# Mainstream, Strategic Interdependence and Economic Judgment: a methodological reconstruction from a Perceptive Perspective, 75 years after John Nash's foundational contribution

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**Abstract**

This paper proposes a methodological reconstruction of contemporary economic mainstream, privileging structural continuity over rupture theses. From a Lakatosian approach, the transformations undergone by game theory, experimental economics, and behavioral economics are examined, interpreting them as coherent extensions of the neoclassical program. Within this framework, Ariel Rubinstein's internal critique of the naturalistic view of economic theory is revisited, arguing that his perceptual stance—focused on the plausibility and representational value of models—offers more consistent grounds for sustaining the continuity of economic analysis. This methodological notion is articulated with Don Ross's ontological defense of qualitative prediction, put forward in response to Alexander Rosenberg's objections concerning the empirical entity of the discipline. The paper concludes with a reflection on the metaxioms that organize economic judgment, highlighting the internal coherence of the mainstream and its adaptive capacity.

**Keywords:** mainstream; methodological reconstruction; perceptive perspective; game theory; plausibility

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# 1. Introduction

In the second half of the 20th century, economic theory underwent a methodological transformation that marked a turning point. Although every discipline evolves, in this case the change implied the incorporation of new perspectives that broadened the analytical boundaries of economic reasoning and redefined its relationship with both empirical data and the internal demands of theoretical coherence. From the foundational contributions of Nash (1950), the analysis of strategic interdependence has transformed the notion of equilibrium. Within the framework of non-cooperative games, it became evident that rational decisions could lead to inefficient outcomes (Miller Moya, 2005, 2007), thereby challenging the image of spontaneous coordination in traditional models. As Cabrales (s.f.) emphasizes, the Nash equilibrium did not give rise to game theory itself, but it did reformulate strategic analysis, inaugurating a new heuristic within the program.

This development enabled the formalization of institutional mechanisms, redefining the role of the economist as a designer of rules (Myerson, 1999). Over time, such tools expanded the analytical horizon, fostering a closer articulation between formalization, empirical evaluation, and applicability (Miller Moya, 2021).

Game theory, experimental economics, and behavioral economics represent key milestones in this transformation. From different trajectories, each of them contributed to the representation of rational action in increasingly complex contexts, expanding the repertoire of analytical tools of the mainstream without compromising its formal coherence.

The discipline also began to engage in dialogue with other fields, without abandoning its methodological specificity. In this context, Holt y Roth (2004) highlight its evolution towards a science of institutional design; Smith (1994) and Brañas Garza y Barreda Tarrazona (2011) emphasize the empirical capacity of controlled experiments; as well as Thaler y Sunstein (2008) underscore the way in which behavioral heuristics made it possible to reshape the relationship between rationality, public policy, and welfare from the architecture of choice.

Rubinstein (1991) intervention inaugurated a methodological line that directly challenges these developments. His distinction between the naturalistic and the perceptive perspectives, along with his defense of plausibility as an epistemic criterion, enables a redefinition of the value of models beyond their predictive accuracy. Cordeiro dos Santos (2006) and Innocenti (2004) analyze this evolution as a shift from the expectation of direct validation towards structural intelligibility, showing that the tension between explanation and prediction remains central to the methodological debate.

This paper proposes a rational reconstruction of the methodological evolution of the mainstream in contemporary economics, based on an approach focused on its internal

transformations. It argues that the developments in game theory, experimental economics, and behavioral economics represent a coherent expansion of the neoclassical analytical framework.

In contrast to interpretations that emphasize the field's discontinuity—such as that of Colander (2000), who suggests an increasing fragmentation and an empirical shift detached from deductive foundations—this paper recovers the notion of research program formulated by Lakatos (1983), with the aim of showing that the core of economic analysis remains operative, while its protective belt assimilates new formal strategies, validation criteria, and empirical devices. This perspective allows for the integration of methodological pluralism without eroding the conceptual architecture of the approach.

Rather than assuming a shift in the paradigm, the starting point is the hypothesis that the mainstream can be rationally reconstructed as a research program in the Lakatosian sense, even in the presence of substantive transformations. Along these lines, the meta-xioms identified by Arnsperger y Varoufakis (2006) are introduced as analytical tools for understanding the structural continuity of the approach, beyond the diversity of methods.

On this basis, Ariel Rubinstein's internal critique is incorporated, along with his formulation of a perceptive view of economic theory, developed in his contributions on game theory (Rubinstein, 1991), experimental economics (Rubinstein, 2001), behavioral economics (Rubinstein, 2006), and economic epistemology (Rubinstein, 2000, 2017). This perspective enables a more robust interpretation of the process of internal transformation. Finally, the argument is articulated with the ontological dimension proposed by Ross (1995, 2021) in response to Rosenberg (1992, 1995) objections concerning the empirical status of the discipline.

From this perspective, economics is presented as a non-naturalistic empirical science, whose consistency is based on disciplined formalization, structural plausibility, and the representational power of its models. The perceptive view adopted in this work contributes to harmonizing the ontological, epistemological, and methodological dimensions, repositioning Rubinstein as a key methodological interlocutor and broadening the scope of the debate between Ross and Rosenberg to interpret the scientific nature of the current mainstream.

The work is organized into five sections. The first contextualizes the debate on the transformation of the economic mainstream from the discussion between continuity and rupture. The second reconstructs the expansion of the program through one of its most active positive heuristics, articulated by developments in game theory, experimental economics, and behavioral economics. The third introduces the distinction between a naturalistic reading and a perceptive perspective, showing how the latter allows for a reinterpretation of methodological innovations without assuming an epistemological rupture. The fourth deepens this reconstruction at the level of the organizing principles of the

program, integrating key contributions from Rubinstein, Arnsperger and Varoufakis, and Ross. Finally, the paper offers some reflections that synthesize the main contributions and discuss the limits and projections of the adopted approach.

## 2. Methodological transformations in the mainstream: structural continuity and representational expansion

As anticipated in the introduction, in recent decades economic analysis has undergone a significant shift in its fields of application, moving from an exercise almost exclusively oriented toward formal modeling with strong internal coherence to a practice that is more permeable to empirical evidence and attentive to the institutional contexts in which agents operate. This change did not imply abandoning deductive rigor, but rather a reconsideration of the links between theory, representation, and applicability (Cherrier, 2016).

The consolidation of neoclassical economics in the early decades of the 20th century marked a methodological turning point: the discipline was structured around formal models based on axioms, guided by deductive logic aimed at deriving empirical implications from idealized assumptions. The theoretical architecture of these models can be described, as proposed by Silberberg y Suen (2001), by distinguishing between axiomatic definitions (assertions), conditions of application (assumptions), and testable hypotheses (hypotheses), whose empirical validation was conceived in purely predictive terms.

This approach was systematized in Friedman (1953) famous essay, who defended the criterion of predictive power as a measure of the quality of models, regardless of the realism of their assumptions. His instrumentalist stance did not arise in a vacuum, rather, it was articulated on the basis of an already consolidated theoretical architecture, characterized by axiomatic logic, rigorous formalization, and a focus on deriving empirical implications. Within this framework, economics was understood as an observational, non-experimental science, and models functioned as self-sufficient analytical structures, strictly oriented toward prediction, with little attention to institutional frictions or causal mechanisms. As Der Hagopian Tlapancoa (2016) points out, this initial self-understanding conditioned the possibilities of empirical validation, restricting the attention paid to contextual diversity.

However, since the mid-20th century—and with greater intensity since the 1970s—methodological transformations began to be observed which, without breaking the formal structure of analysis, gradually introduced new epistemic demands: more plausible representations, more robust empirical contrasts, and a growing attention to the applicability of models. The formal introduction of game theory, the expansion of experimental economics, and

the emergence of behavioral economics accompanied and drove this process. These lines promoted a new type of dialogue between theory and evidence, where the value of a model lies not only in its internal consistency but also in its ability to represent relevant problems and offer inputs for the formulation of public policies.

These transformations raise a central question for the epistemology of contemporary economics: do they represent a coherent expansion of the neoclassical approach, or do they imply a theoretical inflection that challenges its traditional architecture? In methodological terms, the question concerns whether we are witnessing a progressive reconfiguration of the analytical repertoire or an alteration of the structuring principles of economic analysis. At this point, the unit of analysis that will guide subsequent developments; namely, the scientific research program in a methodological sense, is more precisely introduced.

This dilemma has been addressed from various perspectives. Colander (2000), from a viewpoint grounded in the history of economic thought and in the expected properties of a category, suggests that the notion of 'neoclassical economics' should be reserved for a specific historical moment in economic thought, structured around price theory—that is, the combination of perfect competition and general equilibrium—with maximizing agents operating in ideal markets. According to his interpretation, recent developments—more pragmatic, contextual, and oriented toward institutional intervention—do not fit into this matrix and should be understood as part of a 'new millennium economics,' characterized by its openness to evidence, interdisciplinarity, and applicability. This reading, close to a Kuhnian sensitivity, suggests that the mainstream has left behind its traditional foundations and entered a new stage that can hardly be reconstructed from inherited categories.

In contrast, Arnsperger y Varoufakis (2006) propose a more organic interpretation. Based on a characterization of the structuring principles that still underlie current mainstream practices, they argue that apparent methodological openings—including evolutionary game theory, experiments, institutional analysis, and behavioral frameworks—do not imply a genuine epistemological break. Instead, they can be understood as a functional expansion compatible with a set of metaxioms that continue operating as guiding coordinates: (1) methodological individualism, which preserves the individual agent as an analytical unit; (2) instrumental rationality, which organizes behavior based on defined preferences and consistent beliefs; and (3) the notion of equilibrium, understood as the organizing principle of analysis, even in dynamic, stochastic, or learning contexts.

From this perspective, contemporary economics has not replaced its theoretical core, but rather reconfigured its protective belt, incorporating new analytical tools without altering its structural principles. This reading, compatible with Lakatos's notion of a progressive research program, enables interpreting recent developments of the mainstream

as a methodologically coherent internal transformation rather than a paradigmatic shift. Likewise, this work highlights the reconstructive potential of this proposal by showing how the identified metaxioms can subsume both the formulations of price theory and current developments in economic analysis, without the need for a disciplinary redefinition.

This work follows that line of interpretation. It takes as its starting point the metaxioms identified in by Arnsperger y Varoufakis (2006); however, it distances itself from the critical approach that these authors develop once such principles were defined, and it does not delve into the objections they raise about the structural limits of the mainstream. It also recognizes the internal heterogeneity and tensions that run through the mainstream, but without assuming a diagnosis of rupture. On the contrary, it aims to offer a rational reconstruction of its recent evolution. Accordingly, the following section examines three temporally and methodologically connected trajectories that, since 1950, have contributed to this expansion: the consolidation of game theory as a formal language of strategic analysis, the reinterpretation of experimental economics as an instrument of plausibility, and the development of models shaped by behavioral economics. These lines not only show the plasticity of the mainstream, but also the validity of a structural logic that allows theory, evidence, and applicability to be coherently articulated. From this perspective, what follows focuses on the contemporary methodological transformations of the mainstream, interpreted as an expression of structural continuity with representational expansion.

# 3. Rational reconstruction of the mainstream internal evolution since 1950

## 3.1. From price equilibrium to strategic equilibrium (1950-1990): foundations for a heuristic expansion in neoclassical economics

The notion of neoclassical economics was introduced around 1900, as Colander (2000) notes, to systematize the marginalist synthesis based on Jevons, Menger, and Walras. Although they shared the use of marginal calculus, their approaches diverged: Jevons adopted a psychological and utilitarian perspective, Walras formulated a system of interdependent markets in general equilibrium, and Menger grounded his analysis in a subjective logic of individual decisions. This methodological diversity gave rise to differentiated trajectories: one analytical line oriented toward the mathematical formalization of the market, and another, linked to the Austrian School, focused on the interpretation of individual decisions.

In this context, throughout the twentieth century, neoclassical theory consolidated a theory

of prices as its explanatory core. Partial equilibrium (Marshall) and general equilibrium (Walras) functioned as logical devices representing the efficient allocation of resources under ideal conditions. Within this architecture, price acted as a coordinating signal for decentralized decisions, in the framework of a methodological approach committed more to deductive modeling rather than to empirical description.

Since the 1930s and 1940s, formulations aimed at modeling imperfect competition began to emerge. The reinterpretation of Cournot (1960) model—cited here according to its 1960 English translation—the revival of Bertrand (1883) approach, and, in particular, von Stackelberg (1934) sequential model provided key tools for incorporating strategic anticipation. In these frameworks, agents no longer responded to parametric prices, but internalized the reactions of others. However, there was still no general formalization comparable in scope to Walrasian equilibrium.

This limitation did not imply a paradigmatic crisis, but rather a phase of methodological stagnation in Lakatosian terms: the formal coherence of the hard core was preserved, but the difficulties in extending it to new phenomena grew. In this context, Nash's equilibrium represented a turning point. As inferred from the arguments put forward by Rubinstein (1995) and Myerson (1999), its contribution was not merely technical, but enabled a positive heuristic for modeling strategic interactions. Based on a general principle of rationality, interdependent decision-making was formalized without abandoning methodological individualism, instrumental rationality, or the principle of equilibrium.

The use of ex ante rational solutions preserved the optimizing logic of the program, now applied to strategic contexts. Non-cooperative game theory introduced tools for modeling coordination failures—such as the prisoner's dilemma—and for redesigning incentives. This enabled the emergence of the new institutional economics, which redefined the role of rules as rational structures.

When these rules become common knowledge and operate as parametric stimuli, coordination becomes technically possible. Thus, economists not only describe scenarios, but also design them: incentive engineering emerges. This transformation did not break the architecture of the research program but expanded it through more representative models of economic interaction.

The rapid incorporation of game theory can be explained by its structural coherence with expected utility theory and its compatibility with the organizing metaxioms of the mainstream. Non-cooperative games preserved the hypothesis of optimizing behavior adapted to environments with strategic interdependence, which made it possible to reconstruct parts of price analysis from a strategic perspective without abandoning structural rationalism.

Coordination games served as conceptual bridges. Although price theory and game theory operate under different assumptions (parametricity versus interdependence), some families

of games showed that efficiency could also emerge in strategic contexts, provided that incentives and common knowledge were aligned.

Since 1970, the formalization of non-cooperative games has definitively positioned game theory as the methodological foundation of microeconomics. Although it has been applied in other disciplines, its most sophisticated development occurred within the economic program. The need to represent complex phenomena, sequential decisions, and asymmetric information drove the creation of conceptual tools that preserve formal rigor without sacrificing optimization logic.

In this context, static games with complete information offered abstract representations of simultaneous interactions. Nash's theorem made it possible to guarantee the existence of equilibrium under general conditions and provided a logical basis for evaluating institutional arrangements according to their relative efficiency (Nash, 1950).

The methodological expansion continued with dynamic games. Subgame perfect equilibrium (Selten, 1975) and (Rubinstein, 1982) bargaining model made it possible to formalize intertemporal decisions. Repeated games and the folk theorems broadened the analysis of sustained cooperation. Tools such as credible punishment strategies enabled the study of compliance in contracts, competition, and regulation.

At the same time, games with incomplete information (Harsanyi, 1967, 1968a, 1968b) modeled contexts with structural uncertainty. This line of research led to the analysis of signals, adverse selection, and auctions. Bayesian equilibrium structured these scenarios, and its refinements—perfect Bayesian equilibrium (Grossman & Perry, 1986) and the intuitive criterion (Cho & Kreps, 1987)—raised the logical standard of analysis.

In short, it can be said that between 1950 and 1990, the development of game theory made it possible to expand the representational domain of economics without abandoning its formalism. This heuristic expansion reorganized the program from within: it preserved its rationalist core but projected it into new areas of interdependent complexity, strengthening its applicability without dissolving the methodological architecture of the approach.

## 3.2. Origin and consolidation of experimental economics in the mainstream (1950-2000): methodological contributions and internal validation of the program

The incorporation of experimental economics into economic analysis was neither immediate nor free of controversy. Its consolidation as a subdiscipline required a trajectory of progressive methodological validation, marked by internal tensions within the mainstream. Although it shared similar enabling conditions with game theory—in particular, the need

to formally represent strategic interactions—its reception was more gradual and demanded specific epistemic justification. While game theory was relatively quickly integrated into the formal corpus of microeconomics, experiments had to demonstrate, in a cumulative manner, their capacity to generate evidence compatible with the structural principles of the program.

Some of the first tensions arose in the field of decision theory, based on empirical results that challenged the assumptions of expected utility. The Allais Paradox (Allais, 1953) questioned the independence axiom, while the Ellsberg Paradox (Ellsberg, 1961) introduced the notion of ambiguity, showing that agents preferred situations of known risk even when the expected values were equivalent. These difficulties, however, did not undermine the theoretical core of the program. Rather, they were absorbed into the protective belt as methodological warnings, without destabilizing the deductive architecture that supported neoclassical positive heuristics. In Lakatosian terms, they did not imply direct falsification, but they did point to limits in formal representation for capturing the real behavior of agents.

A more fruitful line of development from a methodological point of view emerged in the pedagogical field. In 1948, Chamberlin designed an exercise with students to illustrate the formation of competitive prices. Since no convergence to the theoretical equilibrium was observed, the experiment was initially interpreted as an empirical objection to the model (Davis & Holt, 1993). However, in 1962, Vernon Smith reformulated this protocol through a controlled double auction, obtaining results consistent with competitive equilibrium under specific institutional rules (Smith, 1962). This experience marked a turning point: the 'failure' was no longer attributable to the theory itself, but to the experimental design. Thus, a strategy of indirect evaluation of theoretical models, centered on the institutional architecture that operationalizes it in the laboratory was inaugurated.

This interpretation was consolidated in Smith (1994) methodological proposal, inspired by the Duhem-Quine thesis: experiments do not directly refute a theory, but point to possible adjustments in auxiliary assumptions. Within this framework, the experimental economist does not act as a Popperian falsifier but as a designer of artificial environments capable of testing, calibrating, or refining theoretical implications. As (Rubinstein, 2001) suggests, one of the most relevant contributions of experimental economics is to show the distance that separates real behavior from formal predictions, even under strictly controlled conditions. This distance not only informs us about cognitive limitations, but also about the plausibility of certain mechanisms when they are transferred to concrete institutional contexts.

From this perspective, the parallelism between the laboratory and the formal model is not an empirical equivalence, but a functional relationship: it enables the identification of

regularities, the testing of mechanisms, and the evaluation of logical consistency. Davis y Holt (1993) classify the uses of experiments into four areas: hypothesis testing, condition adjustment, empirical exploration, and intervention evaluation. In each of these areas, in their view, experiments have expanded the capacity of the program to generate validatable knowledge without eroding its instrumental rationality as the structural axis of theoretical models. A complementary philosophical perspective, developed by (Guala & Salanti, 2001), reinforces this view by analyzing how the interaction between theory, experiments, and explanation in economics can be sustained without resorting to direct falsification, but rather through mechanisms of contextual validation and structural compatibility.

This process was accompanied by a growing epistemological sophistication. The notions of control, replicability, internal validity, and external validity became established as key methodological criteria. (Brandts, 2009) warns that the challenge is not merely technical: it involves constructing artificial scenarios that reproduce, with functional equivalence, the relevant theoretical conditions. The principle of experimental parallelism—as a form of indirect validation—became central to establishing meaningful links between abstract models and complex social contexts (Miller Moya & Rodríguez Marín, 2023). Together with an awareness of the trade-off between internal and external validity, this principle thus defines the methodological frontier of the discipline. Far from being an exogenous practice, experimentation became a resource for evaluating the structural coherence of economic analysis in domains where pure deduction proves insufficient.

(Sawyer et al., 1997) and (Søberg, 2005) reinforce this perspective by showing that experiments do not replace theory, but rather operate as auxiliary instruments embedded within the protective belt of the program. By holding formalism constant while testing its conditions of application, experiments reinforce the positive heuristic of the mainstream, strengthening its adaptive capacity in the face of unanticipated regularities.

The institutionalization of this practice was, however, delayed. Experimental economics was only incorporated into the JEL system in 1985, more than a decade after game theory. As Innocenti (2004) points out when presenting this data, this delay was not accidental: it reveals the persistence of an observational conception of evidence, anchored in the neoclassical tradition. The laboratory, understood as an artificial device, required additional methodological justification in a field that had been built around ideal but deductively consistent assumptions.

That resistance was gradually diminishing as experiments demonstrated their capacity to model interdependent phenomena, test institutional mechanisms, and evaluate public policies. Auctions, labor markets, taxation, public goods provision, and intertemporal negotiation became fertile domains for this methodological strategy. There, experimental design not only generated robust evidence but also tools applicable in real contexts, without

abandoning the conceptual framework of economic analysis.

The Nobel Prize awarded to Vernon Smith in 2002 institutionally sealed this integration. It did not reward a rupture, but rather the consolidation of an approach compatible with the organizing principles of the program. In Lakatosian terms, experimental economics did not represent an anomaly, but a legitimate extension of the protective belt. Its contribution was to broaden the heuristic repertoire of the mainstream, strengthening its applicability and opening up a space for empirical validation that does not compromise, but rather reinforces, its structural coherence. As it will be seen in the following section, this expansion also paved the way for the emergence of behavioral economics as a continuation of a program that expands while submitting to controlled criticism.

## 3.3. Development and institutionalization of behavioral economics in the mainstream since 1974: nuanced models and sophistication of the program

In the early stages of the discipline, when economics was still presented as political economy, it was not unusual for volitional, moral, or emotional dimensions to form part of the analysis. Over time, the consolidation of the neoclassical approach—and especially its axiomatization as a formal representation of coherent and predictable behavior—was deliberately displacing these elements. They were not excluded because they were irrelevant, but because the methodological objective became to stabilize a model of an agent capable of generating refutable hypotheses within a consistent theoretical framework.

As Marqués y Weisman (2008) point out, this strategy aimed to avoid empirical indeterminacy. In that context, behavior was not to be explained as the result of cognitive or emotional factors, but to be assumed as a structural component of the model. Within the methodological discourse of the time, the inclusion of psychological variability would have weakened the theoretical contrastability.

Over time, this horizon was taken up by different lines of thought that began to incorporate empirical requirements without dismantling the formal structure of the analysis. First game theory, then experimental economics, and later behavioral economics contributed to this process from complementary angles. Within this framework, behavioral economics deepens an already initiated trajectory: its incorporation of psychological mechanisms responds to the same logic of progressive expansion of the program representational repertoire.

Following Brandts (2009), behavioral economics is defined as a field that incorporates tools from psychology into economic analysis, without abandoning the principles of formalization that delineate the discipline. Although it is useful, this definition remains partial if it is not inscribed in the rationality structured by the homo economicus model. What distinguishes

this subdiscipline is not merely the incorporation of cognitive variables—such as loss aversion, reliance on reference points, decision heuristics, or framing effects—but the way in which such variables are integrated into the model without altering its optimization logic.

In contrast, Herbert Simon's critique aimed at a deeper redefinition of economic judgment. As Gigerenzer (2018) notes, his notion of bounded rationality was grounded in an empirically realistic disciplinary development, not subordinated to the formalizing canon. His proposal functioned as a negative heuristic, in the sense that it did not merely adjust the existing analytical apparatus but sought to replace it with a decision model based on different principles. Read in terms of the metaxioms, this position relativizes methodological individualism, questions internal consistency as an exclusive criterion of acceptability, and displaces instrumental rationality as the organizing framework. In response to this, behavioral economics reformulates the internal space of the program without altering its foundations: it adjusts the empirical content of models but it does not abandon the normative principles that structure them.

As Diacon y Calance (2014) and Esposito y Mastromatteo (2024) point out, this selective capacity to incorporate innovations without eroding the architecture explains part of the resilience of the neoclassical program. Hence, proposals such as ecological or satisficing rationality, although influential in other disciplines like administration, have not been integrated into the core of economic analysis. Behavioral economics, on the other hand, was accepted as a subdiscipline precisely because it operates within the internal parameters of that core.

Berg (2010) describes this dynamic as expanded functionalism: models remain formally consistent, but incorporate variables that enrich their representational plausibility. Rationality is not abandoned, but contextualized; the utility function is not replaced, but reconfigured. In Lakatosian terms, this evolution can be understood as an extension of the protective belt, which incorporates mechanisms and regularities without compromising the structural logic of the program.

This reformulation is clearly expressed in the empirical and formal developments that shape the field. Kahneman y Tversky (1974) introduced heuristics and biases as systematic mechanisms under uncertainty, which can be modeled and are compatible with economic analysis. Prospect theory (Kahneman & Tversky, 1979), published in Econometrica, formalized these intuitions through a value function sensitive to references and loss aversion, complementing expected utility in contexts where it was empirically insufficient, such as in corporate finance.

The dual-process model of thinking (Kahneman, 2011; Stanovich & West, 2000) distinguished between automatic (System 1) and deliberative (System 2) processes, providing

an analytical framework to explain consistent deviations from traditional rationality. This distinction did not imply abandoning rational agency, but refining its representation. In parallel, models of social preferences (Bolton & Ockenfels, 2000; Fehr & Schmidt, 1999; Rabin, 1993) expanded the utility function to include dimensions such as fairness, reciprocity, and conditional altruism, without altering the underlying optimization approach.

The architecture of choice, developed by Thaler y Sunstein (2003, 2008), shifted the focus from the agent to the design of the decision-making environment. As Cordeiro dos Santos (2006) points out, this perspective reformulates the unit of analysis without abandoning instrumental rationality: the model remains, but its contextual conditions are intervened. The concept of nudge made it possible to design non-coercive public interventions based on the redesign of available options. This approach raised normative debates, both because of the welfare assumptions it entails and the emergence of opaque strategies—so-called "dark nudges" (Sunstein, 2015)—aimed at influencing decisions in a non-transparent manner.

The concept of noise (Kahneman et al., 2022) further expanded this agenda by showing that equivalent decisions can differ due to random, non-systematic variability. Unlike bias, noise lacks predictable direction, but its cumulative effects compromise the robustness of institutions and policies. As Carrión (2024) warns, this finding compels a rethinking of institutional design from an adaptive perspective.

In perspective, as Berg (2010) points out, behavioral economics integrated empirical mechanisms that broadened the representation of behavior without altering the analytical structure of the model. Esposito y Mastromatteo (2024) deepen this reading by showing that the central assumptions of the program can be reinterpreted within more flexible analytical frameworks, without loss of theoretical coherence. From another perspective, Etzioni (2010) emphasizes that, in the face of empirical anomalies, the dominant methodological response has not been to abandon the neoclassical model, but to reformulate the notion of rationality as a continuous variable, compatible with different gradations of economic behavior. Along these lines, Diacon y Calance (2014) consider that behavioral economics provides a more nuanced characterization of rationality, without exceeding accepted formalization frameworks. Cherrier (2016), for her part, emphasizes that this evolution is part of a broader process of empirical expansion, without loss of theoretical specificity. Read from the metaxioms of Arnsperger and Varoufakis, this trajectory does not represent a break, but a progressive sophistication within the same program: the idea that economic analysis requires formal models, individuals with regularities of behavior, and an operational notion of rationality is maintained, although the latter is increasingly sensitive to the cognitive and contextual limits of agents.

The trajectory of institutionalization reinforces this continuity-based interpretation. The publication of prospect theory in Econometrica implied not only thematic recognition, but

also methodological validation in one of the most prestigious editorial spaces in economic analysis. This was not a coincidence: it reflected a deliberate attempt by Kahneman and Tversky to have a dialogue with the formalist canon of the mainstream, inscribing their contributions within the acceptable margins of disciplined economic judgment. In addition, it is worth mentioning the Nobel Prizes awarded to Kahneman in 2002 and Thaler in 2017, as well as the creation of the Behavioural Insights Team in the United Kingdom, dedicated to the design of public policies based on behavioural evidence. The latter case illustrates how behavioural economics has also transformed the professional practice of the discipline, contributing to the redefinition of its applied boundaries.

As documented by Miller Moya (2021) and Miller Moya y Rodríguez Marín (2023), this legitimization has driven the design of public policies that are situated, empirically evaluated and articulated with analytical criteria consistent with specialized economic practice. Behavioral economics, in this context, expanded the repertoire of economic analysis without exceeding the criteria of intelligibility that organize the discipline.

# 4. The rational reconstruction of the mainstream from a perceptive perspective of game theory

Although game theory is consolidated as a central analytical tool, it has not been free from controversy regarding its epistemic role. Beyond the formal structure that gives identity to mainstream contributions, differences persist concerning the scope of its models and the expectations projected on them. Within this debate, Ariel Rubinstein has offered a methodologically critical and conceptually fertile contribution. His trajectory combines technical excellence with a sustained reflection on the role of economic theory, particularly in the analysis of strategic interaction.

The essay *Comments on the Interpretation of Game Theory* (Rubinstein, 1991), published in a context of technical sophistication of refined equilibria, establishes a key methodological distinction between a naturalistic perspective and a perceptive perspective. Rubinstein does not propose abandoning game theory, but questioning the conventional interpretation of it by economists. His intervention opens up a way to preserve the deductive coherence of the formal apparatus without imposing demands for direct empirical correspondence. Instead, he introduces the criterion of plausibility as the axis of epistemic judgment, considering that the strength of economic theory lies in its ability to organize economic reasoning rather than in its immediate predictive adjustment.

The naturalistic perspective—prevalent in certain approaches to game theory—presents models as empirically testable representations. From this viewpoint, agents are conceived

as capable of processing the entire game, evaluating all contingencies, and selecting optimal strategies consistent with Nash equilibrium or its refinements. Thus, strategy is interpreted as a comprehensive plan of rational action, and the epistemic value of the model is tied to its adjustment with observed behavior. This view, critically noted by Rubinstein, has been attributed by him to figures such as Aumann and Binmore, and assumes that economic models reflect stable behaviors of agents in the social world.

In response to this, Rubinstein proposes an alternative evaluation criterion based on structural plausibility: it is not a question of conceiving models as representations subject to strong empirical validation, but of assessing their ability to organize economic judgment through consistent assumptions and disciplined reasoning. In this sense, game theory is defined by its power to clarify normative dilemmas, explore complex scenarios, and represent plausible cognitive patterns, without attempting to mimic empirical behavior.

Rubinstein criticizes naturalism for blurring the boundary between normativity and description. Demanding direct empirical adjustment from models distorts their heuristic function and impoverishes their capacity to organize economic judgment. According to his view, this tension becomes evident in the use of mixed strategies or in the analysis of games involving agents with limited memory, where formal predictions lack practical meaning and intuitive sense. These examples illustrate how empirical overload can empty formalization of its interpretive content.

From a perceptive vision, the function of the economic model is redefined. It is not about describing the world or predicting specific behaviors, but about representing analytically relevant situations in a coherent and understandable way. The model acts as a formal metaphor: its value lies in the clarity of its structure, the coherence of its assumptions, and its usefulness in eliciting disciplined reasoning. Strategy no longer operates as a prescriptive protocol, but as a conceptual resource that allows for the formalization of rational deliberation under well-specified conditions. This formulation avoids empirical reductionism without abandoning the organizing power of economic analysis.

Following his intervention to the debate on game theory, Rubinstein extends this view to its link with experimental economics. In *A Theorist's View of Experiments* (Rubinstein, 2001), he argues that models must not be discarded in the face of contradictory laboratory evidence, but rather be read with greater methodological modesty. The experiment must not seek to falsify theories, but to explore the limits of their representational plausibility. As Innocenti (2004) argues, interpreting this perspective, its value lies in highlighting mismatches between theoretical architecture and the real capacities of agents. This line of thinking, which converges with Vernon Smith's notion of the "anatomy of failure," abandons the search for crucial experiments and redefines their role as tools for conceptual refinement.

A similar logic guides his reading of behavioral economics. In texts such as *On the rhetoric of game theory* (Rubinstein, 2000) and *Discussion of Behavioral Economics* (Rubinstein, s.f.), Rubinstein emphasizes that his contributions are fruitful when they do not erode the representational function of the model. From this perspective, economics should not emulate the inductive procedures of empirical psychology, but safeguard its disciplinary specificity through formal frameworks capable of plausibly representing situations relevant to institutional and normative analysis. At this point, the term does not refer to empirical validation, but to the structural intelligibility of the model. Therefore, formalization continues to be the central language of the economist, even at the blurred frontier where the discipline dialogues methodologically with cognitive psychology. Preserving that language, without turning it into a predictive dogma, implies defending the coherence of the program against the risk of analytical fragmentation.

This methodological stance is structured around the criterion of interpretive coherence, which Rubinstein contrasts with that of prediction. A model is not true or false based on its empirical adjustment, but coherent and useful as a formal representation, depending on its intelligibility, logical structure, and ability to organize economic reasoning. This analytical reorientation makes economic analysis more aware of its limits: it avoids overstating its predictive scope without abandoning its heuristic power.

In the following section, we will show how this perspective can be read as an interpretative key to the metaxioms proposed by Arnsperger y Varoufakis (2006), and how this articulation reinforces the structural continuity of the mainstream. Far from opposing the principles of the program, Rubinstein's perceptive view offers a solid basis for reconstructing its evolution as a rational transformation, not as a paradigmatic rupture.

# 5. The perceptive resignification of metaxioms of the mainstream

## 5.1. Rubinstein and the internal framework of organizing principles

The article by Arnsperger y Varoufakis (2006), published in Panoeconomicus, offers a critical reconstruction of the principles that, according to the authors, tacitly structure the core of the economic mainstream. These metaxioms are rarely thematized explicitly; rather, they operate as historical conventions that privilege prediction as the primary criterion of scientificity. This conception, aligned with Friedmanian instrumentalism, shifts epistemological questions toward predictive efficacy, assuming that the value of a model

lies in its adjustment to reality.

From a heterodox position, Arnsperger and Varoufakis's effort constitutes, in Lakatosian terms, one of the most lucid—and paradoxically most consistent—characterizations of the methodological functioning of the mainstream. This paradox reflects the reluctance of the neoclassical tradition to make its epistemological foundations explicit, delegating such reconstructions to external actors.

The text can be read as a direct response to Colander (2000), with whom it shares concerns for the direction of the discipline, though it diverges in its diagnosis. While Colander emphasizes methodological fragmentation, Arnsperger and Varoufakis warn of an epistemic closure derived from the naturalization of unquestioned principles. In these authors' reading, the risk is to assume that metaxioms directly describe the world, dismissing the frictions between theory and reality, and thus favoring epistemological reductionism.

This observation becomes particularly relevant when contrasted with the naturalistic interpretation of game theory. In cases where reality is assumed to replicate the model—a presumption still present in certain mainstream discourses—the analytical nature of the model as a formal construction is overlooked. It is at this point that Rubinstein's perceptive perspective offers a fertile alternative: it shifts the emphasis from prediction to representational plausibility, understood as the model capacity to organize disciplined reasoning without abandoning formalization or critical reflection on its tensions with experience.

As inferred from *Dilemmas of an Economic Theorist* (Rubinstein, 2006), the economic model must not be taken as a photograph of reality, but as a fable: a formal construction that organizes the disciplined imagination of the economist. What is at stake is not the abandonment of empirical observation, but its articulation with the model under a principle of intelligibility, not of direct confirmation.

Such an interpretive shift constitutes one of the contributions that this work seeks to highlight from a reconstructive perspective. In line with the Lakatosian approach, a perceptive reading of the metaxioms allows us to conceive of them as analytical conventions that structure economic judgment from within, particularly in the most exposed methodological areas of the program.

One of the core elements of this reinterpretation is methodological individualism. While external criticism presents it as a reductionist requirement oriented toward maximizing decisions, a perceptive view reframes it: the individual agent does not represent an empirical subject, but an abstract figure that allows strategic situations to be formalized. Its function is methodological, not descriptive. Even in the face of evidence that challenges classical predictions, the principle remains valid as a formal device that enables the incorporation of contextual dimensions without diluting the specificity of economic analysis.

With regard to instrumentalism, the authors associate it with the Friedmanian defense of prediction. In its naturalistic version, this stance privileges empirical success over structural plausibility. From a perceptive view, the model is primarily a representational device, whose value lies in the logical coherence with which it organizes economic reasoning. This orientation enables a controlled methodological openness, where diverse forms of rationality can be modeled without compromising the consistency of the program. Formalization operates as a filter that preserves the structure without the need for rupture.

With regard to methodological equilibrium, heterodox criticism presents it as a mechanism that excludes open trajectories. The perceptive view does not deny the concept, but reinterprets it: equilibrium does not mimically represent the world; otherwise, it functions as an analytical structure from which to explore theoretical consequences. It is a starting point, not an interpretive closure.

In this way, Arnsperger and Varoufakis' methodological critique—although external—can be reappropriated as an opportunity for the internal reinterpretation of the program. The problem does not lie in the existence of organizing principles, but in their naturalistic interpretation. From a perceptive point of view, metaxioms can be read as formal tools that not only sustain the structural continuity of the mainstream, but also strengthen its epistemological discourse by allowing for a more reflective articulation between formalization, interpretation, and economic judgment. In this framework, the disciplined use of plausible models is not a weakness, but an epistemic strength that reinforces the internal rationality of the research program and its adaptive capacity at the contemporary frontier.

## 5.2. The ontological entity of the discipline in perceptive terms

The contrast between the naturalistic view and the perceptive perspective allows not only for a reinterpretation of the organizing principles of the mainstream, from an internal epistemological standpoint, but also for their connection to contemporary debates on the scientific status of economics. This link must not be understood as an external digression, but as a way to clarify—from the philosophy of science—the epistemic status of economic models as representational devices. It is within this framework that the controversy between Alexander Rosenberg and Don Ross is situated, as their contributions enable contextualizing the perceptive reconstruction proposed here within a broader philosophical framework, without losing sight of the internal rationality of the program.

Rosenberg (1992, 1995), in the context of the consolidation of the subdisciplines analyzed in section 3, formulates one of the most systematic critiques of the scientific status of neoclassical economics. From an empiricist perspective, he argues that a mature science must generate predictions that can be evaluated against observable facts. In this framework,

economics fails to meet the empirical validation criteria of the physical sciences and, therefore, it should be considered a conceptual discipline closer to moral philosophy than to the empirical sciences. His argument rests on three objections: (1) the limited predictive capacity of economics, (2) the absence of verifiable cumulative progress, and (3) the fact that models are evaluated for their internal coherence, not for their adjustment to evidence.

Although in later works (Rosenberg, 2025) qualifies some of his emphases, he maintains the central thesis: human intuition is not sufficient to confer full scientific status on models. While he acknowledges its explanatory capacity, he argues that it does not reach the required epistemic threshold. Without testable predictions or progressive accumulation, economics cannot be equated with mature empirical sciences.

In light of this diagnosis, Don Ross's response (Ross, 1995, 2021) takes on special relevance. Instead of appealing to classical empiricism, he proposes a reformulation of the scientificity criteria, appropriate to social sciences. He recognizes that economics cannot emulate physical predictability, but this should not invalidate its scientific character. His argument is based on the possibility of constructing models that generate plausible qualitative predictions, articulated from stable conceptual configurations.

To this end, Ross draws upon Dennett (1991) notion of the abstract pattern: structures not directly observable, yet capable of articulating coherent interpretations, identifying regularities, and anticipating behavior without requiring literal correspondence with facts. Their explanatory force lies in their capacity to organize inference from plausible conceptual frameworks.

This approach is fully compatible with Rubinstein's view, although it is situated on a different plane: ontological in Ross, epistemological in Rubinstein. Both reject naive naturalism and advocate a formal, representational, and disciplined conception of economics. They agree that scientificity is not defined by the literal adjustment between theory and data, but by the structural intelligibility of the model and its ability to organize economic judgment.

As it is shown by this articulation, the perceptive resignification of metaxioms finds in Ross an ontological anchor that reinforces its legitimacy. If the organizing principles of the mainstream operate as structuring conventions on the epistemological plane, and if at the same time, they can be conceived as activators of plausible abstract patterns, their validity does not depend on direct confirmation, but on their usefulness in guiding reasoning with coherence and continuity.

From this view, scientificity is not defined by emulating physical sciences, but by the ability to construct models that, without being literal, activate fertile interpretive frameworks, organize economic judgment, and contribute to solving problems with discipline. In this convergence between Ross's philosophy and Rubinstein's perceptive heuristics, a

methodologically reflective, empirically modest, and conceptually robust economics is consolidated. This form of scientificity not only supports the rational reconstruction of the mainstream, but also reinforces its epistemological discourse and allows its organizing principles to be conceived as dynamic tools for structuring the contemporary analytical frontier.

# 6. Final thoughts

This work proposed a methodologically informed reconstruction of the contemporary economic mainstream, in dialogue with the debate between structural continuity and disciplinary rupture. In the presence of interpretations that point to a substantive transformation of the discipline—such as Colander (2000) suggestion of a more empirical, contextual, and fragmented "new millennium economics"—it was argued here that the mainstream can be understood as a progressive research program, whose internal rationality has remained operational throughout its recent transformations. Far from accepting the idea of a paradigmatic rupture, a Lakatosian reading was recovered, one that allows these transformations to be understood as an internal sophistication articulated around structuring principles that remain valid.

The central section of the paper reconstructed in detail three key trajectories that have encouraged this expansion: the consolidation of game theory as a formal language of strategic analysis, the resignification of experimental economics as an instrument of plausibility, and the development of models nuanced by behavioral economics. These lines were not treated as technical additions, but as expressions of a rational evolution of the program, which responded to internal tensions, epistemic demands, and institutional conditions of validation. It showed how their incorporation into the mainstream core did not imply a renunciation of formalization or structural rationality, but a heuristic reorganization of economic analysis in contexts of increasing complexity.

On that basis, the paper proposed an epistemic resignification of the metaxioms identified by Arnsperger y Varoufakis (2006). From a perceptive view, these principles—individualism, instrumental rationality, and equilibrium—do not act as dogmatic constraints, but as organizing conventions that allow for the ordering, without dissolution, of the methodological diversity of the mainstream. Disciplined formalization, structural plausibility, and contextual applicability were interpreted as compatible dimensions, sustained by a logic of economic judgment that articulates theory, evidence, and institutional design without abandoning analytical rigor.

The articulation between this perceptive reading and Don Ross's ontological defense also made it possible to consolidate a more robust justification of economic scientificity. Instead

of demanding a literal empirical correspondence—typical of naturalism—it was argued that models function as representational devices capable of activating abstract patterns that organize economic reasoning with discipline. This convergence, critically analyzed in the work, legitimizes a non-naturalistic but empirically grounded conception of economics, defined by its capacity to construct interpretive frameworks that are plausible, normatively relevant, and methodologically consistent.

From this perspective, the mainstream can be understood as a structured research program whose internal rationality has been projected toward the disciplinary frontier without losing epistemic continuity. Balance, efficiency, and the nuanced representation of rationality act as organizing principles of economic judgment, even in scenarios marked by uncertainty, strategic interaction, and cognitive heterogeneity. In this reading, the economist—as Rubinstein suggests—does not act as a neutral descriptivist or social engineer, but as a disciplined interpreter who, even operating in the diffuse field of the mainstream frontier, organizes his reasoning by comparing equilibrium configurations with normatively superior alternatives. In this framework, efficiency acquires an organizing meaning in economic judgment, closer to a normative value than to an empirical prediction.

The formulated proposal in this paper does not close the debate, but offers a fertile framework—methodologically articulated and conceptually informed—for continuing to question, from within, the methodological rationality that sustains contemporary economic analysis as a scientific practice.

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