

## ‘Mechanomorphism’ of Modern Economics

Michael Wroblewski<sup>1</sup>

Peter J. Boettke<sup>2</sup>

**Abstract:** This paper examines Karl Mittermaier’s critique of mechanomorphism in economics, the tendency to treat human behavior as analogous to mechanical systems governed by deterministic laws. Building on Mittermaier’s early work and his later *A Realist Philosophy of Economics* (2023), the paper examines how this conceptual metaphor emerged historically and how it continues to shape economic thought today. The first section traces the evolution of mechanomorphism from Walrasian general equilibrium to Pareto’s functional determinism, emphasizing how this transformation paved the way for increasingly formalistic and depersonalized models. The second section situates Mittermaier’s critique within a broader Austrian methodological tradition, drawing on the works of Machlup, Hayek, and Mises to defend the necessity of *Verstehen*—interpretive understanding—in the social sciences. Particular emphasis is placed on Hayek’s distinction between simple and complex phenomena and his critique of scientism. The final section identifies contemporary instantiations of mechanomorphic thinking in macroeconomic and development economics arguing these frameworks retain the same epistemological flaws Mittermaier sought to expose. The paper advocates for a reconstruction of economics on interpretive, institutional, and subjectivist foundations grounded in understanding human action within evolving rule-bound orders.

---

<sup>1</sup> Ph. D. Student at George Mason University. Email: [mwroblew@gmu.edu](mailto:mwroblew@gmu.edu)

<sup>2</sup> University Professor at George Mason University. Email: [pboettke@gmu.edu](mailto:pboettke@gmu.edu)

## I. Introduction

This paper explores Karl Mittermaier's critique of mechanical metaphors and situates it within the broader Austrian tradition of methodology. The argument unfolds in three parts. First, it reviews the Austrian emphasis on Verstehen as articulated by Mises, Hayek, and Machlup to relate it to Mittermaier's mechanomorphism. Second, it traces the historical origins of mechanomorphism, focusing on the transformation of equilibrium theory from Walras to Pareto and the rise of deterministic modeling. These thinkers challenged the reduction of economics to predictive science, stressing instead the complexity and subjectivity of human action. Third, the paper demonstrates how mechanomorphic assumptions persist in contemporary economics.

Rather than dismissing formal analysis, this paper argues that economics must reorient itself around interpretive models grounded in institutional evolution, dispersed knowledge, and subjective meaning. Mittermaier's work provides a critical lens through which to confront the epistemological limits of formalism and reclaim economics as a human science. His critique does not reject theory but insists that its concepts must remain faithful to the domain of human action. In this way, Mittermaier offers not only a diagnosis of mechanomorphic fallacies but a framework for reconstructing economic thought on realist and interpretive grounds.

## II. The Nature of the Social Sciences

Machlup (1969) draws a sharp distinction between the natural and social sciences by emphasizing the interpretive dimension of human action. He begins with a provocative thought

experiment: what if matter could talk? Natural scientists study phenomena that cannot reflect on their own behavior—molecules and atoms do not argue about why they accelerate. But in the social sciences, the object of inquiry is a reflective being who can offer self-interpretations, disagree with external explanations, and act in ways shaped by meaning rather than mechanistic causation. This difference introduces a “second-degree model”: while natural sciences model physical behavior, social sciences must construct models of the mental models that individuals themselves use to navigate the world. Social science thus becomes reflexive and recursive. The economist, in this view, must account not only for what people do, but for how they understand what they are doing.

This interpretive framework requires what Machlup calls the Postulate of Subjective Interpretation. Social phenomena must be understood not as external regularities alone, but as meaningful actions embedded in subjective contexts. As he puts it:

“The social scientist must ask what model of an individual mind can be constructed and what typical content must be attributed to it in order to explain the observed facts as the results of the activity of such a mind in an understandable relation.” (Machlup 1978 [1969], p. 315)

This is the essence of Verstehen, a disciplined form of empathetic reconstruction that allows the economist to interpret actions as intelligible responses within a subjective framework. Unlike the physicist, the economist must deal with the observed choices as well as the meanings, purposes, and expectations that inform them. For Machlup, this interpretive stance demands that models remain faithful to the actor’s perspective.

Hayek (1942) anticipates this line of thought by asserting that the subject matter of economics is composed not of objective quantities alone, but of "facts of meaning." Tools, goods, money, and contracts are not merely physical objects but meaningful artifacts, understood only within the framework of individual intentions and shared institutional rules. He emphasizes that such phenomena must be analyzed through "abstract categories" such as plans, expectations, and ends-means relationships. These categories cannot be inferred from observation alone; they must be reconstructed through an interpretive framework that takes seriously the subjective point of view of actors. This insight forms a philosophical bridge to his later work on complexity, where the nature of economic systems resists mechanistic modeling and calls for a radically different conception of explanation.

Hayek (1968) develops a parallel critique where he systematically challenges the transfer of scientific methods from the physical to the social domain. There, Hayek argues that the complexity of social phenomena makes them fundamentally different from the simpler systems studied by the natural sciences. In natural sciences, it is often possible to isolate a small number of variables and describe their relationships with precision. But in the social sciences, the number of interdependent variables is vast, the elements are adaptive agents, and the rules guiding behavior are often tacit or evolving. This makes precise prediction impossible and demands a shift from seeking exact outcomes to identifying general patterns. Attempting to impose the methods of the physical sciences on such systems, Hayek warns, leads to a kind of scientistic illusion, mistaking complexity for disorder or noise to be engineered away.

As a result, Hayek argues that the aim of social theory must shift from precise prediction to "pattern predictions", i.e., generalizations about the structure or type of outcomes likely to emerge, without claiming to forecast particular results. This means that social scientific theories

will be less falsifiable than those in the physical sciences, not because they are unscientific, but because of the nature of their subject matter. As Hayek puts it, "[our] theories will forbid fewer events, and thus will be less falsifiable, than those that deal with simple phenomena" (Hayek 2015, p. 264). Recognizing this limitation is not a defect in economic theory, but a necessary adaptation to its complexity, a point that resonates directly with Mittermaier's critique of mechanomorphism. Both thinkers urge economists to resist the allure of formal precision when it obscures the interpretive, open-ended nature of economic life. Instead of seeking mechanical laws, they advocate for frameworks that remain sensitive to institutional context.

These insights, however, did not emerge in a vacuum. The historical development of this methodology can be traced back to Hayek's wartime writings on "Scientism". He identified a growing tendency among social theorists to imitate the prestige of the natural sciences by importing their methods wholesale. He criticized this tendency not merely as a philosophical mistake but as a political danger. Scientism, in Hayek's view, underpinned the rationalist constructivism of socialism: the belief that society could be consciously engineered through scientific planning. Against this, Hayek argued that many of the most important social institutions like law or markets emerge as spontaneous orders, the unintended consequences of rule-following behavior over time. Attempts to control or redesign these institutions through central planning risked disrupting the very processes that made coordination and adaptation possible in the first place. For Hayek, epistemological humility was not only a methodological virtue but a safeguard against technocratic overreach.

Mittermaier's critique of mechanomorphism rests precisely on this point. By modeling economic actors as reactive entities within deterministic systems, modern economics evacuates human agency from its analysis. In place of purposive action, we find variables responding to

incentives as if by natural law. Mittermaier (1986) sees in this the culmination of a long intellectual drift from Walras's use of equilibrium as a guiding ideal to Pareto's deterministic systems of choice. What Machlup and Hayek argue on methodological grounds, Mittermaier makes explicit as a critique of conceptual metaphor that the economy is no longer seen as a process of interpretation and adaptation but as a hydraulic machine or cybernetic system. Economic agents become cogs in an abstract model, their understanding of the world is subordinated to the modeler's. What unites Machlup, Hayek, and Mittermaier is not merely a critique of scientific overreach but a defense of economics as a human science. Each insists that economics must remain faithful to the subjectivity of its agents and to the institutional embeddedness of their choices. *Verstehen*, in this sense, is a methodological necessity grounded in the nature of the object studied. Human action is intelligible, but only if we begin from the actor's point of view.

### **III. Karl Mittermaier**

Mittermaier (2023) critiques the deterministic foundations of modern economics, particularly its reliance on models that assume economic systems can be fully explained and predicted given a set of initial conditions. He argues that modern economics confuses *ex post* and *ex ante* facts, leading to misleading conclusions about economic causality. *Ex ante* facts are the structural features of an economy that shape human action, such as a central bank and its policy framework, which influence expectations about inflation and interest rates. *Ex post* facts, by contrast, are retrospective observations of economic events that involve unpredictable elements, including coincidence and human choice. For example, the Great Financial Crisis resulted from a confluence of factors, including poor monetary policy and financial regulation, but these causes were not evident beforehand in a way that allowed for precise prediction.

The tendency to mistake *ex post* fact for *ex ante* fact arises from Walrasian equilibrium models, which assume constant preferences and perfect knowledge, overlooking the fact that both are historically contingent and shaped by institutional evolution. Such models fail to account for the ways in which institutions evolve over time, reshaping both the information available to actors and the incentives that guide their decisions. Preferences are not static, but formed through experience, shaped by social norms, and influenced by economic institutions. Similarly, knowledge is fragmented, evolving, and often contested. The belief that equilibrium models can fully capture economic dynamics presupposes an unrealistic level of predictability, neglecting the fact that market processes are driven by entrepreneurial discovery, adaptation, and institutional change.

The evolution of equilibrium theory from a guiding conception to a predictive hypothesis further solidified this deterministic outlook. As Mittermaier (2020) explains, this transition occurred most clearly in the shift from Walras to Pareto. Walras viewed general equilibrium as a conceptual tool rather than a literal description of economic reality, similar to Adam Smith's notion of natural prices. He emphasized that the validity of his model did not depend on whether it was observed in the real world, stating: "It did not matter whether or not we observed it in the real world, since, strictly speaking, it was sufficient that we should be able to form a conception." (Mittermaier 2020, p. 74) For Walras, equilibrium analysis served as a guiding principle, "may be summed up as the attainment, within certain limits, of maximum utility. Hence free competition becomes a principle or a rule of practical significance, so that it only remains to extend the detailed application of this rule to agriculture, industry, and trade."

(Mittermaier 2020, p. 74)

In contrast, Pareto sought to transform equilibrium into a deterministic system, treating economic outcomes as mechanically derived from initial conditions. Unlike Walras, who relied on a realist methodology, Pareto embraced nominalism, describing himself as the “most nominalist of nominalists.” (Mittermaier 2020, p. 80) For Pareto, economics was not about conceptual models but about predicting real-world economic phenomena based on observed choices. He defined the task of economics as: “given certain individuals, who have certain tastes revealed by their choice, and who encounter obstacles in satisfying their tastes, predict the phenomena which will occur in that society.” (Mittermaier 2020, p. 80) This approach treats preferences as fixed and fully revealed through behavior, allowing economics to operate as a predictive science modeled on the natural sciences. In doing so, Pareto laid the groundwork for later formalist approaches that suppress interpretation and uncertainty in favor of behavioral regularities and functional outcomes.

This shift marked a fundamental transformation in economic thought, one that Mittermaier believed laid the groundwork for what he termed mechanomorphism. As equilibrium theory hardened into predictive machinery, economists increasingly borrowed not only the mathematical forms of physics and engineering, but also their conceptual frameworks. In stripping away institutional texture and historical specificity, economics began to frame its subject matter through the lens of mechanics: as a system of interacting parts governed by formal rules, not purposeful human agents responding to evolving circumstances. The result was a vision of the economy as a closed, rule-bound system where behavior could be forecast like physical motion, rather than interpreted as context-dependent human action.

Mittermaier (1986) introduces the concept of *mechanomorphism* to describe the tendency of economists to apply mechanical metaphors like equilibrium, force, flow, and reaction to

human action. Drawing on the work of Lakoff and Johnson (1981), he argues that conceptual metaphors are not merely rhetorical devices but shape how economists think and frame problems. When economics borrows metaphors from mechanics, it risks conceptualizing economic agents not as intentional actors but as objects reacting predictably to external pressures. One of Mittermaier's most vivid examples is the hydraulic metaphor common in macroeconomics: saving and consumption are depicted as liquid flows, and policy as a set of valves or pumps controlling their motion. Policymakers speak of an “overheating” economy that needs to be “cooled,” or of using fiscal “stimulus” to “jump-start” growth.<sup>3</sup> Such language frames economic management as a technical process akin to operating machinery.

Mittermaier critiques this mechanomorphic worldview for erasing the interpretive, creative, and uncertain nature of human decision-making. He traces its intellectual origins to mid-20th-century formalism, especially Paul Samuelson's effort to transform economics into a predictive science akin to physics. In constructing deterministic models, economists traded away agency for mathematical tractability. Human beings are reduced to predictable components whose behavior follows from initial conditions and imposed constraints. In doing so, economists ignore entrepreneurship, learning, surprise, and the radical uncertainty inherent in real economic life. Mittermaier thus calls for a reorientation of economic thought toward a subjectivist framework that takes seriously the interpretive nature of human action.

#### **IV. ‘Mechanomorphism’ in Modern Economics**

Modern economics is profoundly characterized by “model-speak,” a form of discourse dominated by mechanistic metaphors and concepts. Despite shifts in rhetoric towards choice and

---

<sup>3</sup> Duflo (2017) provides a contemporary example of this where she calls economists to become plumbers to predict the real world by adjusting policy design

institutions, the core methodological approach of contemporary economics remains deeply mechanomorphic. This persistent tendency to model economic phenomena mechanically significantly constrains economists' ability to grasp and explain the inherently interpretative nature of human economic interactions.

Modern economics systematically portrays economic agents as passive responders rather than active decision-makers who exercise genuine interpretative judgment. In "model-speak," individuals are typically depicted as maximizing agents who operate within clearly defined equilibrium conditions. These assumptions strip away vital elements of human action, including entrepreneurial alertness, creativity, and the nuanced trade-offs individuals face in real-world contexts. Thus, the rich tapestry of economic life, marked by continual discovery, learning, and adaptation, is severely diminished within this mechanical framework.

The mechanomorphic logic pervasive in contemporary economics is not merely a superficial rhetorical choice but fundamentally shapes the way economic questions are formulated and the kinds of answers considered acceptable. By conceptualizing economic systems as mechanical entities governed by predictable laws and equilibrium outcomes, economics implicitly reduces the scope of inquiry to problems that can be addressed within these narrow parameters. Consequently, broader interpretative and institutional dimensions that do not readily lend themselves to such mechanistic modeling are either marginalized or entirely neglected.

This mechanomorphic framework has profound implications for economic policy and institutional analysis. Policymakers, influenced by the dominant economic discourse, are encouraged to view economic management as a form of engineering or system control. Policy interventions become analogous to adjusting inputs in a mechanical system, where outcomes are

assumed to be predictable and stable. Such an approach inherently overlooks the inherent unpredictability and complexity of real-world economic systems, often leading to unintended and counterproductive consequences.

Moreover, this framework is reinforced by what Mittermaier calls "denormatized dogmatism," wherein equilibrium theory and the market mechanism are treated not as guiding ideals or normative frameworks for policy but as objective, immutable facts akin to natural laws. This stance strips away the normative and institutional considerations needed to guide and build market order, leaving only the manipulation of aggregates within a supposedly given system. Denormatized dogmatism thus complements mechanomorphism by discouraging inquiry into how institutional conditions shape or sustain markets, instead assuming that the market mechanism simply exists and can be optimized.

By emphasizing equilibrium states and deterministic outcomes, modern economic models implicitly deny or downplay the importance of genuine uncertainty and the dynamic processes of discovery that characterize real economic behavior. Rather than treating uncertainty as an essential feature of economic life that necessitates interpretative judgment and entrepreneurial decision-making, mechanomorphic economics typically reduces uncertainty to a quantifiable risk or simply ignores it altogether.

In addition, the excessive reliance on equilibrium and optimization in economic modeling effectively homogenizes economic agents and institutions, stripping away the diversity and institutional complexity that genuinely characterize economic activity. Instead of recognizing economic actors as diverse individuals operating within richly textured institutional contexts, mechanomorphic models typically portray agents as interchangeable and predictable entities whose behaviors can be reliably governed by universally applicable rules and mechanisms.

Ultimately, a fundamental methodological shift away from mechanomorphism toward an interpretative approach that fully acknowledges the complexity, creativity, and contextual richness of economic life. This interpretative approach, rooted in the Austrian tradition and emphasizing human agency and institutional context, provides a far more realistic and fruitful framework for understanding economic phenomena. By abandoning mechanistic metaphors and embracing an interpretative, subjectivist perspective, economists can more effectively explore the complexities of human action, institutional dynamics, and the emergent, spontaneous orders that genuinely characterize economic systems.

In conclusion, mechanomorphism in modern economics is a call for methodological pluralism and epistemological humility. It challenges the discipline to recognize the inherent limitations of mechanistic models and encourages economists to adopt a richer, more nuanced framework that fully captures the interpretative and institutional dimensions of economic phenomena. Only by moving beyond the restrictive confines of mechanomorphism can economics truly address the complexities and realities of human economic life.

### *Macroeconomics*

The Rational Expectations Revolution, led by Robert Lucas and Thomas Sargent in the 1970s and early 1980s, marked a pivotal shift in macroeconomic thinking. Their critique of Keynesianism, especially through the "Lucas Critique," challenged the validity of traditional macroeconomic models that ignored how rational agents adjust their expectations based on policy changes. In doing so, Lucas and Sargent brought attention to the role of institutions, particularly central banks, as critical elements shaping economic outcomes. Central banks, in this view, were not just background actors but essential institutions whose credibility and rule-making significantly influenced expectations and behavior across the economy.

However, this newfound focus on institutions remained superficial. Rather than examining the evolving, interpretative, and complex nature of institutional behavior, Lucas and Sargent framed institutions as stable rule-generating entities. As Lucas (1976) states, rational expectations theory “directs attention to the necessity of thinking of policy as the choice of stable ‘rules of the game,’ well understood by economic agents” (Lucas 1976, p. 20). Likewise, Lucas and Sargent emphasize the search for “parameters that are invariant to a set of historically unprecedented possible government policies” (Lucas and Sargent 1979, p. 55). The institutional context was treated not as an arena of discovery, negotiation, or historical contingency, but as a set of mechanical rules to which rational agents would respond optimally.

This tendency toward superficial institutional analysis was further reinforced by the work of Finn Kydland and Edward Prescott. While they acknowledged the importance of rules over discretion, as in Kydland and Prescott (1977), their models treated these rules as static, exogenous features of the environment. This approach, while powerful in demonstrating the economic consequences of discretionary versus rule-based policy, deliberately abstracts from how institutions actually emerge and become credible. Institutions in their framework become mechanical constraints governing agents' optimal responses, rather than dynamic, historically contingent structures embedded in broader social and political contexts. In doing so, the model highlights certain tradeoffs inherent in formal macroeconomic modeling: the clarity of equilibrium results comes at the cost of ignoring institutional evolution and contestation.

Kydland and Prescott (1982) was another extension of the rational expectations framework that became foundational for what would evolve into Real Business Cycle (RBC) theory. Their model focused entirely on real shocks and structural parameters, treating institutions as exogenous features of the environment. Notably, monetary institutions and central

banks were entirely absent from the analysis, though Prescott (1986) noted that incorporating monetary factors would be a fruitful avenue for future research. Indeed, the intellectual trajectory set by Kydland and Prescott eventually culminated in the development of Dynamic Stochastic General Equilibrium (DSGE) models by the late 1990s and early 2000s. While these models did formally incorporate monetary institutions such as central banks, they did so within the same mechanomorphic logic of the earlier rational expectations revolution.

In DSGE models, institutions are represented as fixed structural features or as rule-based behavioral constraints. Central banks are typically modeled through Taylor-type rules, which mechanically dictate how interest rates should adjust in response to deviations in inflation and output gaps. As Woodford (2003, p. 15) puts it, DSGE models typically assume monetary policy is characterized by “a systematic rule relating the instrument setting to the state of the economy.” Similarly, Gali (2015, p. 4) notes that DSGE models usually describe central bank behavior as “a simple interest rate rule that responds to movements in inflation and the output gap.” This frames policymakers as engineers, fine-tuning the economic machine to maintain equilibrium, leaving no space within the model for the internal deliberations, political pressures, uncertainties about objectives, or institutional learning processes within central banking. The central bank becomes a mechanical operator, perfectly implementing pre-specified rules with complete foresight and credibility.

Moreover, DSGE models impose the rational expectations assumption on all agents (Woodford 2003, pp. 11–17; Gali 2015, pp. 24–30). This assumption implies that agents perfectly understand the true structure of the economy, including the institutional rules governing policy. As a result, there is no meaningful uncertainty about institutional frameworks as agents instantly internalize any new rule and there is no room for evolutionary learning about the

effectiveness of different rules, nor interpretative ambiguity about the role of institutions.

Institutional features are simply part of the "state of the world" agents rationally optimize over, eliminating the genuine uncertainty and historical contingency inherent in institutional development. Thus, while modern macroeconomics often claims to take institutions seriously, this incorporation is largely superficial. Institutions are acknowledged rhetorically and sometimes embedded formally into models, but their true nature is systematically suppressed. The deeper institutional questions about how rules emerge, how they are interpreted and enforced, how credibility is built and lost, and how institutions adapt in the face of crises are left unexamined.

In this way, the Rational Expectations Revolution, while initially appearing to elevate the importance of institutions, ultimately led macroeconomics further into the mechanomorphic worldview. Institutions became part of the machinery rather than part of the evolving human drama that constitutes economic life. DSGE models, the culmination of this intellectual trajectory, represent the apex of "model-speak", where human creativity, institutional adaptation, and genuine uncertainty are ironed out in favor of mechanical predictability and mathematical tractability.

### *New Institutional Economics*

The New Institutional Economics (NIE) movement, led initially by Douglass North and Oliver Williamson, sought to correct the neoclassical neglect of institutions by emphasizing their critical role in shaping economic outcomes. North (1981) argued that institutions create the incentive structures that influence economic performance. Williamson (1985), similarly, examined how governance structures minimize transaction costs, suggesting that institutional arrangements evolve to economize on the costs of contracting.

While this represented an important step forward, the incorporation of institutions into economic analysis remained fundamentally mechanomorphic. In the frameworks developed by North and Williamson, institutions are treated primarily as constraint variables rather than choice variables. Economic agents maximize utility or minimize costs within a given institutional framework; the institutions themselves are largely exogenous to agent behavior in the models. The analytical focus remains firmly on equilibrium, optimization, and the comparative efficiency of alternative institutional arrangements. As a result, the process of institutional change is largely absent. Institutions are not portrayed as fluid, contested, and subject to human creativity and error; they are static rules of the game that structure the strategic choices of rational agents. This leads to a vision of economic life that, while paying rhetorical homage to the importance of institutions, remains committed to a mechanical, optimizing vision of human behavior.

This mechanomorphic tendency becomes even more pronounced in the modern empirical work on institutions led by Daron Acemoglu, Simon Johnson, and James Robinson. In their 2001 paper, they elevate institutions to the status of "first-order determinants" of economic development. Good institutions lead to prosperity; bad institutions lead to poverty. Methodologically, however, they treat institutions as exogenous causal variables that explain variations in economic outcomes. They estimate the effect of institutions on income per capita by instrumenting current institutions with settler mortality rates, presenting a causal chain in which mortality affects settlements, settlements affect early institutions, and early institutions affect current institutions, which then explain income differences (Acemoglu et al., 2001, pp. 1369–1371). As they explicitly state, "institutions are treated largely as a 'black box'" and their analysis does not address "what concrete steps would lead to an improvement in these institutions" (Acemoglu et al., 2001, p. 1395). Institutional quality is largely reduced to measures of

constraints on executive power or risk of expropriation, rather than examined as a dynamic field of human interaction and contestation. The processes through which institutions evolve are not the focus of their analysis, which instead assumes the persistence of institutional structures set in place by colonial origins (Acemoglu et al., 2001, pp. 1373–1376).

Critically, genuine uncertainty is missing from this framework. Agents in New Institutional Economics face risks but not true Knightian uncertainty. There is no room for radical ignorance, surprise, or discovery. The institutional environment is given, and agents simply maximize within it. The rich, interpretive dimension of human action, where agents create, reinterpret, and contest institutional frameworks, is absent. They respond predictably to institutional incentives; there is no room for entrepreneurial discovery, interpretative judgment, or the spontaneous evolution of new institutional forms. History is not used to trace the contingent, conflictual, and often unpredictable evolution of institutions, but instead to name and label constraints that purportedly shape economic outcomes. As a result, the analysis in Acemoglu and Robinson (2019) often reduces to the assertion that a country is the way it is because of its institutions, offering broad narratives about extractive or despotic political structures without systematically examining how those institutions actually changed through specific sequences of events, conflicts, or leadership choices. Their discussion points to patterns of state power and societal weakness but does not analyze the contingent processes, struggles, and turning points that could reveal how institutions evolved and why (Acemoglu & Robinson, 2019, pp. 18-22, 45-47).

Thus, even in the modern institutional analysis that claims to place institutions at the center of economic explanation, the deeper mechanomorphic logic of “model-speak” persists. Institutions are treated as static constraints optimizing agents navigate, not as living, evolving

structures embedded in human creativity, conflict, and uncertainty. The methodological commitment to equilibrium, maximization, and mechanical causality remains intact, crowding out the richer, more realistic vision of economic life as an open-ended, interpretative, and institutionally embedded process.

## V. Conclusion

Mechanomorphism, as Karl Mittermaier warns, is a conceptual disposition that pervasively reshaped how economists think about the world. By modeling economic agents as passive responders within deterministic systems, modern economics has marginalized the interpretive and institutional elements that make human action distinct. This paper has traced the philosophical and historical roots of mechanomorphism, from Walras's abstract equilibrium to Pareto's deterministic formalism, and examined how Mittermaier exposes this trajectory as a form of conceptual confusion.

In recovering the Austrian tradition's defense of Verstehen, we find a powerful counterpoint. Machlup's methodological postulates, Hayek's theory of complex phenomena, and Mises's theory of purposeful action each point to an economics grounded not in physical analogies, but in meaning, intention, and institutional context. These thinkers underscore that the tools of the natural sciences cannot simply be grafted onto the study of human behavior without distortion.

The persistence of mechanomorphic metaphors in modern macroeconomics shows that Mittermaier's critique is far from obsolete. If anything, it is more urgent now than ever. To move forward, economists must recognize the limits of formalism and re-engage with the philosophical foundations of their discipline. Mittermaier does not call for the abandonment of theory, but for

its reconstruction, one that treats human beings as actors embedded in history, rules, and meaning. Economics must once again become a human science.

## References

- Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review*, 91(5), 1369-1401. <https://doi.org/10.1257/aer.91.5.1369>
- Acemoglu, D., & Robinson, J. A. (2019). The narrow corridor: States, societies, and the fate of liberty. Penguin Press.
- Gali, Jordi. 2015. *Monetary Policy, Inflation, and the Business Cycle: An Introduction to the New Keynesian Framework and Its Applications*, 2nd ed. Princeton University Press.
- Hayek, F. A. (1942). Scientism and the study of society. *Economica*, 9(35), 267-291.
- Hayek, F. A. (1968). Competition as a discovery procedure. *New Studies in Philosophy, Politics, Economics and the History of Ideas*, 179-190.
- Hayek, F. A. (2015). The collected works of F. A. Hayek: Volume 15. The market and other orders (B. Caldwell, Ed.). University of Chicago Press.
- Kydland, F. E., & Prescott, E. C. (1977). Rules rather than discretion: The inconsistency of optimal plans. *Journal of Political Economy*, 85(3), 473-491.
- Kydland, F. E., & Prescott, E. C. (1982). Time to build and aggregate fluctuations. *Econometrica*, 50(6), 1345-1370. <https://doi.org/10.2307/1913386>
- Lakoff, G., & Johnson, M. (1981). Metaphors we live by. University of Chicago Press.
- Lucas, R. E. (1976). Econometric policy evaluation: A critique. In K. Brunner & A. Meltzer (Eds.), *The Phillips curve and labor markets* (pp. 19-46). Carnegie-Rochester Conference Series on Public Policy.
- Lucas, R. E., & Sargent, T. J. (1979). After Keynesian macroeconomics. *Federal Reserve Bank of Minneapolis Quarterly Review*, 3(2), 1-16.
- Machlup, F. (1969). The universal character of science. In M. Bunge (Ed.), *The critical approach to science and philosophy* (pp. 1-15). Free Press.
- Machlup, F. (1978). *Methodology of economics and other social sciences*. Academic Press.
- Mittermaier, K. (1986). Mechanomorphism: Some reflections on the state of economic theory. University of the Witwatersrand.
- Mittermaier, K. (2020). *The hand behind the invisible hand: Dogmatic and pragmatic views on free markets and the state of economic theory*. Bristol University Press.
- Mittermaier, K. (2023). *A realist philosophy of economics*. Bristol University Press.
- North, D. C. (1981). *Structure and change in economic history*. W. W. Norton & Company.
- Prescott, Edward C. 1986. "Theory Ahead of Business Cycle Measurement." *Federal Reserve Bank of Minneapolis Quarterly Review* 10 (4): 9–22.
- Williamson, O. E. (1985). *The economic institutions of capitalism*. Free Press.

Woodford, Michael. 2003. *Interest and Prices: Foundations of a Theory of Monetary Policy*. Princeton University Press.