



Workshop
4E (Embodied, Embedded, Extended, Enactive) Economics
14-15 November 2024
University of Memphis

Program

Thursday, November 14

FedEx Institute of Technology, Fishbowl (2nd Floor)

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|-----------|---|
| 9:30am | <i>Welcome Coffee</i> |
| 10-11am | Introduction (Shaun Gallagher) |
| 11-12:15 | Enrico Petracca. Where is the norm? Cognitive institutions and the 'location problem' |
| 12:30 | <i>Lunch</i> |
| 2-3:15 | Julie Nelson. Embodied and Embedded Economists |
| 3:30-4:45 | Felipe Gonzalez T. Machado. Entrepreneurial imagination, the extended mind, and enactivism |

Friday, November 15

Shelby Room, University Center 342 (3rd Floor)

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|-------------|---|
| 9:45am | <i>Coffee</i> |
| 10-11am | Riccardo Viale. Against zero intelligence models of market: The enactive role of embodied agents |
| 11:15-12:30 | Mario Rizzo. Hayekian psychological economics: expectations and learning |
| 12:30pm | <i>Lunch</i> |
| 2:30-3:45 | Guido Baggio. A Pragmatist Contribution to 4E Economics |
| 3:45-5pm | Erwin Dekker. Two forms of subjectivism, or toward an Austrian theory of the self |

Abstracts

Introduction

Shaun Gallagher (University of Memphis)

4E (embodied, embedded, extended, enactive) approaches to cognition developed in philosophy of mind and the cognitive sciences recently have been put to work in the area of institutional economics. These approaches have demonstrated the importance of cognitive institutions as resources for economic agents. Institutions in economics are understood as points of stability, or as rules which structure regular behavior, reduce uncertainty, and help create order or efficiency in social interactions. The market is an example of a socially extended cognitive institution that facilitates decision making, problem solving and processes of economic rationality. This workshop explores three questions motivated by this interdisciplinary context and so far not addressed in this literature: (1) the question of the operative location of institutional rules that contribute to the constitution of cognitive processes; (2) the question of how an entrepreneur can bring about change by exploiting institutional affordances and external resources; and (3) the question of how an economic agent can deal with complex problems in the real world by engaging with the same social-interactive processes that are constitutive of cognitive institutions.

Where is the rule? Cognitive institutions and the localization of cognitive rules

Enrico Petracca (Konrad Lorenz Institute for Evolution and Cognition Research)

The ‘extended mind’ concept (Clark & Chalmers 1998) has gained increasing traction among institutional economists for the prospect it offers to explain the nature of institutional phenomena. Clark (1997) himself outlined a framework for institutions in close collaboration with institutional economists (e.g., Denzau & North 1994). Since then, extended-mind approaches to institutions have followed the modification trajectory of the extended mind hypothesis, particularly its 4E cognition turn in the form of the ‘socially extended mind’ (Gallagher 2013) and of ‘mental’ or ‘cognitive’ institutions (Gallagher & Crisafi 2009).

This paper aims to contribute to the view that sees economic institutions as forms of cognitive institutions (Gallagher et al. 2019; Petracca & Gallagher 2020; Dekker 2022) by addressing the social ontology issue of where to localize institutions in the world. While Hindriks (2013) refers to the ‘localization problem’ as concerning the referents of organizations and institutions, I reframe the problem in wider terms as one of finding where institutional entities are constituted. The standard answer so far has been that institutions are constituted in agents’ minds (Searle 2005), to which the extended mind hypothesis has replied by offering a variety of

externalist constitution possibilities. If one accepts the idea that institutions extend and constitute individuals' cognition, a related question concerns also the 'what,' that is, what exactly institutions extend and constitute.

From a view sympathetic to 4E cognition, Frolov (2022) suggests that cognitive institutions should be understood as extended cognitive rules (what-wise) located polycentrically in both agents' mental representations and the world of artifacts and social interactions (location-wise). This view explicitly distances itself from Petracca & Gallagher's (2020) non-representational institutional stance. While agreeing that much about cognitive institutions concerns the enaction of cognitive rules (although they do not reduce to that), I will take issue with the idea that mental representations are necessary to explain the constitution of cognitive rules. The main problem with mental representations concerns the rise of possible explanatory redundancies. One way to escape redundancy would be to identify the exact circumstances in which rules are said to be constituted internally and representationally and when they are not so. Alternatively, I propose to build a more parsimonious externalist and non-representational framework from the beginning to see what it can (and what it cannot) explain. Explanatory redundancy has a clear location dimension concerning the multiplication of places where institutions are supposed to be constituted: as the polycentric hypothesis implies, this should happen *both* in the head and the environment. An alternative is to see cognitive institutions as constituted at the intersection between agents and the environment, namely, as enactivism would suggest, in their relation.

Embodied and Embedded Economists

Julie Nelson (Economics, University of Massachusetts, Boston)

Combining Lakoff and Johnson's work on metaphor and the work of Keller, Harding, and others on the history of science provides a fresh view of economics. It becomes clear that the mainstream of economics has been constructed around a binary of up/down, in which men and all things thought of as masculine are thought of as "up" while women and all things associated with femininity are associated with "down." With most economists, historically, having been men, and with mathematics and machinery being associated with men, it's no surprise that a discipline of economics formed within sexist societies adopted mechanical images of knowledge creation and of economic life. Emotion, nature and its delicate systems, and non-mathematical modes of knowledge creation—all associated with women—were studiously neglected. "Old" Institutional Economics, bucking parts of this trend, was easily dismissed as "non-rigorous." This talk will review this argument, point out the dangers a one-sided view of the economy poses, and suggest better metaphors and methods.

Entrepreneurial Imagination, The Extended Mind, and Enactivism

Felipe Gonzalez T. Machado (University of Vienna)

Erwin Dekker (Mercatus Center at George Mason University)

Recent work has established a connection between 4E cognition (embedded, embodied, extended, and enactive cognition) and institutional economics. It has demonstrated the importance of cognitive institutions and the price system more generally as an extended mind for economic actors. The existing work on cognitive institutions arguably tackles a number of ‘easier’ cases in which the coupling of individuals with their (stable) environment is analyzed. Institutions in economics are understood as points of stability, or even as rules which structure regular behavior and help create order or efficiency in social interactions. Harder cases would involve situations in which individuals shape their environment. In economics creative acts are analyzed as action of the entrepreneur, an actor alert to opportunities and able to bring about change. We therefore focus in this paper on theories of entrepreneurship, more specifically, we explore what a 4E cognition perspective on entrepreneurship could be.

There are several well-established theories of entrepreneurship in economics, which emphasize different qualities of entrepreneurship, such as the alertness to opportunities (Kirzner), the visionary imagination of the new (Schumpeter), or the creative nature of entrepreneurial choices (Buchanan and Vanberg). Some of these accounts are clearly cognitivist in origin, they either articulate a clear division between cognitive agents and the world or posit an individual

able to imagine alternative futures which they are able to create through entrepreneurial action. They therefore do not provide fertile ground for a 4E perspective on entrepreneurship.

But, we argue that some alternative accounts of entrepreneurship do point in the direction of 4E cognition. We start by analyzing Lavoie’s articulation of the social element of the human mind, conceiving the entrepreneur as culturally embedded, while emphasizing the importance of embodied knowledge. ‘Effectuation’ is the second approach we investigate (Sarasvathy 2008). This account starts with the question of what can be done with the means available, and then expands that to the question of what other things can be done with these means. This conception focuses on action and relates entrepreneurial imagination more closely to an interactive engagement with others and the resources in the environment as in Gallagher’s affordance-based imagining (2017). We argue that effectuation moves closer to enactivism while being self-consciously rooted in philosophical pragmatism and is therefore compatible with earlier connections made between 4E cognition and pragmatism (Gallagher 2014).

A third approach to entrepreneurship which we argue is promising in this regard is that developed in economic sociology, especially in Beckert’s (2016) work on ‘imagined futures’. It gives a central place to uncertainty, and how individuals deal with it. Beckert’s analysis focuses on how shared frames and narratives as well as calculative devices allow individuals and organizations to imagine the future. His approach is compatible with the extended mind approach which emphasizes the use of cognitive tools outside of the mind to navigate the world.

Against zero intelligence models of market: The enactive role of embodied agents.

Riccardo Viale (University of Milan and Herbert Simon Society)

The extended cognition approach of Andy Clark applied to economic institutions presents a series of controversial claims. According to him “the explanatory burden is borne by overall system dynamics in which the microdynamics of individual psychology is relatively unimportant” (Clark 1997b, 276). Moreover, in his opinion, neoclassical theory works in these cases when “preferences are imposed by the wider situation and need not be echoed by individual psychology” (Clark 1997a, 183). From this point of view, the economic agent can also be a zero-intelligence trader (Gode & Shyam 1993).

Market institutions are norms and values that characterize economic behavior (North 1990). On a more embodied-enactive view, they are dynamic and flexible dispositions and not static and rigid constraints. Moreover, economic action is characterized by enactive interaction with other agents in the framework of economic institutions. Problem solving in this context is based on action-oriented processes and enactive interactions (Viale, Gallagher & Gallese 2023). Consequently the actions of economic agents are not determined rigidly by the economic institutions but vary according to many embodied, enactive and embedded cognitive phenomena:

- 1) Enactive problem solving is characterized by continuous feedback loops between the agent and the market. Enactive problem solving is based on individual heuristic collections of information, data processing and prediction.
- 2) Market failures and negative externalities cause dynamic feedback loops with economic agents and policymakers. These feedback loops cause the introduction of adaptive solutions that change the economic institutions.
- 3) Technological innovation, environmental, social and political changes are responsible for the dynamical shaping of economic institutions.
- 4) Economic agents act in response to the changing embedded meaning of their situational context.
- 5) The economic agent is an embodied individual whose action depends on the neural, emotional, sensorial, visceral and motor simulation of the results of their action.

Hayekian psychological economics: expectations and learning

Mario Rizzo (Economics, New York University)

Malte Dold (Economics, Pomona College)

This presentation argues that Friedrich Hayek's theoretical psychology provides original insights for the discussion of a series of phenomena in economics. Hayek's psychology extends well beyond the logic of choice in neoclassical economics. It emphasizes dynamic processes through which individuals adapt to and acquire knowledge about the world around them. By discussing Hayek's framework, the limitations of the dominant heuristics-and-biases approach in behavioral economics become more evident. While the heuristics-and-biases approach primarily focuses on human judgment and decision errors, Hayek's framework provides a more comprehensive view of human cognition: it acknowledges the possibility of errors but also the possibility of learning and overcoming biases. We demonstrate how Hayek's insights can help us understand topical phenomena such as the power of simple heuristics in complex situations, decision-making in firms and small groups, and the idea of the market and other social institutions as 'thought aids' that function as amplifications of the individual mind. We discuss contemporary research in psychology and cognitive science that supports and extends Hayek's theoretical contributions.

A Pragmatist Contribution to 4E Economics

Guido Baggio (Philosophy, Roma Tre University)

In my contribution, I will explore the potential of the recent "Pragmatist Turn" in 4E cognition to enhance the theoretical framework of a 4E economics approach. The talk will be structured as follows. First, I will expose Kahneman's concepts of reason and intuition, highlighting the epistemological dualism that informs Behavioral Economics. Next, I will investigate various proposals for redefining the concept of embodied bounded rationality within the context of 4E cognition (Mastrogiorgio, Petracca 2016; Gallagher 2018; Rolla 2021). Finally, I will inquire about some pragmatist concepts that might contribute to 4E economics to redefine rationality as an enactive organic adaptation. Specifically, I will refer to 1) James's idea of emotion as a behavioral response to a problematic situation and its reprise in Dewey's and Mead's theories of emotion; 2) Dewey's theory of the organic circuit, which emphasizes the organic nature of the ideo-sensorimotor process where stimuli, the organism's capacity to select, and motor responses are seen as interconnected and interdependent phases of an ongoing act; and 3) Dewey's logical theory of the judgment of practice, which proposes that our sensory perceptions are forms of practice judgments or sign values related to how to act.

Two forms of subjectivism, or toward an Austrian theory of the self

Erwin Dekker (Mercatus Center at George Mason University)

One of the key distinguishing features of Austrian economics is subjectivism. Subjectivism has been understood as the foundation for why individuals are different from each other, as well as a basis on which individuals can reshape themselves and the world around them. Subjectivist Austrians emphasize the imaginative and creative potential of individuals, as well as the dynamic and open character of the self. This paper argues that this dominant understanding of subjectivism fails to account for why individual perspectives are heterogeneous, misunderstands individual agency, and ultimately informs a wrongheaded notion of individual freedom, understood as independence from other wills and perspectives. This paper argues that this type of subjectivism has since Menger co-existed with another historical and institutionally oriented approach to subjectivism, which suggests that meanings and beliefs form endogenously in the process of social development. This perspective sees individual preferences, self-understanding, and even ‘the self,’ as emerging from social interactions and the division of labor. The paper’s main contribution is to develop a theory of the self, which can provide a causal-genetic explanation of why individuals grow more heterogeneous as society becomes more complex, treats autonomy as an emergent phenomenon and points to a relational notion of freedom.

Given that this theory of the self is to some extent only latently present in Austrian thinking, I will reinforce it at points with elements from the work of George Mead. This historical-institutional approach has the further virtue of creating congruence between the evolutionary and gradual theory of institutional change and the Austrian theory of the self.