes in your body or the environment, not because of the isolated brain infers such changes and responds to them in a central, command-mode, but because the brain is part of the larger embodied system that is coping with its changing environment*" (Gallagher & Allen, 2018). THIS means that the perception of the economic agent is related to the evolution of social and implicitly individual circumstances. In other words, there is a dynamic process by which the human body constantly adapts to new experiences, and these involve the integration of neural processes, incorporation into certain social practices and the very possibility of extending the epistemic horizon. That's why "*the idea of the environment is a necessity to the idea of the organism, and with the conception of environment comes the impossibility of considering psychical life as an individual, isolated thing developing in a vacuum*" (Dewey, 1884). Each experience is socially situated, there is no isolated social object or event, but these are always part of a perceptive situation, of a social world. The very

possibility of intentional action lies in the prior socialization of an economic agent, this socialization being an essential characteristic of entrepreneurial processes. And being part of a social context, we are in potential intentional relationships with other economic agents, goods or events, having the ability to act on them, especially when we emphasize that our pragmatic interaction with them allows us to perceive their meaning. Therefore, the possibility of action means that an economic agent is in potentiality, being infinite, each new action having the ability to lead to change in perception and implicitly to the entrepreneurial processes.

II. Cognitive Institutions and Enactivism

Each economic agent is socialised and situated in a social and normative institutional framework, which is a mechanism "that organise social, political and economic relations" (North, 1990). From birth on, an infant's body goes through embodied interaction processes, having the ability to imitate facial expressions. These interactions may facilitate the occurrence of the primary and the secondary intersubjectivity, which "*consists of the innate or early-developing sensory-motor capacities that bring us into relation with others and allow us to interact with them*" (Legerstee et al., 2013, p. 60), by which the infant is placed "*into cognitive habits that shape all further learning, and that become linguistic practices that are further educated in all other social institutions*" (Gallagher & Hutto, 2008). The institutional framework is historical and evolutionary, based on the historical past of a social group. For example, if social group A developed in a region where the risk of natural disasters predominated and resources were lacking, the prevailing values of the group were formed around a long-term time preference, a specific social capital and so on, which sought to reduce potential risks. And these group values were the basis of social institutions - of markets - which are organised around these values.

This institutional framework is both enactive and interactive and represents the background of the markets. Markets are not only rigid mechanisms through which information is processed, but these are evolutionary socio-cognitive structures that actively participate in the formation and development of the economic processes between economic agents. As we discussed, each interaction is embodied, but also affective, emotional or epistemic. All these bodily factors lead to the complex behaviour of the economic agent, which actively participates in the expansion of cognitive processes through interaction. Each decision taken

by an economic agent will be reflected in a specific action, such as the sale of an asset, which means that the entire economic activity can be understood as situational, in relation to other active market participants, and never in isolation, because each decision is made in an intersubjective framework, depending on the already existing social institutions. At the same time, any such decision has the ability to enact the market due to the interactionist nature of the economy. For example, each transaction will change the relative price structures, the price being a social institution. Based on that, these relative price structures extend the cognitive processes of economic agents. In their absence, the very possibility of intentional acts in the market is completely missing. We will come back to this issue. Thus, the unanticipated development of social cognitive institutions and the social incorporation of the economic agent in these socio-normative cognitive structures facilitate the emergence of economic processes.

Cognitive institutions "*are not only institutions with which we accomplish certain cognitive processes, but also are such that without them, such cognitive processes would no longer exist*" (Gallagher et al., 2019). These institutions can be understood as socio-cognitive and result from intersubjective interactions embedded in a normative framework. In other words, "*what counts are the external structures that constrain and enable economic agents*" (Gallagher et al., 2019), but not just individual preferences. Thus, all processes of social interaction are regulated by these dynamic institutional structures. In other words, no economic process can be understood outside a social world, and any economic process is socio-interactionist, whether we purchase, sell or produce a good or service.

Thus, as we have seen, markets are based on the historical and normative institutional framework. This means that markets are not just coordination mechanisms but cognitive and active structures, without which we could not discuss the emergence of economic processes. There is, at this point, a mutual influence, the interactions unintentionally solidify the institutional framework, but these interactions could not take place without this framework. A good example would be the law system. "*Legal institutions are constituted in a mutual and dynamical pattern of interactive social processes and practices (constituting 'legal' cognitive processes) enacted by individual agents or groups or other institutions*" (Petracca & Gallagher, 2020). This legal framework is crystallized from the normative principles that guide the social world, and in its absence, economic processes could not take place. Thus, continuing the analysis, we observe that institutions have two main roles. First, this

institutional framework represents a constituent element and allows activity in a social world in which cognitive processes are constantly expanded. Second, it constrains the potential actions of economic agents, as it happens with a legal agreement, "*which is in a real sense an expression of several minds externalized and extended into the world, instantiating in external memory and agreed-upon decision, adding to a system (...) that transcend the particularities of any individual's mind*" (Gallagher, 2013). In other words, contracts are an institutional, conceptual extension, which is the result of prior cognitive processes, but also an element through which future cognitive processes can be modelled, behaviours can be structured, rules can be established and so on. Socio-cognitive institutions are not the result of a single human mind but are dynamically interconnected with the environment and with the interactions of economic agents in a generative way. Through them, economic agents can communicate, expand their perceptive horizon, which facilitate the emergence of new capital or consumption goods, services, innovative technologies, all contributing to an increasingly complex entrepreneurial process.

Thus, we constantly reconstruct institutions through our embodied and intersubjective processes, but we also constantly engage with them, which allows us to expand the cognitive processes already existing. Coming back to the price issue, for example, each interaction, such as the sale or acquisition of an asset, will be reflected in another essential social institution, the price institution, each interaction having an active effect on the future development of markets, economic agents now giving a different interpretation to economic processes, which will be reflected in the modification of entrepreneurial expectations, depending on the existing epistemic horizon. This means that prices and, by default, the markets in which these embedded economic exchanges take place are elements that enact social interactions. And these prices will represent a way of perceiving the economic reality and making fallible decisions based on them. In other words, without these cognitive institutions, there would be no rational economic processes, no entrepreneurial calculation, in which one can observe the behaviour and time and liquidity preference of economic agents.

These relationships are par excellence, intersubjective, prices and markets exerting a certain influence on economic agents, but also being modified by the interactions between them. The interactions that take place within socio-cognitive institutions are both integrative and symbiotic. Markets become active with each transaction. Only through this engagement between the economic agent and the environment can we observe how the entrepreneur

epistemically benefits from the existence of other prior entrepreneurial relationships and the initiation of other intersubjective interactions, i.e., past prices or goods. Thus, we can say that markets are a reflection of the normative-historical context of society and are in a continuous evolution following normative and epistemic interactions.

But at the same time, the present goods or services also exert a certain influence on our cognitive processes, understanding, for example, that the complexity of the present capital structure imposes certain temporary limits on potential production, and only through interactions with entrepreneurs with another social and economic perception can we overcome these limits.

Following this experience, we can have a different perception, to act distinctly, and at this point, we exert a new influence on social cognitive processes. Thus, each production process is carried out intersubjectively, the means of production being chosen after mutual incorporation with another economic agent, in which we find another affordance, hence the idea of symbiotic interaction. As such, for enacting social and economic active interactions, we need a historically developed institutional framework with a cognitive component.

III. Epistemic Evolution and Dynamic Interactions

Any entrepreneurial act is based on an embodied and enactive intersubjectivity. Each process of interaction leads to the emergence of a social understanding, and this understanding is fluctuating, depending on the dynamics of the interaction. In other words, intersubjectivity can be understood in the form of dynamic intercorporeal interaction processes that facilitate the emergence of social cognition in a normative institutional framework. It should be specified, before continuing, that social cognition does not represent a static phenomenon, à la Robison Crusoe, but is situated, being dependent on the intentions and coordination of economic agents. Therefore, the process of interaction is both active and coordinated. Before analysing what has just been said, certain observations must be made.

Each entrepreneurial plan, as we will see, always incorporates the epistemic horizon of the economic agent, his intentions and motivations, but also certain social effects perceived fallible ex-ante, such as the potential social impact of the good or service produced on the production structure and/or consumers. These intentions are not static and isolated but are

evolutionary and transmissible directly through interaction, hence the possibility of complementary production processes. In other words, if I go to a leasing company to purchase a transport car, my intentions are clearly reflected, and they can be observed directly by other economic agents. The moment I get to that leasing company, there is significant coordination between the representative of that company and me. It initiates a coordination process in which we will find intentions-in-action, such as engine presentation, body testing, grasping and so on. These are actions that get meaning only in relation to a chosen goal. As the interaction process is aimed at the purchasing of the car, these presentations, i.e., actions, are meaningful for the interest of both economic agents. And the possibility of identifying certain technical problems of the car or the appearance of additional questions will lead to another synchronization of the interaction, to a fluctuating state. That is why and we have stated that each process of interaction is active. In other words, these "goal-directed actions" (Fuchs & De Jaegher, 2009) are being generated a pattern of interaction through these intentional actions.

At the same time, each goal is intertemporal, has a "dynamic constitution" (Kirchhoff, 2015), and is composed of several interconnected dynamic temporal moments, i.e., intermediate stages, from the conception of the plan, the choice of means, the actual production and so on. And these intermediate stages presuppose other potential embodied and enactive interactions, such as the purchasing of new capital goods and finding an agreement with a distributor, for example, these goods and productive roles being the result of another epistemic horizon located in a social world, all these operations being carried out in an intersubjective framework. In other words, as the economy is socio-interactionist, each good, service or job is the result of other intentions, motivations and epistemic horizons and the decision to interact implies a common interest, but also a complementarity of the goal, in a symbiotic relationship.

Thus, when two economic agents interact, they enter into an intercorporeal, dyadic process, this coupled action participating in the "emergence of understanding" (Fuchs & De Jaegher, 2009). We note that action and cognition cannot be explained only by appealing to the human brain or two or more interconnected brains, but also on the dynamic relationship between brain, body and social environment. And precisely this social context facilitates the emergence of active engagements, "*characterized by embodied interactions and affective processes where distinct forms of sensory-motor-interoceptive couplings are generated by the*

perception and response to facial expression, posture, movement, gestures, etc. in rich pragmatic and social contexts" (Gallagher & Allen, 2018). Here comes the importance of intercorporality. Studies have shown that in any social interaction, there is unconscious coordination of posture (Varlet et al., 2011), of body movement (Marsh et al., 2009), even if this coordination is not intended (Issartel et al., 2007). This process of interaction implies an intercorporeal, affective coordination, through which we incorporate the body of another economic agent and implicitly his intentions, epistemic experiences and so on. Therefore, the interaction takes place in a social world in which two or more economic agents incorporate and are influenced by these communicative and implicitly productive processes, with potential ramifications on the social world, from this interaction may result in the production of other goods, services, or new normative values.

This phenomenon allows the emergence of a dynamic state through which economic agents can communicate actively, resulting in a social understanding. But even if we can talk about a "rhythmic co-variation of gestures or vocal expressions" (Fuchs & De Jaegher, 2009), this is a temporary synchronization, which helps to coordinate behaviour in a social situation. Although the interaction processes result in social meaning, the economic agents are in temporary coordination, which tends to change with the emerging of other intentions, other intentional actions, new questions, all facilitating the modification of the interaction pattern.

This means that, looking from an enactive perspective, there is a constant transition in coordination. Assuming the definition of Fuchs and De Jaegher (2009), there is a coordination to and coordination with. In the first of these, there is coordination towards a third event, such as the production of a capital good for another entrepreneur. In the case of the second type of coordination, there is coordination between two business partners for the production of that capital good. But no interaction can be anticipated ex-ante perfectly because there is an active process through which the coordination structures undergo constant changes.

These changes are possible due to the fact that each economic agent has certain unique personal circumstances, and these are composed of a limited number of prior experiences. Thus, there is another involvement, another epistemic level, another perception of the situation, each of which temporarily affects the coordination structures of interaction. Thus, each new active element of the interaction can modify its pattern and facilitate the appearance

of other reactions that were not anticipated. Therefore, in an entrepreneurial context, where each action has an assigned meaning, economic agents observe an "affordance" or utility. This means that they interact only when they attribute certain importance to another economic agent to fulfil their own purpose. Or, if we talk about capital or consumer goods, economic agents interact when those goods receive a productive value following the emergence of an entrepreneurial plan. Thus, "*the decision to search for opportunities is an enterprising decision requiring entrepreneurial intuition and imagination and must precede the 'economic' decision to go ahead with the examination of opportunities for expansion*" (Penrose, 1959, p. 34). That's why "*over time, the economic analogue of natural selection operates as the market determines which firms are profitable and which are unprofitable, and tends to window out the latter*" (Nelson & Winter, 1985, p. 4).

Therefore, each process of interaction is autonomous and active. This process differs from the environment, but "*it does not isolate itself*" (De Jaegher et al., 2016). Each such interaction implies an ongoing relational activity that develops a certain precarious identity and participates in the expansion of the communicative and productive skills of economic agents, which have the ability through interaction to have access to a completely different epistemic context. Thus, as each interaction participates in the development of the skills of economic agents, we can say that they are mutually incorporated. Therefore, mutual incorporation implies an active perception of the other, a certain intercorporality, and through this process, "*the other, to an extent, makes me*" (Fuchs & De Jaegher, 2009).

In other words, an interaction with another economic agent can change me, as opposed to an interaction with an object. We say that this process is autonomous because it is self-organizing. It is generated ex-novo by emotional, genetic, epistemic differences and so on, by changes in coordination. This in-between process is oscillating, with each participant having the willingness to act on the conversation and implicitly on the future perception capacity of another entrepreneur, "*both continuously oscillate between activity and receptivity*" (Fuchs & De Jaegher, 2009). The interaction is possible due to the existence of common interest that leads to mutual incorporation, to a dynamic epistemic, emotional and affective interrelation that allows the emergence of a social understanding and implicitly leads to a mutual influence between the participants.

At the same time, this process is supported by a certain normative co-regulation, namely "*what ought and ought not to be done in the others' presence, and a special experiential state, i.e., awareness of the others' presence*" (De Jaegher et al., 2016), and this regulation applies to both an encounter and a gathering. Starting from this normative element, with the help of which meaningful actions can be generated, we come to the understanding of enactive perception and cognition as "affordability-based" (Gibson, 1977), in other words, we perceive the world in pragmatic terms of "I can", of actionability, depending on the skills of economic agents. Thus, every social situation, every good, every economic agent all allow the existence of only a limited number of potential actions. Therefore, in a complex economic context, each economic agent perceives a certain affordance of the goods and services, depending on his epistemic horizon, this horizon being constantly reconstituted according to his new experiences. For example, if I perceive that a lawyer becomes important in fulfilling my imagined goal, I will get in touch with him and try to negotiate a price. Another entrepreneur may consider that his plan does not require the participation of a lawyer, so he appeals to another economic agent. Each social role is enactive and has a productive role only situated in an interactional social world.

IV. Learning as a Social-World Embedded Experience

" *Learning, as a human activity, takes place in everyday experience*" (He & Jespersen, 2017). These daily experiences can only take place in a social world in which an individual is situated. In other words, the learning process takes place in a social and embodied context. "*Human beings are not merely observing, but, through their bodies, they are acting in the world*" (Heidegger, 1962). Knowledge can be accumulated in any social context, is located everywhere, and this process cannot be seen separately from the meaning attributed to it by the economic agent and his own bodily activity. "*We, as human beings, view the world through our eyes, we listen through our ears, we incorporate different experiences of taste through our mouth, we grasp, caress and feel things or other people through our hands, and so forth*" (Alerby, 2015).

The economic agent is part of a social world, and through this bodily interaction with the social environment, he tries to understand the functioning structures of this world and to assign them another meaning or, in other words, to update this meaning. This is not an internal model of knowledge construction, observational, but an interactional model, which

emphasizes the usual differences of experimentation of all economic agents. All our experiences shape our perception, especially when we emphasize the organic and historical nature of learning that results from social activity. In this way, we emphasize the intersubjective relationship between the economic agent and the social world, each exerting a certain influence on the other. In the absence of this experiential context, it is not possible to expand the perception. But as we have seen, this capacity for interaction resides in the cognitive and normative aspect of institutions, allowing the socialization of the economic agent in a social world.

There are no independent minds that have access to an objective, representative knowledge, which presupposes a static process of expanding the perceptual horizon, but this process is active, also depending on the peculiarities of each individual. "*Experience involves the whole person, rather than a single mind that takes in externally constructed knowledge, and it also involves the learner's connections to the world and to others*". These experiences are intrinsically linked not only to the present context but also to its previous experiences, to the genetic construction, all of which are actively participating in the economic agent's interpretation of a situation, "*experience produces increased knowledge about things and contributes to 'objective' knowledge in so far as its results can be transmitted to others. But the experience itself can never be transmitted; it produces a change – frequently a subtle change – in individuals and cannot be separated from them*" (Penrose, 1959, p. 53).

In other words, there is also a dynamic memory, through which all past experiences are reflected in the present. But these experiences are not neutral but are active, permeable elements that allow the existence of prospective actions. Thus, each interaction process participates non-linearly in the expansion of the epistemic horizon and implicitly in the emerging of other subjective expectations, which means that the economic agent is a process-in-time, each new experience becoming a new way of engaging in the social world. At the same time, as I specified, each new experience is enactive, it being interpretable in the light of the present knowledge. I have already specified the intersubjective nature of the evolution of knowledge. Understanding the body as a subject, we are not only in relationship with other economic agents but also with certain goods or services. But all these goods were developed intersubjectively, in an entrepreneurial way, by economic agents with a different perception.

Thus, we are at the same time interconnected both with a good or service and with the epistemic circumstances that led to the appearance of that good. Once the intentions were formed, we attribute a specific meaning to this good, depending on the affordance we perceive. And these intentions become an element of an action for the economic agent, skilful incorporation, i.e., habit, being initiated. For example, in the case of acquisition of a technological asset by an inexperienced entrepreneur, that asset and the economic agent are not immediately unidirectional incorporated, but there is a certain discrepancy until a habit is formed, and this habit appears as a result of experience. Let's think of a good that gets a productive role following an entrepreneurial plan, such as a laptop. An entrepreneur tries to digitize his company, and he makes the decision to purchase that asset. But in the absence of digital experience, the entrepreneur will not be able to use the laptop productively the first time, but this activity improves as the experience expands in relation to that good. In other words, a habit is formed over time and not immediately.

It is clearly seen the importance of corporality in imagining an entrepreneurial plan, the acquisition of the asset and so on. This good has a meaning for the economic agent only in a productive context. It has a certain utility perceived subjectively in relation to the imagined goal. But any new intersubjective experience can make the economic agent realize that another type of good could offer a relatively higher yield, i.e., have another utility, which will lead to change the meaning attributed to it. In other words, each interaction can lead to falsifiability, to a change in the perceived utility of goods or services.

V. Evolution of Entrepreneurial Knowledge and Hermeneutics of Capital

Prior interactive experiences enact the current perception, each such experience participating in the development of the skills of economic agents. An interaction is an autonomous process, co-regulated by the dyadic participation of economic agents. And this interaction is ensured by the existence of a socio-normative context in which the economic agents are situated, this situation facilitating the emergence of entrepreneurial cognitive processes. In other words, because of this situated context, we are witnessing the emergence of intersubjective interactions that form the markets.

Each economic agent has a certain unique horizon, which has resulted from its previous experiences. These past experiences are projected back into the world, leading to a perception

of the world from a unique standpoint. All these experiences will be reflected in the present capacity of the economic agent to engage in an entrepreneurial process. This process occurs as a result of imagining a prospective plan and implicitly of distal intentions following this plan.

When I decide to initiate an entrepreneurial activity, for example, opening a furniture company, I imagine the steps that I have to follow, and these steps are translated in the form of distal intentions. These intentions "*relate to prior deliberation processes that allow us to formulate our relatively long-term (future) goals*" (Gallagher, 2020, p. 47). After initiating this prospective plan, I engage in actions consistent with my purpose, such as choosing capital goods, testing them, negotiating the price, hiring the workers, setting up the company's departments and so on, all these actions being understood as proximate intentions, intentions-in-action relevant to the decided goal.

At this point, all these intermediate means are actively incorporated in the fulfilment of the goal through an "*inseparable interconnectivity between perception and movement*" (Fuchs & De Jaegher, 2009). For example, when we choose capital goods, we realize this by already thinking about the completion of the prospective plan, which is why we made that decision to choose capital goods in the first phase, "*we incorporate by forming a sensorimotor gestalt cycle towards it (i.e., goal), any object we interact with*" (Fuchs & De Jaegher, 2009).

Each entrepreneur has a unique way to initiate a prospective plan in the social world, depending on his experiences and productive capacity, which also emphasizes the dynamic and intersubjective character of an economy, that's why "*we are not simply acquiring knowledge about a static system which stays put, but acquiring knowledge about a whole dynamic process in which the acquisition of knowledge is itself part of the process*" (Boulding, 1966). The concept of heterogeneous capital can be found mainly in the Austrian School.

"*The entrepreneur's function is to specify and make decisions on the concrete form the capital resources shall have. He specifies and modifies the shape and layout of his plant, which is something he cannot do to his typists, desirable though that may seem to him. As long as we disregard the heterogeneity of capital, the true function of the entrepreneur must also remain hidden*" (Lachmann, 1956, p. 16).

The value of each capital good is socially derived according to social preferences, but also to the current perceptions of entrepreneurs, all these decisions dictating the utility and implicitly the demand and supply of capital goods. Therefore, capital goods have a zero intrinsic value, entrepreneurial project leading to a potential return or profit. The value of these goods is given by the expectations and implicitly fallible entrepreneurial perceptions, which result in the appearance of subjective entrepreneurial calculations and the specific choice of heterogeneous resources involved in the production, each such combination leading to a distinct yield. In this way, when we refer to the heterogeneity of capital, we do not consider the physical differences per se between these goods, but economic functions or affordance of these goods, certain goods become capital "*not by virtue of their physical properties, but by virtue of their economic function*" (Lachmann, 1956, p. XV).

Economic agents uniquely identify the productive capacities of capital goods, capacity inherently linked to bounded rationality and implicitly to the uncertainty of human action, given the completion of the action at a future point. So, we get to what Alchian and Demsetz (1972) stated, which is that "*efficient production with heterogeneous resources is a result not of having better resources but in knowing more accurately the relative productive performances of those resources*". But this efficiency is not static in nature, so we can say that the expectations regarding the yield of a combination of resources are modified as a result of autonomous interaction processes, which can lead to changes in the business plan. Thus, it can be concluded that entrepreneurs are involved both in discovery processes, such as those enunciated by Israel Kirzner (1979), and in Schumpeterian-like processes, in which "*the entrepreneur believes he is right, while everyone else is wrong. Thus, the essence of entrepreneurship is different – being different because one has a different perception of the situation*" (Casson, 1982, p. 14). Hence the understanding of capital assets as being in potentia, any capital good can undergo a change in the perceived affordances.

For example, as each economic agent is situated in a social world, and the epistemic horizon is evolutionary, neither good have a predetermined role. In other words, since capital goods are in potentia and have an intrinsic value of zero, each entrepreneurial project initiated has the ability to give them a productive value. Each entrepreneur can innovatively perceive the opportunity to reconfigure a capital good and use it in a new production process. Or he may introduce a new technological innovation. If this allocative innovation brings benefits, this new function of capital good can be taken over by several economic entrepreneurs, and this change can lead to the production of a relatively higher number of such capital goods, to the

appearance of new relative prices, each such decision having the capacity to act non-linearly on interconnected economic sectors, changing entrepreneurial perception. Thus, we can state that "*the 'best' mode of complementarity is (...) not a 'datum'. It is in no way 'given' to the entrepreneur who, on the contrary, as a rule, has to spend a good deal of time and effort in finding out what it is*" (Lachmann, 1956, p. 3).

This heterogeneity of perception applies coherently to the heterogeneity of capital and implicitly to the prior experiential horizon. Entrepreneurial judgment cannot be homogenized or quantified, being empirically demonstrated that these judgments originate in previous experiences, which allow a distinct interpretation of social data (Shane, 2000). With this new interpretation, relative price structure can also undergo changes, which can lead to the appearance of other interpretations offered to potential production and the distinct allocation of heterogeneous resources, this new price having the ability to increase the return on investment. Thus, each interaction has social effects and can lead to the emergence of other technological innovations, especially as these epistemic exchanges constantly occur in a production structure, but also to the emergence of a new meaning attributed to the capital goods already owned by entrepreneurs. Therefore, the complexity and complementarity of goods are closely related to evolutionary social preferences, which are modified by the same intercorporeal process but also by the entrepreneurial perception in relation to them.

"We are living in a world of unexpected change; hence capital combinations, and with them, the capital structure, will be ever-changing, will be dissolved and re-formed. In this activity, we find the real function of the entrepreneur" (Lachmann, 1956, p. 16). This confirms the importance of divergent expectations in entrepreneurial activity, "*(...) it is the uncertainty inherent in new economic knowledge, combined with asymmetries across agents with respect to its expected value, that potentially leads to a gap between the valuation of that knowledge*" (Audretsch, 1995, p. 39).

Only through interactions can we reach the change of entrepreneurial perception and normative principles, and these will translate into increasing the complexity of the production structure if the entrepreneurial calculations prove correct ex-post. The capital structure is social and evolutionary, being constantly modified by the epistemic horizons.

VI. The Heterogenous Nature of Firm Activity

After the introduction we have made, we can continue with the resource-based approach. As we have noticed, entrepreneurship is inherently related to perceptual capabilities, and this will be reflected in "*intuition, the capacity of seeing things in a way which afterwards proves to be true, even though it cannot be established at the moment and of grasping the essential fact, discarding the unessential, even though one can give no account of the principles by which this is done*" (Schumpeter, 1934, p. 85). In this way, the external environment does not determine the choices of an entrepreneur but offers n creative possibilities (Cole, 1978). The social positioning of the entrepreneur allows him to engage in trial-and-error processes in a complex economic environment, markets as socio-cognitive mechanisms, offering the possibility of testing entrepreneurial ideas and projects (Klein & Klein, 2001).
Thus, based on Penrose's theory, we understand that "*it is the heterogeneity, and not the homogeneity, of the productive services available or potentially available from its resources that gives each firm its unique character*" (Penrose, 1959, p. 75). Firms assume a heterogeneity of both resources and mental models. Each firm can be imagined as a pool of knowledge in which each economic agent tacitly participates. This knowledge pool is limited. In other words, it offers a fixed number of strategic options that an entrepreneur can achieve, which imprints a unique creative vision within a firm.

As entrepreneurial experiences are extended, we can witness the emergence of other investment opportunities within the company (Fiet, 2007), another vision, new opportunities that others have not imagined (Smith & Di Gregorio, 2002). Thus, the firm is a dynamic organization with infinite limits, dependent on the complementarity of knowledge and skills of economic agents. It always has a unique cognitive diversity, which is constantly expanding, as economic agents with different perception appear.

Cognitive diversity is always beneficial. It is argued that innovation tends to be obtained in entrepreneurial teams with distinct perceptions (Tushman & O'Reilly, 1997). Thus, we can also affirm that the heterogeneous resources owned are the result of the entrepreneurial perception already existing, the resources following the entrepreneurial plans, "*the decision to search for opportunities in an enterprising decision requiring entrepreneurial intuition and imagination and must precede the economic decision to go ahead with the examination of*

opportunities for expansion" (Penrose, 1959, p. 34), only the emergence of a new entrepreneurial understanding can lead to the incorporation of new heterogeneous resources.

VII. Conclusion

In this paper, we highlighted the hermeneutic and interactionist nature of the economy. Economic agents are actively incorporated in an institutional structure in certain socio-economic practices, which allows them to interpret and initiate entrepreneurial activities. We have argued that all goods and services obtain meaning only in relation to the social world. With the social epistemic level, they are produced as a result of a complementary and intersubjective effort. Each production process incorporates the epistemic level of each economic agent, which is congruent with their experiential horizon. At the same time, the production processes are enactive, highlighting the interconnected aspect of the economy. Therefore, all goods obtain an eminently social value. They are produced in complementary relationships but also derive their value according to entrepreneurial and consumer preferences, hence the interpretative character of the capital structure. Thus, it can be said that production is dynamic, as enactive interactions with economic agents with a different horizon occur in a continuous complex relationship.

Starting from these, we observe that the economic agent can no longer be interpreted in isolation, with static and homogeneous preferences, but as a situated and active element that is influenced and influences the cognitive development of economic processes. We have argued that the economic agent is a process-in-time, with unique and limited cognitive capabilities, which means that the economic process is a fallible one, which offers n possibilities of action and implicitly of interaction.

This paper emphasizes the dynamic character of the economic agent and tries to translate it into a new methodology, which can be used to formulate realistic economic models, in which the focus will be on conscious actions, dynamic preferences or the process of interaction.

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