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Heliocentric Economics: A Middle Ground Between Neoclassical Monism and Heterodox Pluralism

Ekonomia heliocentryczna – złoty środek pomiędzy neoklasycznym monizmem a heterodoksyjnym pluralizmem

Abstract

Most economists argue that economics should be more pluralistic and often criticize the monistic nature of neoclassical economics (NE). My paper runs against the grain. I propose 'heliocentric economics' to show that NE's dominance has advantages over pluralistic heterodox approaches. Heliocentric economics contributes to two discussions on pluralism in economics. The first discussion (descriptive) concerns whether economics is pluralistic. Heliocentric economics depicts economics as a patchwork of approaches (pluralism) but with the dominance of NE (monism). I demonstrate how NE's axiomatic assumptions (optimization, methodological individualism and equilibrium) have defined the mainstream paradigm in economics till now. The second discussion (normative) concerns how pluralism should function. Heliocentric economics combines the advantages of monism and pluralism. First, NE's dominant paradigm serves as a benchmark that enables communication. Second, if critical dialogue exists thanks to pluralistic heterodox approaches, NE's dominance can benefit economics.

Keywords: Philosophy of Science, Pluralism, Philosophy of Economics, Neoclassical Economics, Heterodox Economics.

JEL: B40, B50

Streszczenie

Większość ekonomistów uważa, że ekonomia powinna być bardziej pluralistyczna, i krytykuje monistyczną ekonomię neoklasyczną (EN). Moja praca sytuuje się w opozycji do tej opinii. Proponuję koncepcję „ekonomii heliocentrycznej”, aby pokazać, że dominacja EN ma przewagę w porównaniu z pluralistycznymi podejściami heterodoksyjnymi. Ekonomia heliocentryczna wnosi wkład do dwóch dyskusji na temat pluralizmu w ekonomii. Pierwsza dyskusja (deskryptywna) dotyczy tego, czy ekonomia jest pluralistyczna. Ekonomia heliocentryczna przedstawia ekonomię jako patchwork różnych podejść (pluralizm), ale z dominującą pozycją EN (monizm). Pokazuję, w jaki sposób aksjomatyczne założenia EN (optymalizacja, indywidualizm metodologiczny, równowaga) definiują obecny paradygmat ekonomii mainstreamowej. Druga dyskusja (normatywna) dotyczy tego, jak pluralizm powinien funkcjonować. Ekonomia heliocentryczna łączy zalety monizmu i pluralizmu. Po pierwsze, dominujący paradygmat EN służy jako punkt odniesienia umożliwiający komunikację. Po drugie, jeśli dzięki pluralistycznym podejściom heterodoksyjnym istnieje krytyczny dialog, dominacja EN może przynosić korzyści ekonomii.

Słowa kluczowe: filozofia nauki, pluralizm, filozofia ekonomii, ekonomia neoklasyczna, ekonomia heterodoksyjna.

JEL: B40, B50



1. Introduction

The paper's main goal is to introduce a new concept: 'heliocentric economics'. With this proposition, I aim to find a middle ground between monistic neoclassical economics (NE) and pluralistic heterodoxy. Before defining heliocentric economics, I outline the broader context from which it arises to understand the problems it addresses.

There has been an enduring debate concerning pluralism in economics. To make a long story short, NE has been criticized for being a dogmatic monistic paradigm that dismisses various heterodox approaches. This is why NE is often called orthodoxy, and heterodox economics is called heterodoxy. For more than 30 years, heterodox economists have argued that economists should be more pluralistic (e.g., McCloskey, 1985; Hodgson *et al.*, 1992; Lawson, 1997, 2003; Dow, 2004; Fisher *et al.*, 2017; Lavoie, 2022). Later, I will specify in more detail what pluralism means. For now, it is enough to say that it generally refers to greater openness to other approaches, methods and ideas. The call for pluralism comes not only from heterodoxy but also from the mainstream (Hodgson *et al.*, 1992). The consensus is that economics should be pluralistic, a position perceived in opposition to dogmatism. From this binary perspective, it is hard to find economists who argue against pluralism (exception, Lari & Mäki, 2024).

In sum, two dominant narratives shape the debate on pluralism in economics. The first is descriptive: NE is perceived as a monistic paradigm that excludes various heterodox approaches. The second claim is normative: NE's monistic position is bad for economics which should be more pluralistic.

However, both claims have generated substantial debate. First, there is a descriptive discussion about whether NE still functions as a monistic paradigm. Here, we have two camps with opposing views. One argues that NE has become pluralistic in practice and therefore more mainstream (e.g., Colander, 2000, Colander *et al.*, 2004, 2011; Davis, 2006, Rodrik, 2015). The other argues that despite such changes, NE's hard core remains, which restricts pluralism (e.g., Arnsperger & Varoufakis, 2006; Dow, 2012; Hodgson, 2012; Kapeller, 2013; Gräbner & Strunk, 2020; Ostapiuk, 2021, 2024, 2025). The second debate is normative and concerns how pluralism should work in economics. The main issue is how economists working within different paradigms can communicate effectively (e.g., Dow, 2004; Dobusch & Kapeller, 2012; Larue, 2022).

My aim is to contribute to both debates (descriptive and normative) by introducing what I call heliocentric economics, which I describe in more detail later. Essentially, I suggest a middle ground between monistic NE and pluralistic heterodoxy. This differentiates my position from the dominant narrative where pluralism is perceived as good and monism as bad. I try to show that some broader version of monism can be good for economics and an overarching version of pluralism can be bad. The concept of heliocentric economics draws on an analogy to a planetary system where NE is the Sun and heterodox approaches are independent planets bound to NE.

In developing this framework, I aim to contribute to current debates on pluralism in economics. One such debate revolves around whether we monistic NE or

pluralistic mainstream. I argue that we have both. Although NE has changed over time and is open to other approaches, its core axioms remain unchanged. I argue that this led to the dominance of NE (monism). On the other hand, I also suggest that instances of pluralism exist due to heterodox approaches that can influence NE. The second debate is normative and centres on how should pluralism work. Heliocentric economics suggests combining the advantages of both monism and pluralism. The strength of monism is that NE's dominant paradigm serves as a benchmark that enables communication between different economists. The strength of pluralism is that heterodox approaches foster open and critical dialogue, therefore the dominance of NE does not necessarily to hinder the progress of economics as a science.

One question remains. Why do I deal with both debates concerning pluralism (descriptive and normative)? Independent analyses of each debate could each comprise a standalone paper. However, I connect both discussions because heliocentric economics is not a normative ideal but is based on how economics works as a science. I show how it is possible to benefit from the current situation if some requirements are met.

The paper's structure is as follows. In the first section, I analyse whether economics today is still dominated by the NE paradigm or has developed into a pluralistic mainstream. To answer this question, I review definitions of pluralism and propose my own taxonomy, with a particular focus on the axiomatic dimension of pluralism. From this perspective, I analyse how NE defended itself against criticism using three examples (new behavioural economics, new institutional economics, new neoclassical synthesis). In the second section, I outline the arguments for pluralism in economics, covering epistemological, ontological, methodological and sociological considerations. I also discuss three approaches that show epistemological benefits from pluralism: the "rhetoric approach" (McCloskey, 1985), "structured pluralism" (Dow, 2004) and "reasonable pluralism" (Larue, 2022). In the third section, I present arguments for monism. Mostly, I focus on Kuhn to argue that monism can improve puzzle-solving ability and facilitate communication among scientists. In the fourth section, I discuss my concept of heliocentric economics.

Finally, I want to underline that my discussion of pluralism and monism focuses on methodology and is done from the perspective of the philosophy of science rather than the history of economic thought and the historical development of ideas (see Roncaglia, 2019).

2. Pluralism. Is neoclassical economics dead or walking dead?

As I indicated above, most economists agree that economics should be pluralistic (Hodgson *et al.*, 1992; Salanti & Screpanti, 1997). However, the problem is defining what pluralism actually means. Different interpretations of pluralism complicate the debate over whether NE has become pluralistic. As such, I analyse different accounts of pluralism in economics and offer my understanding of it. This clarification aids a better understanding of the current state of economics and my formulation of heliocentric economics.

There are two opposing camps regarding potential changes in economics and its pluralistic character. The first argues that the current practice of economics is pluralistic and that the orthodox economics of the 1960s no longer exists (Colander, 2000, 2009; Colander *et al.*, 2004, 2011; Davis, 2006, 2008; Rodrik, 2015; Cedrini & Fontana, 2018). The main argument centres on reverse imperialism, meaning that in recent years, economics has become increasingly interdisciplinary, incorporating insights from other fields such as psychology, sociology, biology, and anthropology. Nowadays we have behavioural, complexity, evolutionary, and ecological economics among many other approaches. This openness includes accepting different methods and models (Colander *et al.*, 2004; Rodrik, 2015). Moreover, economics is experiencing an empirical turn (Backhouse & Cherrier, 2017). Under these influences, economists are generally no longer concerned with creating all-encompassing theories but instead focus on smaller, everyday problems like plumbers (Duflo, 2017). In general, economics holds less rigid assumptions than in the past, and Colander (2005) even argues that economics has abandoned the 'holy trinity' of 'rationality, greed and equilibrium'. In sum, the first camp argues that NE, in the conventional sense, is dead (Colander, 2000), transformed into a new mainstream, which is pluralistic and accepts different methods and approaches (Colander *et al.*, 2004; Colander, 2009; Davis, 2006).

The second camp disagrees, arguing that NE has not fundamentally changed (e.g., Arnsperger & Varoufakis, 2006; Dobusch & Kapeller, 2009; Berg & Gigerenzer, 2010; Dow, 2013; Elsner, 2013; Hodgson, 2012; Kapeller, 2013; Gräbner & Strunk, 2020; Ostapiuk, 2021, 2024, 2025). This viewpoint suggests that, while economics may now be more pluralistic regarding scope and method, its hard core remains based on axiomatic assumptions that define NE as a paradigm. Three such assumptions are most frequently cited: optimization, methodological individualism and equilibrium (Hahn, 1984; Kapeller, 2013). From the perspective of Lakatosian methodological research programmes (Lakatos, 1980), the claim is that NE has built a protective belt that shields its hard core against criticism (e.g., Weintraub, 1985; Arnsperger & Varoufakis, 2006; Hodgson, 2012; Dow, 2013; Kapeller, 2013; Gräbner & Sunk, 2020). In sum, the second camp concurs that economics has become more pluralistic regarding approaches and methods. However, it diverges from the first in arguing that the underlying axiomatic assumptions remain the same, and therefore economics is not pluralistic at the paradigmatic level.

What can we conclude from this discussion? The disagreement between the two camps results from different understandings of pluralism. Clarity in this regard depends on whether respective authors mean epistemological, ontological, axiomatic, methodological, or theoretical pluralism. Moreover, there is disagreement about whether economics has changed. The outcome also depends on whether we define economics by epistemology, scope, etc.

2.1. Dimensions of pluralism

I agree with both camps. I think that NE has changed and is pluralistic, but at the same time it has not changed and is not pluralistic. This contradictory position is

possible because there are different understandings of pluralism and NE. I am not the first to point out that debates arise from such divergent definitions of pluralism (e.g., Dow, 1997; Mäki, 1997; Sent, 2006; Dutt, 2014; Heise, 2016; Gräbner & Strunk, 2020). There are indeed different kinds of pluralism (e.g., ontological, methodological, epistemological, method, theoretical, paradigmatic). To help avoid confusion in this regard, I propose a taxonomy with four dimensions of pluralism: 1. disciplinarity, 2. methodology, 3. epistemology, 4. axiomatic assumptions. The goal of my taxonomy is not a thorough analysis (see Heise, 2016) but to frame the discussion between the two camps in a more helpful way. The analysis compares orthodox economics and the current situation to assess if NE has changed. However, my taxonomy has limitations. First, NE is so vast that it is impossible to judge the overall level of pluralism in economics en bloc. Second, the dimensions of the taxonomy are not clear cut (e.g., epistemology is interconnected with methodology). Third, I do not include certain dimensions, like ontological and theoretical pluralism, even though they are indicated in the literature (Heise, 2016).

1. Disciplinarity (firm yes = economics is pluralistic). By disciplinarity I mean both the scope and theories that are accepted within economic discourse. After WWII, orthodoxy did not engage with other social sciences. Today, however, reverse imperialism (the opening of economics to other sciences) seems undeniable. Economists now regularly engage with other sciences like psychology, anthropology and biology (Davis, 2006; Rodrik, 2015; Ambrosino *et al.*, 2024). Reverse imperialism is also reflected in the context of specialization, which contributes to greater internal diversity in the practice of economics (Cedrini & Fontana, 2018; Davis, 2019) and the expansion of the JEL classification system (Cherrier, 2017). Some may downplay reverse imperialism by arguing that economics has always had a vast scope. Take Robbins, for example, who defines economics as a science that studies human choices (1932). However, while in the past economists behaved imperialistically and applied economic methods to other sciences (see Becker, 1976; Lazear, 2000), reverse imperialism is different, as now economics engages with other sciences and learns from them (Colander, 2000; Davis, 2008).

2. Methodology (mostly yes = economics is pluralistic). Methodological pluralism refers to the acceptability of diverse methods. After WWII, economics experienced a formalistic revolution. The only accepted method was deduction based on mathematics where theory has priority over data. An essential part of the identity of economics was its various models in this regard (Lawson, 1997, 2003, 2013; Sugden, 2000; Colander *et al.*, 2004). However, in recent years, economics has experienced an empirical turn and is now open to different approaches (Backhouse & Cherrier, 2017). Economics no longer relies solely on deductive models. Rather, economists are more like plumbers who use empirical data to solve smaller problems (Duflo, 2017). Yet, not everyone agrees that economics is methodologically pluralistic. The best example is the reaction to Rodrik's 'library of models', which he argues is evidence of pluralism (Rodrik, 2015). However, critics suggest that, although economists indeed use diverse methods, only those that fit within the mainstream are truly accepted. Ultimately, economics still relies on models (Heise, 2016; Gräbner & Strunk, 2020). This reliance on models means that economics may be mostly,

but not fully, pluralistic in terms of methodology. Despite its reliance on models, the nature of these models has changed. The biggest shift is from deductive models which characterize orthodoxy to inductive ones which are based on empirical data (Backhouse & Cherrier, 2017). Moreover, models do not need to be formalistic but can take narrative form (Morgan, 2012).

3. Epistemology (rather yes = economics is pluralistic). Epistemology is a way to find knowledge. The topic of epistemology in economics is enormous, and my analysis only highlights essential features. After WWII, mainstream economics was strongly influenced by logical positivism, which emphasized statements that could be logically or empirically verified and dismissed questions of ethics or values as irrelevant to scientific analysis. Orthodoxy after WWII was strongly influenced by logical positivism. Economists used demarcation between analytical/synthetical statements and nonsenses like ethics or values. Only two ways of finding knowledge were accepted: deduction (analytical) and induction (synthetical). Induction needs some explanation because previously I wrote that economists had not relied on it. True, economists used induction, but they treated it like Popper (1992): to falsify theory, not to prove it and to establish objective knowledge. Deduction was the only accepted method to establish knowledge (Weintraub, 2002). In this way, Lawson (1997, 2013) and Dow (1997, 2000, 2004) interpret NE as a closed system. Moreover, logical positivism influenced economists' dismissal of values as unscientific. As such, economics aspired to be a values-free science. To conclude, orthodoxy was regarded as being based on firm epistemological foundations.

However, we live in times of epistemological uncertainty where objective knowledge cannot be found (Kuhn, 1970a; Feyerabend, 1975; Lakatos, 1980). Hands (2001) comprehensively demonstrates why economists have no means for finding objective knowledge. McCloskey (1985) meanwhile suggests that knowledge is relative, and Putnam and Walsh (2012) show that we cannot escape from values. So, if epistemological uncertainty is the only game in town, why do I argue that economics is only 'rather' pluralistic and not completely pluralistic? Although most economists understand that we cannot find objective knowledge (Van Dalen, 2019), many still perceive economics as a values-free science and rely on positive-normative distinctions.

4. Axiomatic assumptions (no = economics is not pluralistic). The last dimension is essential to my argument. I perceive axiomatic assumptions in a broader sense than axioms used in mathematics. For economics, axiomatic assumptions are presuppositions that define the NE paradigm. I perceive axiomatic assumptions similar to Lakatosian hard cores (see also Arnsperger and Varoufakis, 2006; Kapeller, 2013). When axiomatic assumptions are considered, there is no pluralism in NE. In the past, orthodox economics was based on axiomatic assumptions of optimization, methodological individualism, and equilibrium. Nowadays, NE remains rooted in the same axiomatic assumptions. My position is akin to the second camp discussed previously: although economics is pluralistic regarding theories or scope, it is not pluralistic in a paradigmatic sense. 'Paradigmatic' here refers to the Lakatosian methodological research programme (MRP, not to Kuhn (Dobusch & Kapeller, 2012; Kapeller, 2013; Heise, 2016; Gräbner, 2017; Dow, 2018;

Gräbner & Strunk, 2020). I agree with these authors, but my focus is on axiomatic assumptions rather than on the paradigmatic dimension. Why? Although I refer to Lakatos, I do not use MRP thoroughly. First, I do not focus on heuristics which are a part of MRP. Second, I do not assess whether NE is a degenerative or progressive programme. Rather, my analysis focuses only on those parts of MRP that contribute to the paper's central arguments. First, I use hard core (axiomatic assumptions) to define NE and heterodoxy. Second, I reference the protective belt to argue that axiomatic assumptions have not changed and, consequently, NE is not pluralistic in the axiomatic dimension. To justify my claim, I present a case study of three mainstream approaches, even as they are critical of orthodoxy (new behavioural economics, new institutional economics, new neoclassical synthesis). I argue that they are accepted within the mainstream because they rely on axiomatic assumptions of optimization, methodological individualism, and equilibrium. On the other hand, I argue that their heterodox siblings (old behavioural economics, institutionalism and post-Keynesian economics) are not accepted within the mainstream because they do not accept these axiomatic assumptions.

2.2. New vs. old behavioural economics

After WWII, orthodox economics assumed that people had perfect rationality and were self-interested. In this way, homo economicus always maximized utility and chose the best option. From 1980s, this position was criticized by behavioural economists who argued that people do not behave according to rational choice theory. The main criticisms in this regard concerned weakness of will, bounded rationality, and bounded self-interest (Thaler, 2015). Today, despite such criticism, new behavioural economics is regarded as mainstream. For example, Sent writes “new behavioral economics situated itself squarely within the mainstream” (2004a), and Angner proclaims that “We're all behavioral economists now” (2019). Accepting new behavioral economics was possible due to neoclassical economists' two strategies: **evasion** and **assimilation**.

My analysis focuses on two main criticisms levelled against NE by new behavioural economics: bounded rationality and bounded egoism. In the first case, NE's assumption of perfect rationality with maximization is rejected. Instead, new behavioural economists propose bounded rationality where heuristics and cognitive biases influence people. Neoclassical economists use two evasion strategies to deal with this criticism. First, they argue that people do not maximize but optimize due to various constraints. This argument means that people would make perfectly rational choices if it were not for various constraints like limited time, information, or cognitive abilities. I present two examples that show the role of such constraints. The first concerns heuristics, which neoclassical economists do not perceive as irrational. It is true that we make mistakes by using heuristics, but it saves time. If we had to think about every move, we would not be able to live (Kahneman, 2012). Moreover, heuristics are rational because they help with uncertainty and lack of information. The second example is “bounded rationality” (Simon, 1957). Bounded rationality exists because there is insufficient time to

process all information, and our cognitive powers are limited. Although bounded rationality criticizes perfect rationality (maximization), it does not dismiss the axiom of optimization, because in NE rationality is always bounded due to the world's complexity (Kales & Sent, 2005). The second evasion strategy used by neoclassical economists is to shift how rationality is understood (see Hodgson, 2012). Conventionally understood, rationality is characterized by wise choices. However, neoclassical economists avoid discussing people's goals, because it is impossible to determine rationally what people should want (Stigler & Becker, 1977). Thus, neoclassical economists perceive rationality instrumentally. From this perspective, alcoholics are rational because they follow their preferences. As a result of evasion strategies, the optimization axiom is preserved despite criticism, because people always optimize within whatever constraints they face.

The second main criticism of NE targets the model of *homo economicus*, which assumes that individuals behave egoistically to maximize utility. Many examples in new behavioural economics demonstrate that people generally behave altruistically and have other-regarding preferences (e.g., Kahneman *et al.*, 1986; Fehr & Fischbacher, 2002; Thaler, 2015). The evasion strategy used by neoclassical economists sought to broaden the understanding of utility, allowing it to be interpreted *ad libitum*. This means that utility maximization is not limited to narrow self-interest but can also include altruistic behaviour. This perception of utility as black box was captured by Becker: "individuals maximize welfare as they conceive it, whether they be selfish, altruistic, loyal, spiteful, or masochistic" (Becker, 1993, p. 386). By perceiving utility *ad libitum*, neoclassical economists can explain altruistic behaviours and evade criticism. The best example is Becker's theory of family where altruistic behaviours are explained by utility maximization (Becker, 1974). To conclude, by perceiving utility *ad libitum*, neoclassical economists can explain every action as utility-maximizing (Hodgson, 2012). Ultimately, the evasion strategies used by NE create a protective belt around the axiomatic assumption of optimization. As a result of the expanded notions of rationality and utility, criticism from new behavioural economists does not threaten the optimization's axiomatic assumption because it is unfalsifiable (Hodgson, 2012; Dow, 2013; Kapeller, 2013).

The evasion strategy shows how neoclassical economists can escape from criticism. However, it does not mean that new behavioural economics had no influence on NE. When the insights from new behavioural economics are not threatening to the axiomatic assumption of optimization, they can be assimilated. This assimilation strategy allows neoclassical economists to incorporate insights from new behavioural economics within the optimization axiomatic assumption (Berg & Gigerenzer, 2010; Dow, 2013; Osmani, 2019). For example, prospect theory can be modified by changing the shape of utility function (Osmani, 2019), bounded rationality can be modelled in game theory (Sent, 2004b) and hyperbolic discounting can be modelled within the utility framework (Ericson & Laibson, 2019). Moreover, other-regarding preferences can be assimilated within rational choice theory (e.g., Fehr & Schmitt, 2002; Gintis, 2007).

My analysis shows that new behavioural economists can be broadly regarded as working within NE. It is not an uncommon interpretation (Sent, 2004a; Earl,

2010; Berg & Gigerenzer, 2010; Dow, 2013; Truc, 2018). My argument is that new behavioural economics can be accepted as part of NE because critiques against new behavioural economics do not threaten NE's core axiomatic assumption of optimization. My claim that new behavioural economics can be perceived as part of NE seems unintuitive at first glance, because historically new behavioural economics initially emerged in opposition to NE (Thaler, 2015). However, my interpretation is justified if NE and new behavioural economics are analysed from a certain dual perspective. First, by defining NE more broadly (optimization, not perfect rationality; utility maximization, not egoism). Second, by tracing the evolution of new behavioural economics, which over time adopted NE's framework (axiomatic assumptions, mathematics). This was a conscious strategy by new behavioural economists to garner legitimacy within the discipline (see Sent, 2004a; Earl & Peng, 2012). However, we must remember that Kahneman and Thaler saw behavioural economics in opposition to NE. Ultimately, new behavioural economics and NE are different approaches. My goal is to show that, with time, elements of new behavioural might be accepted within the broader field of NE.

However, it is a different situation with old behavioural economics, which is not accepted by NE. I focus here on Simon, who is the primary proponent of old behavioural economics (Sent, 2004a). Earlier, I mentioned that Simon's 'bounded rationality' was incorporated within the NE framework of optimization. However, this integration amounted to a misappropriation of Simon's intended idea. First, Simon's notion of bounded rationality is not simply a criticism of maximization. Second, Simon did not perceive bounded rationality as optimization (best choice within constraints). In reality, Simon proposed an alternative to NE using a different understanding of rationality. He wrote about 'satisficing' when conventional knowledge and aspiration levels are essential (Simon, 1957). Satisficing is different from optimization because people make choices which are 'good enough' rather than the best choices within constraints. Simon did not agree with NE that we can deduce the behaviour of individuals from an objective environment. Instead, he argued that we must know their mental processes (Simon, 1957). Because Simon proposed an alternative program with a different axiomatic assumption from NE, his perspective has been excluded from the mainstream. In another example, "fast and frugal heuristics" (Gigerenzer & Todd, 1999) is also outside the mainstream since it rejects NE's axiomatic assumption of optimization and advocates for an alternative to it.

2.3. New institutional economics vs. institutionalism

After WWII, orthodox economics was criticized for having an atomistic approach that did not take institutions and social norms into consideration. In the 1970s and 1980s, new institutional economics (NIE) emerged as a reaction to this criticism with the intention to explain the existence of legal, social, and political institutions (Hodgson, 2007). The origin story of NIE contrasts with that of new behavioural economics in that NIE emerged from within NE. NIE as NE is explicitly based on the axiomatic assumption of methodological individualism and presupposes that

individuals behave as in rational choice theory (Kjosavik, 2003). In this way, axiomatic assumptions of methodological individualism and optimization are interconnected. NIE's goal was to relax NE's axiomatic assumptions to incorporate institutions and society within NE's framework. Moreover, assimilation and evasion strategies are interconnected in NIE. To assimilate institutions, NIE worked to evade criticism by expanding the notions of optimization and methodological individualism.

First, NIE rejected orthodox economics' notion of perfect rationality, taking the position that because of the world's complexity, uncertainty and transaction costs, it is impossible for individuals to maximize. Thus, NIE uses bounded rationality to evade criticism. Williamson writes that individuals are "intendedly rational but only limitedly so" (1985, p. 45). However, bounded rationality is still perceived through the lens of NE. Due to various external constraints, people do not maximize but optimize. Moreover, to deal with a complex and uncertain world, individuals use institutions as heuristics, routines that make decisions easier and faster (Williamson, 1985). Second, NIE admits that institutions influence people. For example, North argues that institutions, like culture and norms, guide people's behaviour. Although such a positions would make it seem that North is closer to old institutionalists, he instead operates within the framework of NE. He writes, "Defining institutions as the constraints that human beings impose on themselves makes the definition complementary to the choice theoretic approach of neoclassical economic theory" (North, 1990, p. 5). In this way, NIE uses an evasion strategy to regard institutions as environmental constraints within which people optimize. In different cultures, people have different strategies, but they always optimize. On the other hand, NIE also situates institutions as the result of rational individuals' optimizing behaviour. Institutions like firms, money, and property rights are effective and emerge to limit transaction costs.

The second crucial axiomatic assumption of NE is methodological individualism. In general, methodological individualism reduces all social explanations to individuals. Miller writes, "social explanations should be ultimately reducible to explanations in terms of people's beliefs, dispositions, and situations" (1991, p. 749). In this light, any change in individual tastes must originate within an individual (Hodgson, 2000). Thus, the individual is the foundation for NE. However, methodological individualism does not necessarily imply social atomism. It allows a flexible approach that can take all social phenomena into account, but can only be explained in terms of individuals. For example, Becker shows how cultural and social factors can alter people's choices by adding these factors to individual utility function (Becker, 1996). Despite its broadness, Becker's approach reduces social phenomena to a given individual. To explain social influences, the preference function must be considered immutable with the individual's with preferences treated as a given (Hodgson, 2000). Ultimately, institutions do not change individuals because they are treated as exogenous constraints to which individuals react, and reaction is always optimal. Today, economists no longer regard preferences as given or exogenous. A growing number of economists now study endogenous preferences that can change over time (e.g., Bowles, 1998, 2004; Akerlof & Kranton, 2005). However, this is not to say that NIE has dismissed the axiomatic assumption of

methodological individualism. Hodgson (2007) argues that even if NIE accepts endogenous preferences, it does not explain the causal mechanism by which institutions change people. NIE is still based on methodological individualism where rational individuals react to the environment, not vice versa (Kjosavik, 2003; Arnsperger & Varoufakis, 2006).

NIE and old institutionalism are distinct schools because the first uses methodological individualism and the later methodological holism. In methodological holism, social entities are autonomous and irreducible (Audi, 1995) such that social structures, like institutions, are independent of individuals' beliefs and goals. Old institutional economics therefore treats institutions differently from NIE. Rather than analysing from individuals to institutions (methodological individualism), it uses "reconstitutive downward causation" (Hodgson, 2000). In this approach, analysis is conducted from institutions to individuals (methodological holism). In this way, institutions possess causal power over individuals and fundamentally influence them (i.e., change their goals). Institutionalists like Veblen argue that the individual is not a given but is transformed by institutions. They also reject the concept of homo economicus and with it the assumption of rationality as utility maximization. Institutionalists like Veblen (1919) advocate for an alternative theory of human agency where maximization is replaced by habits and instincts. Ultimately, institutionalists reject NIE's axiomatic assumptions of optimization and methodological individualism. First, the force of habit means that people do not necessarily optimize. Second, institutions are independent from individuals, and they shape people's goals, beliefs and preferences.

To conclude, old institutionalism is a heterodox approach because it dismisses the axiomatic assumptions of methodological individualism connected with optimization. Instead, it is based on methodological holism where human behaviour is explained by institutions. Institutionalists proposed an alternative paradigm to NE. Thus, they are not accepted within the mainstream.

2.4. New neoclassical synthesis vs. post-Keynesian economics

Keynes posited the best-known criticism of NE's equilibrium, arguing that there is persistent unemployment due to price rigidity and wage stickiness. Moreover, he asserted that the economy inevitably experiences booms and busts because of animal spirits. Ultimately, the free market does not lead to equilibrium as NE assumes because there is no perfect correcting mechanism. After WWII, neo-Keynesian economists sought to explain short-term fluctuations while maintaining the assumption of long-run equilibrium, a project referred to as the 'neoclassical synthesis' (Hicks, 1937; Samuelson, 1948). In the 1990s, a subsequent 'new neoclassical synthesis' emerged, which is what I focus on here. This approach provided a more rigorous microfoundation for integrating Keynesian short-run dynamics within a neoclassical framework. Thus, it illustrates more clearly how NE preserve its hard core.

The 'synthesis' in new neoclassical economics refers to the incorporation of Keynesian insights into NE's intertemporal equilibrium framework. In this view,

short-term disequilibria may occur, but the economy is assumed to return to equilibrium in the long run. New neoclassical synthesis develops this framework by combining the dynamic aspects of RBC (real business cycle) with imperfect competition and nominal rigidities of new Keynesian models, the goal being to explain short-term fluctuations within NE's framework.

Goodfriend and King (1997) distinguished four main assumptions regarding new neoclassical synthesis: intertemporal optimization, rational expectations, imperfect competition and costly price adjustment (menu costs). The first two assumptions result from Lucas' critique of neoclassical synthesis. Lucas argued that macroeconomics requires proper microfoundations based on a representative agent and rational expectations (Lucas, 1976). The two latter assumptions come from the New Keynesians. While new neoclassical synthesis is widely applicable to many issues, my analysis focuses on the axiomatic assumption of equilibrium. New neoclassical synthesis uses both evasion and assimilation strategies. They are interconnected because the goal is to reconcile NE's long-term equilibrium with Keynes' short-term disequilibrium. The evasion strategy is introduced to explain why equilibrium is not achieved due to constraints. The assimilation strategy develops Keynes' ideas. I analyse three examples to show how these strategies protect the equilibrium axiom.

The first example concerns equilibrium in the labour market. Neoclassical economists argue that an equilibrium mechanism exists in a competitive labour market. Unemployment induces wage reductions until the demand for workers meets the supply. Keynes (1936) challenged this view, arguing that wage stickiness leads to involuntary unemployment. New Keynesians introduce ad hoc assumptions to account for the absence of equilibrium under perfect competition and to explain the persistence of unemployment (Lavoie, 2022, p. 146). New Keynesians retain Keynes view on the downward rigidity of wages but develop this concept in new ways. For example, Akerlof (2007) cites exogenous behavioural norms as a reason for the downward rigidity of wages. In efficiency wage theory, higher wages are given by employers to increase workers' productivity (Greenwald & Stiglitz, 1987). In general, New Keynesians added various exogenous constraints to account for the market's imperfections and explain why the equilibrium mechanism does not work perfectly. However, New Keynesians do not entirely dismiss the equilibrium mechanism, asserting that it would work if it were not for exogenous constraints.

The second example concerns fluctuations in the economy. Neoclassical economists assume an ideal competitive market where supply and demand are in equilibrium, an assumption called into question by Keynes (1936). To explain fluctuations, new neoclassical synthesis introduces various shocks and frictions. However, this school is not homogenous in this respect. The first group focuses on real business cycle (RBC) models (Kydland & Prescott, 1982), arguing that business cycles result from exogenous shocks, particularly technological changes and shifts in the availability of resources. The second group (New Keynesians) argues that other shocks and frictions should also be considered, such as monetary policy, information asymmetries, labour frictions and general uncertainty (Galí, 2018). Despite this difference, all schools in new synthesis explain economic fluctuations through

exogenous variables required to move the system from one equilibrium to another (Dow, 2012).

The last example concerns rational expectations. As with previous examples, ad hoc assumptions are added to protect NE's axiomatic assumptions. New Keynesians argue that rational expectations are distorted by asymmetric information that can lead to market failures. For example, lenders may lend less to borrowers because they cannot fully assess borrowers in the absence of reliable information (Van Ees & Garretsen, 1993). By relaxing perfect information assumptions, new neoclassical synthesis is able to account for such market failures. This evasion strategy has been analysed by Kapeller (2018) in the context of Akerlof's "market for lemons" (Akerlof, 1970). Akerlof replaces the assumption of "complete information" with "asymmetrical information" to explain why suboptimal results emerge in competitive markets. In a similar way, new neoclassical synthesis preserves the equilibrium axiomatic assumption.

To conclude, I analysed three examples to show how the equilibrium axiomatic assumption is shielded from criticism. The evasion strategy is used to explain why equilibrium is not achieved and various ad hoc assumptions are introduced (imperfect market, shocks, and asymmetry of information). Despite these developments, the equilibrium axiomatic assumption remains a normative foundation for new neoclassical synthesis. I now turn to post-Keynesians, who represent a heterodox perspective dismissive of all of NE's axiomatic assumptions.

Post-Keynesians argue that Keynes is misinterpreted by new neoclassical synthesis. The first misinterpretation concerns optimization. New neoclassical synthesis admits that people have bounded rationality and behave irrationally, for example, due to asymmetry of information. However, perfect rationality is still used as a normative benchmark. For instance, Akerlof and Shiller (2009) take into account Keynesian animal spirits but treat them as irrational. This is a misinterpretation of Keynes because he did not follow optimization logic. His position is closer to that of old behavioural economics, which takes the view that people rely on habits and instincts. This is why post-Keynesians dismiss the NE axiomatic assumption of optimization (Lavoie, 2022, p. 86). The second misinterpretation concerns methodological individualism. New neoclassical synthesis is based on a representative agent used in DSGE models (Kirman, 1992). Keynes cannot serve as a model in this context because he did not account for a representative agent. For him, individual behaviour is based on social conventions as in methodological holism, underlining the importance of power relations and herd behaviour. Moreover, Keynes argues that social interactions create various systematic effects on the macroeconomic level, as in the fallacy of composition where what is rational for a single individual results in irrational collective behaviour. Thus, post-Keynesians base their microeconomics on old institutionalism (Lavoie, 2022, p. 30). The third misinterpretation concerns equilibrium. New Keynesians assimilate short-time disequilibrium into the new synthesis framework. For post-Keynesians, this amounts to a misinterpretation of Keynes for two reasons. First, in neoclassical equilibrium models, all variables are assumed to be known with some probabilistic degree, whereas Keynes emphasizes radical uncertainty that cannot be quantified (see Davidson, 1996; Dow, 2004; Lavoie,

2022). Second, new neoclassical synthesis uses what Robinson (1980) calls ‘logical time’ where every decision is new and there is no connection to history. Instead, Keynes uses ‘historical time’ where time is irreversible, and previous conditions influence the final position of equilibrium. In these ways, path dependency differentiates post-Keynesians from new neoclassical synthesis (Lavoie, 2022, p. 36).

To conclude, post-Keynesian economics can be regarded as heterodox because it proposes an alternative program to NE. The main difference concerns the equilibrium axiomatic assumption. Post-Keynesians reject the concept of long-term equilibrium used in new neoclassical synthesis and dismiss the axiomatic assumptions of optimization and methodological individualism.

2.5. Conclusions

In my analysis, I aimed to demonstrate that reverse imperialism has not fundamentally changed economics and has not made it pluralistic at the level of axiomatic assumptions. I show that the hard core of NE (axiomatic assumptions of optimization, methodological individualism and equilibrium) remains intact. Rather, changes have instead taken place in the protective belt, which shields NE’s hard core (axiomatic assumptions) from criticism (evasion strategy) and allows NE to incorporate elements drawn from other approaches (assimilation strategy). My conclusions are in line with the concept of “axiomatic variation” discussed by Kapeller (2013, 2018) and others who emphasize NE’s immunization strategies (e.g., Arnsperger & Varoufakis, 2006; Hodgson, 2012; Dow, 2013).

My analysis leads to two other conclusions. First, it outlines my understanding of NE. In this paper, NE is not defined by scope or methods but by axiomatic assumptions. Although economics has broadened its scope and methods, its axiomatic assumptions remain unchanged. Thus, NE is not dead and has not been replaced by a new mainstream.

Second, my analysis provides a particular interpretation of heterodox economics. This interpretation plays a role in the context of heliocentric economics, which I detail later. There is no consensus on how to define heterodox economics (see Dow, 2000, 2004, 2013, 2018; Lawson, 2003, 2006; Colander *et al.*, 2004; Dequech, 2007; Colander, 2009; Mearman, 2012; Heise, 2016; Kvangraven & Alves, 2019; Mearman *et al.*, 2023), and there is no room in this paper to entertain a discussion of such. Rather, for present purposes, I define heterodoxy as NE according to axiomatic assumptions.

In this section I have shown how axiomatic assumptions enables NE to absorb criticism, thereby maintaining its dominance over heterodox approaches. In the following sections I turn to the normative question: Is it good that monistic NE dominates?

3. Argument for pluralism

Before presenting the arguments for NE's dominance, I analyse arguments for pluralism. Although I argue for a dominant paradigm, I agree with the criticism against NE and think that pluralism has many advantages. I first synthesize general arguments for pluralism in the context of economics (see Gräbner & Strunk, 2020; Gräbner, 2017; Dobusch & Kapeller, 2012; Kapeller, 2013; Garnett *et al.*, 2009; Fullbrook, 2008; Dow, 2004, 2018; Heise, 2016), then I analyse the epistemological benefits of pluralism (McCloskey, 1994; Dow, 2004; Larue, 2022).

The first argument for pluralism comes from epistemology. Kuhn (1970), Lakatos (1980) and Feyerabend (1975) demonstrated long ago that we have no method to establish a paradigm for determining universal truth. The contemporary philosophy of science is anti-fundamentalist and characterizes science as constantly changing. Even the most established theories can be discredited and replaced. Thus, we should be open to other paradigms. In economics, Hands (2001) shows that NE is not superior to other approaches since there is no universal scientific method anymore. The second argument comes from ontology. The argument is made by open system realists (Lawson, 1997, 2003; Dow, 1997, 2000, 2004) who argue that our social world is so complex that it is impossible to represent it with a single theory or method. Thus, a plurality of theories and methods is necessary (King, 2002; Gräbner, 2017). Moreover, one single economist cannot understand this complex social world due to his or her own cognitive limitations. Thus, a plurality of views is necessary (Van Bouwel, 2005). This has emerged thanks to increasing specialization (Cedrini & Fontana, 2018). The third argument for pluralism is that, proceeding from Kuhn (1970), scientific paradigms are lenses that shape the work and worldviews of scientists. This is supported by other authors who have underlined the influence of theories and even personal views on researchers' perception of reality ("maps" in Gerie, 2006; "metaphysical assumptions" in Boland, 1997; "Weltanschauung" in Weber, 1949). The main point in this body of literature is that scientists ought to have different paradigms to understand reality in different ways. As such, if economists use only neoclassical lenses, they see reality in only one particular way. Thus, neoclassical economists see unemployment differently than post-Keynesians, view cognitive biases differently than old behavioural economists, and explain the existence of money differently than institutionalists. If one views the economy solely through a NE lens, it is like having only a hammer in your toolbox: everything appears to be a nail.

The last argument for pluralism is different from the previous ones because it focuses on social aspects. Some economists can use the relativity of science to justify NE's domination. The argument goes like this: if we cannot rationally choose which paradigm is better, it is up to scientists to decide. If the economic community chooses NE over heterodoxy, so be it. This argument assumes some ideal marketplace of ideas from which economists choose. The problem is that it assumes a level playing field between ideas, which does not exist in reality. Due to path dependency and self-reinforcing mechanisms, the chasm between NE and heterodoxy grows irrespective of their quality (Gräbner, 2017; Gräbner & Strunk, 2020; Dobusch & Kapeller, 2012).

The first self-reinforcing mechanism relates to the hierarchical nature of economics which relies heavily on various rankings; for example, the domination of the top five economics journals (Fourcade *et al.*, 2015; Heckman & Moktan, 2020). It is difficult for heterodox economists to publish in the most popular mainstream journals. Thus, heterodoxy has a lower citation rate which leads to further marginalization. The connected cause of marginalization is a fact that heterodox economists cite in the mainstream, but not the other way around (Dobusch & Kapeller, 2012; Kapeller *et al.*, 2017). The second self-reinforcing mechanism relates to epistemic costs. Yalcintas (2016) shows that economists stick to familiar paradigms because they invest time in them. Thus, neoclassical economists are not open to alternative paradigms even when their preferred paradigm is constantly criticized. The third reinforcing mechanism relates to academic power (see Gräbner & Strunk, 2020; Gräbner, 2017; Decker *et al.*, 2018; Wright, 2024). Often, heterodox economists do not work in economic departments. Rather, they tend to find posts in other social science departments. Academic power is also connected with the dominance of American universities, which are more neoclassical than their more pluralistic counterparts located in Europe or South America. The last reinforcing mechanism relates to teaching. Decker *et al.* (2018) thoroughly analyse this issue, so I only underline the importance of teaching. Samuelson exaggerated, “I don’t care who writes a nation’s laws, if I can write its economics textbooks” (cited after Skousen, 1997, p. 150). However, textbooks are essential in securing paradigm dominance. Kuhn (1970) argues that textbooks favour winning theories, marginalizing other historically important perspectives. This is the case of economics. When we look at textbooks, we might think there is only one way of doing economics: the neoclassical way (Mankiw, 2001). This is why, in recent years, many students have protested against curriculums based on neoclassical material as the only way to do economics (Earle *et al.*, 2016).

The key takeaway from this analysis is that the mere existence of various heterodox approaches does not lead to pluralism. Without a level playing field, heterodoxy is always likely to be marginalized.

3.1. Epistemological benefits of pluralism

Until now, pluralism has been justified primarily by highlighting the weaknesses of monism. Although monism has its problems, an unconstrained pluralism may be even more problematic, leading to anything goes (Backhouse, 1998). For this reason, many advocates of pluralism argue that it enhances scientific practice by offering epistemological benefits. I analyse three approaches in this regard to gauge how pluralism can improve economics: the “rhetoric approach” (McCloskey, 1994, 1998), “structured pluralism” (Dow, 2004), and “reasonable pluralism” (Larue, 2022).

At its core, the rhetoric approach is based on pluralism. McCloskey sees science as “marketplace of ideas” (McCloskey, 1998, p. 28) in which open discussion is necessary. Her justification for pluralism is partly based on ethics: we should be tolerant of dissenting views. However, she also offers an epistemological argument, that pluralistic discussion enhances scientific practice. This does not imply

an anything-goes position. Not all arguments are equally valid as they are assessed by community standards sustained by the “demand that we persuade each other” (McCloskey, 1994, p. 310). Moreover, a level playing field is a precondition for such dialog. In this regard, McCloskey emphasizes the need for “civilized conversation among equals” (McCloskey, 2001, p. 107) and illustrates how ideas from neoclassical, Marxian, and Austrian economics can lead to constructive discussion (McCloskey, 1994). However, she does not explain in detail how such discussion is possible, an issue later addressed by Dow (2004).

Dow’s argument for methodological pluralism is based on economic schools of thought which are distinguished by paradigms where different methodologies and languages are used. Thus, pluralism requires tolerating different economic schools of thought. At the same time, economic schools of thought constrain pluralism and protect it from devolving into anything-goes, hence Dow’s “structured pluralism”. First, the number of schools is a limited. Second, you need to convince others to join your school. Dow argues that communication between different economic schools of thought improves science because it leads to new knowledge. This is a controversial claim, as discussions between different paradigms is regarded as impossible. Dow argues that this view misrepresents Kuhn in two ways. First, incommensurability between paradigms does not mean a lack of communication but that communication is hard. Dow uses Kuhn’s distinction between understanding and translating the language of different paradigms (Kuhn, 1970b). Dow proposes an “exercise in hermeneutics” aimed at interpreting and therefore understanding the language of different paradigms (Dow, 2004, p. 279). Understanding different concepts in different schools of thought enables communication which advances scientific knowledge. The second misconception concerns the idea that incommensurability leads to anything-goes, which make paradigms, immune to criticism. However, Dow argues that criticism is possible if we make the hermeneutic effort to understand another paradigm’s language. For example, we can criticize inconsistencies within a paradigm. And cross-paradigmatic criticism is also possible: if paradigm A is criticized by paradigm B, A must respond using its own principles (Dow, 2004). Dow’s structured pluralism thus demonstrates that communication between different schools of thought based on different paradigms is possible. However, she does not specify what exact conditions are necessary for fruitful communication between paradigms when fundamental disagreements occur. Larue (2022) tried to provide such conditions.

Larue’s goal is highlight the epistemological benefits of pluralism (Larue, 2022). His argument for pluralism is analogous to Mill’s defence of freedom of expression (Mill, 1974). First, pluralism helps us identify a correct or appropriate theory. Second, even if such a theory already exists, competing theories can refine it. However, pluralistic discussion does not always lead to epistemological benefits. Scientists may disagree on values or may even avoid having a dialog. To address this, Larue proposes ‘reasonable pluralism’, a framework designed to make pluralistic discussion productive. Reasonable pluralism provides a basis for evaluating competing theories even if different communities disagree about what constitutes good theory. Larue argues that debates are possible if members of each community refer to Kuhn’s

‘epistemic values’ that motivate their theory (accuracy, consistency, simplicity, fruitfulness and broadness of scope [Kuhn, 1977]). Reasonable pluralism presupposes that “economists will agree on a common set of epistemic values” (Larue, 2022, p. 10). This is an ideal condition because economists do not need to agree on epistemic values. However, discussion is still possible. Even if different theories are justified by different values, all communities accept that epistemic values are important. Thus, some can refer to rigor, others to accuracy. Each community can understand the same value differently (e.g., rigor). Even if ‘rigor’ may have various meanings, each community should be able to convince others that its view of rigor justifies its particular theory. For Larue, methodological disagreement can thus be fruitful, because all scientists are committed to epistemic values. He presents the debate between ecological and neoclassical economics as an example. In the end, the shared acceptance of epistemic values makes pluralism possible.

The analysis of these three approaches shows that pluralism can lead to epistemological benefits. All authors agree that communication across paradigms is difficult. However, all agree that communication is possible. In the next section I examine communication more closely, as communication problems pose the greatest threat to pluralism.

4. Argument for monism

At the outset, I want to specify that I do not address the anything-goes argument that is sometimes used to criticise pluralism. This argument is a scapegoat, since most pluralists do not equate pluralism with an anything-goes position (Sent, 2006; Dobusch & Kapeller, 2012; Bigo & Negru, 2008; Gräbner & Strunk, 2020). Instead, the central pluralist positions are “structured pluralism” (Dow, 2004) or “reasonable pluralism” (Larue, 2022). On the other hand, my claim for monism is limited as in structured or reasonable pluralism. In this paper, I defend monism which is perceived as a domination of one approach but without complete exclusion of other approaches. In this way, I argue for a broader understanding of monism than the idea of a single, all-encompassing framework for interpreting reality (Kellert *et al.*, 2006, p. x). Thus, my claim is not against pluralism or critical discussion. My goal is to show the advantages of one dominant paradigm. Why is it important? Critics of NE often present a narrative in which NE’s dominance is explained solely by social power and indoctrination (Earle *et al.*, 2016). Although self-reinforcing mechanisms plays an important role, they do not entirely account for NE’s domination. Thus, in this section I outline normative arguments for NE’s domination.

4.1. Advantages of one dominant paradigm in economics

For Kuhn, the dominance of a single paradigm indicates that a field has reached the stage of a mature “normal science” (Kuhn, 1970a). By contrast, prenormal science is pluralistic. There is no consensus on methods, research questions or criteria. In Kuhn’s view, science advances when a scientific community agrees on

specific standards defined within a paradigm. When a paradigm is established, some dogmatism is beneficial. Scientists cannot constantly question their presuppositions. Only some members of a community can do this (e.g., philosophers of economics). For a normal scientist, it is more effective to apply the paradigm's methods, no questions asked. A mature science with one dominant paradigm provides scientists with epistemological benefits. When they work within a paradigm, they do not question its assumption. Instead, they focus on puzzle-solving (Kuhn, 1970a). Kuhn regards NE as a mature science. It has a unified framework that is used to solve many puzzles (Lazear, 2000). Even though it faces ongoing criticism, the economic approach is effective and has puzzle-solving ability (Rodrik, 2015). Gräbner describes this effectiveness using the acronym TAPAS: "Take A Previous Model and Add Something" (Gräbner, 2017). From this perspective, plurality can slow the progress of economics, not accelerate it (see Gintis, 2009; Colander, 2014; Hodgson, 2019).

Moreover, a single dominant paradigm improves communication. In the previous section, complexity was used as an argument for pluralism, but it can also justify monism because of the burden of knowledge. The world is highly complex and scientists have limited cognitive capacity. Thus, most scientists are not active pluralists but instead specialize in specific areas of research. Although specialization improves effectiveness, it also reduces mutual understanding in an increasingly fragmented scientific landscape (Cedrini & Fontana, 2018; Davis, 2019; Lari & Mäki, 2024). In this context, the advantage of a dominant paradigm is that it unifies the scientific community and provides a shared framework. It is easier to collaborate within a paradigm because scientists share the same language, tools and methods. Ultimately, this unification improves puzzle-solving (Kuhn, 1970a).

4.2. Disadvantages of pluralism in economics

The disadvantages of pluralism can be understood as a mirror image of the advantages of monism. I focus on two key problems in pluralistic heterodox economics: difficulties with puzzle-solving and challenges in communication. It is tempting to use Kuhn's framework to define heterodox economics as immature/prenormal science given the coexistence of many approaches with different methodologies. However, Kuhn's model does not entirely fit heterodox economics, mainly because heterodoxy was a reaction to NE's dominant paradigm. Heterodox economists are not like Presocratics who posed questions before the crystallization of the scientific method. Still, heterodoxy faces a similar problem as prenormal science: persistent methodological questioning. This focus is rational for heterodox economists to distinguish themselves from NE. Otherwise, they would be swallowed up. However, this emphasis leads to a hermeneutic circle, a constant self-analysis of methodology. As a result, heterodoxy devotes less time to puzzle-solving which hinders their progress (Colander, 2009). The second problem with pluralism concerns communication. In the previous section, I discussed reasonable and structured pluralism and concluded that communication between different paradigms is possible but hard. There are two main challenges to pluralism: 1) the lack of common standards

between different theories, and 2) communication between antagonistic theorists (Gräbner & Strunk, 2020; Larue, 2022).

I begin with communication between antagonistic theories (NE vs heterodoxy). Here, the situation not only falls short of reasonable pluralism but of pluralism itself. Some heterodox economists dispute the value of pluralism as a strategy that would make heterodoxy more influential, as Dow claims (1997, 2000, 2004). Davidson (2004) argues that pluralism actually leads to the marginalization of heterodoxy. Thus, Davidson proposed a different strategy where heterodox economists develop a superior alternative paradigm to NE. This was attempted in the 1970 and 1980s by some Austrian, Marxian, post-Keynesian, and institutionalist economists, but ultimately failed (King, 2002). Calls for unifying heterodoxy into a competing paradigm continue today (see Lavoie, 2022). Garnett (2006) calls this orientation “paradigmism”. The problem with paradigmism is that some heterodox economists only pretend to be pluralist while aiming to make their own approaches new dominant paradigms (Sent, 2003; Colander, 2009). Garnett (2006) calls them “pragmatic warriors”, Giere (2006) describes this as “strategic pluralism”, and Dobusch & Kapeller (2012) refer to it as “selfish pluralism”. Clearly, “paradigmism” runs counter to the spirit of pluralism (Dow, 2004; Garnett, 2006; Holcombe, 2008; Dobusch & Kapeller, 2012). In this context, the communication between NE and heterodoxy does not generate epistemological benefits. Garnett (2006) argues that paradigmism fosters a preoccupation with the separateness and uniqueness of one’s paradigm compared to others. The result is a bunker mentality, an Us-versus-Them approach, that blocks critical and pluralistic exchanges that can advance science.

From this analysis, it might appear that there is no communication between antagonistic paradigms. However, it is an oversimplification. Most supporters of pluralism genuinely seek dialogue. The problem is that communication between different paradigms is hard due to incommensurability. I agree that understanding other paradigms is possible through exercises in hermeneutics (Dow, 2004) and reference to shared epistemic values (Larue, 2022). However, real challenge is using multiple paradigms to achieve epistemological benefits. It is very hard to simultaneously use multiple paradigms in research, since paradigms are essentially lenses that shape scientists’ perceptions of the world, much like Wittgenstein’s rabbit/duck. Either you see a rabbit or a duck. The case study I detailed earlier shows that axioms shape scientists’ research. Neoclassical economists analyse reality in a completely different way than old behavioural economists, institutionalists and post-Keynesians. While cross-paradigmatic criticism is possible in principle, its feasibility is limited. Rolin (2009) calls this the ‘paradox of outside criticism’. Mutual understanding is impossible because criticism is levelled from a particular perspective. So, if members of paradigm B criticize paradigm A members for not giving feasible explanations, the argument is circular because members of paradigm A invoke paradigm A standards. Larue (2022) proposed epistemic values to establish common standards between theories, scientists interpret these values so differently that communication is impossible in some cases (e.g., rigor in post-Keynesian vs. NE). Clearly, methodological discussions can lead to improvement as Larue indicated. I agree that it would be better for everyone to put their epistemic values on

the table. But it seems like Habermas' ideal speech situation, a condition rarely met in scientific practice. Using epistemic values as a common standard is challenging because they are interpreted differently across scientific communities. Moreover, due to prolonged theoretical debate, the meaning of such epistemic values are not entirely transparent even to the adherents of a particular paradigm. Thus, methodological discussions often lead to a dead end, as illustrated by debates between competing schools of thought in economics.

Dow (2012, ch. 4) refers to this as the “Babylonian mode of thought”. She argues that while pluralism in economics allows many paradigms to coexist, it can also lead to a Tower of Babel effect where many paradigms with many languages hinder effective communication. Yes, scientists can refer to epistemic values, and exercises in hermeneutics enable inter-paradigmatic discussion. However, in reality, a pluralistic dialog between different paradigms leads to confusion or even hostility as in the case of neoclassical and heterodox economics. In the next section, I propose heliocentric economics as a framework to make such discussions more constructive.

5. Heliocentric economics

In this paper, I have analysed two discussions concerning pluralism in economics. The descriptive discussion addresses the question of economics as pluralistic or monistic. The normative discussion concerns how pluralism should be structured. In this section, I present heliocentric economics as a contribution to both debates. Heliocentric economics is a middle ground between monistic neoclassical economics and pluralistic heterodoxy. Descriptively, it represents a middle ground by situating economics as a patchwork of approaches (pluralism) yet dominated by NE (monism). Normatively, heliocentric economics serves a middle ground by combining the advantages of monism and pluralism to improve the practice of economics.

Descriptively, heliocentric economics characterizes the current state of economics in contrast to Kuhn's framework. I contrast heliocentric economics with Kuhn because his framework is used to analyse economics (Garnett, 2006; Fullbrook, 2008; Fisher *et al.*, 2017). The descriptive argument is that a single neoclassical paradigm in economics leads to dogmatism and marginalization of heterodoxy. The normative argument is that heterodoxy must present a competitive alternative paradigm to overcome NE (“paradigmism”, Garnett, 2006).

I suggest that Kuhn's paradigm does not accurately depict the current situation in economics, and consequently, the prescriptions based on this analysis are problematic. First, Kuhn developed his framework for natural sciences, not social sciences. In natural sciences like physics, one paradigm prevails, whereas in social sciences many paradigms can coexist (see Dow, 2004). In this context, economics bears affinity to social sciences because it contains many paradigms. However, economics differs from other social sciences like sociology where many equal paradigms coexist. In economics, NE is a dominant paradigm, whereas other approaches are less influential. The second problem with applying Kuhn's framework to economics is that the NE paradigm is not accepted unconditionally. Criticism

of NE is widespread and comes not only from heterodox economics but also from within neoclassical economics itself. While rejecting NE completely may limit one's prospects of publishing in top mainstream journals, economics is not like biology, where criticizing Darwin might place one entirely outside the scientific community (see Hoyningen-Huene & Kincaid, 2023). The third problem with Kuhn's framework is that economics does not follow a normal/revolutionary scientific trajectory. There has been no paradigm shift in recent years, only adjustments within NE. As I discussed earlier, either anomalies are incorporated within NE or dismissed and relegated to heterodoxy. Thus, despite constant criticism, NE remains the dominant paradigm. In this context, the heterodox expectation of a paradigm shift recalls Vladimir and Estragon waiting for Godot in Beckett's play.

Departing from Kuhn, I propose heliocentric economics to better depict the current situation in economics. My framework is analogical to a heliocentric system where planets orbit around the Sun. In heliocentric economics, NE is a sun and heterodox approaches are planets. The analogy is simple: NE as the Sun is big, whereas heterodox approaches as planets are smaller. Second, planets are independent from the Sun because they have their gravitation, but they all orbit around the Sun due to its gravitational force. In heliocentric economics, heterodox approaches are independent from NE because they are based on different axiomatic assumptions. However, all heterodox approaches refer to NE. The gravitational force is criticism because heterodoxy was born from dissatisfaction with NE (see Garnett, 2006). Heliocentric economics¹ is only a simple analogy, but the normative implications can be helpful as they contrast the prevailing narrative among heterodox economists, which frames the relationship between NE and heterodox economics as an inevitable clash of paradigms (see Garnett, 2006; Fullbrook, 2008; Fisher *et al.*, 2017; Skidelsky, 2020).

Normatively, heliocentric economics offers epistemological benefits. First, it improves communication because the dominant NE paradigm gives economists a shared language. NE is a benchmark to which heterodox economics refer. The communication is possible because all economists are familiar with core NE concepts such as utility maximization or rational choice theory (see Hoyningen-Huene and Kincaid, 2023). Thus, the dominant paradigm fosters epistemic connectedness and enables communication across different schools of thought, which is crucial in the context of a fragmented and specialized science.

Moreover, heliocentric economics makes discussions between heterodoxy and NE more fruitful. As indicated in the previous section, inter-paradigmatic discussion is problematic. In heliocentric economics, epistemic values structure discussion because NE serves as a benchmark. This forces heterodox economists to express their epistemic values in the context of NE's epistemic values (e.g., rigor, simplicity). One strategy is for heterodox economists to use models that can be compared to neoclassical ones, such as post-Keynesian and agent-based models. Of course, this is not a magic wand. Disagreements about epistemic values will remain (rigor vs complexity,

¹ Heliocentric economics shares some similarities with the "orientational paradigm" (Hoyningen-Huene and Kincaid, 2023). The essential difference is that in my approach only NE serves as an orientational paradigm, rather than multiple approaches as in "orientational paradigm".

simplicity vs comprehensiveness etc.). However, this framework can improve dialogue by making these values explicit and open to discussion (see Larue, 2022).

The second benefit of heliocentric economics comes from its pluralistic dimension. Although NE remains dominant, heterodox approaches are not excluded. Their role is to offer critical perspectives on NE since critique is essential for improving economics (Caldwell, 1988; McCloskey, 1998; Dow, 2004; Garnett, 2006; Dobusch & Kapeller, 2012; Roncaglia, 2019; Gräbner & Strunk, 2020; Larue, 2022) and science in general (Chang, 2012). External criticism is essential because it highlights the “blind spots” of NE (Gräbner, 2017). In recent years, due to reverse imperialism NE has incorporated knowledge from other social sciences. As discussed in section two, NE assimilated theories from behavioural economics, new institutional economics and new neoclassical synthesis. Although reverse imperialism did not alter NE’s axiomatic assumptions, it helped address anomalies and enhanced puzzle-solving ability. Ultimately, in heliocentric economics, continuous heterodox critique can push neoclassical economists to improve their theories in the long run.

To conclude, my normative argument is that heliocentric economics can lead to epistemological benefits. The first benefit stems from its monistic dimension. A dominant NE paradigm provides a shared benchmark that enables communication among economists. The second benefit comes from the pluralistic dimension. The existence of critical heterodox approaches can improve NE, as external critique prompts NE to react.

A potential problem, however, is that heliocentric economics may seem to favour neoclassical economists. From this perspective, NE’s dominance is seen as desirable. For this reason, I must focus address concerns of heterodox economists who oppose NE and support pluralism. The main question, then, is: Why should heterodox economists accept heliocentric economics when NE remains dominant?

My main argument is pragmatic. Heliocentric economics seems to be the best available option for heterodox economists. The project of creating a competitive alternative paradigm to NE has failed, leaving heterodox economists burnt out (Garnett, 2006). Nowadays, the primary strategy of heterodox economists is to challenge NE as a flawed paradigm that should be dismissed (e.g., Fullbrook, 2008; Fisher *et al.*, 2017). I agree with Colander (2009) that this approach is wrongheaded because heterodox economists largely preach to the converted. A more feasible strategy is to accept the dominance of NE as I propose in heliocentric economics. This does not mean that heterodoxy should stop challenging NE. On the contrary, as I argued previously, criticism is a main feature of heliocentric economics. However, such criticism must be targeted. If it threatens the entire NE paradigm, neoclassical economists will dismiss it. Instead, heterodox economists should focus on engaging with neoclassical economists who are open to change. Colander advises that heterodox economists adopt models and mathematics, since NE associates these tools with simplicity and rigor (Colander, 2009). I disagree with Colander because these epistemic values are broader. One does not need math to achieve simplicity and rigor because arguments can be made in a formal and rigorous way (e.g., works of North & Coase, see Dequech, 2007). However, I agree with Colander that heterodox economists should appeal to epistemic values that neoclassical economists find

important, such as rigor and simplicity, because doing so enables communication among economists. Neoclassical economists may still choose not to listen even then but appealing to epistemic values is more productive than bashing NE, which only closes off communication. Moreover, referring to NE's epistemic values can help heterodox economists strengthen their own approaches (Larue, 2022).

Although epistemic values are useful in structuring discussion, they are not sufficient alone. Different axiomatic assumptions prioritize different epistemic values; for example, NE's equilibrium demands different epistemic values than radical uncertainty in post-Keynesian economics. Thus, methodological debate often leads nowhere. A more effective strategy for heterodoxy to be heard is to focus on puzzle-solving. Heterodox economists should prove that their approaches have puzzle-solving ability with special attention to real economic problems (Dobusch & Kapeller, 2012). Post-Keynesian economics is an example of this strategy. From 2000, its influence has grown because it has demonstrated its policy-relevant puzzle-solving ability. Previously, the post-Keynesian perspective had not been influential because it focused on methodology (Lavoie, 2022). To conclude, heliocentric economics requires heterodoxy to accept NE's dominance. This prevents heterodox economists from wasting time trying to overthrow NE and encourages them instead to contribute positively to economics.

The implications from heliocentric economics can be understood as one possible strategy for heterodox economics to use when dealing with NE. Hein distinguishes five main strategies for heterodoxy (2023, pp. 305–6): 1. Engage with NE rather than dismiss it (Colander, 2009; Colander *et al.*, 2004; Garnett, 2006), 2. Compete with NE by creating a competing paradigm (Davidson, 2004), 3. Ignore NE altogether (Lee, 2012), 4. Avoid methodological debates (King, 2012), 5. Focus on socio-political life (Stockhammer & Ramskogler, 2009). In this context, heliocentric economics aligns with strategies 1, 4 and 5. I also think that engaging in dialogue gives heterodoxy a chance to be heard, and it can be done by appealing to epistemic values. However, some methodological differences between heterodoxy and NE are unbridgeable because they stem from different axiomatic assumptions. Thus, heterodoxy should focus on puzzle-solving. Conversely, heliocentric economics rejects strategies 2 and 3. As I pointed out previously, the creation of a paradigm to compete with NE has failed, and ignoring NE only leads to preaching to the converted. Due to path dependency, the chasm between heterodoxy and NE will only grow.

Before concluding, it is crucial to consider three possible objections to heliocentric economics.

First, critics may argue that heliocentric economics reinforces NE's dominance and sustains the status quo. Indeed, heliocentric economics highlights the potential benefits of NE's dominant position. However, these benefits arise only if communication between NE and heterodox economics is sustained. Recall that that heterodox economics' persistent criticism of NE is an essential feature of heliocentric economics. Whether NE continues to dominate hinges on how effectively it responds to the criticism.

Second, the metaphor of NE as the Sun and heterodox approaches as planets implies one-way dependence rather than mutual influence. There is indeed asymmetry of power

between NE and heterodox economics. Heterodox economics refers to NE far more than NE refers to heterodox economics. Be that as it may, the relationship between the Sun and planets is mutual. Although the Sun has much more influence on planets due to its enormous mass, planets also influence the Sun as they slightly change its trajectory. With the growth of heterodox approaches, the influence on NE will also increase.

Finally, heliocentric economics underestimates the possibility of paradigm shift. From my account, it seems that the Sun (NE) will be dominant forever. I have shown that applying Kuhn in the context of economics is problematic because we experience evolution, not revolutions, and I did not claim that a paradigm shift cannot occur. Rather, I focus only on the current situation, and since the future is unpredictable, NE may not remain the Sun forever.

6. Conclusions

This paper analysed two major debates concerning pluralism in economics. The first concerns a descriptive question: Is economics pluralistic? The second concerns a normative question: How should pluralism work?

Descriptively, I showed that despite changes, NE remains a dominant paradigm in economics. This means that economics is not pluralistic, because the broad mainstream is still based on NE's axiomatic assumptions. On the other hand, economics is not monistic because critical heterodox approaches exist and influence NE. In this context, heliocentric economics suggests that economics lay between monism and pluralism. Normatively, I argued that heliocentric economics (the middle ground between monism and pluralism) can be beneficial for economics. First, I argued that NE's dominant paradigm serves as a benchmark that enables communication between neoclassical and heterodox economists. Second, I argued that if critical dialogue exists thanks to heterodox approaches (pluralism), the dominance of NE (monism) does not necessarily hinder progress in economics.

In recent years, many authors have contributed to these debates, so how does my contribution differ? First, I argued that NE has not changed despite reverse imperialism (e.g., Arnsperger & Varoufakis, 2006; Dobusch & Kapeller, 2009; Berg & Gigerenzer, 2010; Dow, 2012; Elsner, 2013; Gräbner & Strunk, 2020). My contribution is to show systematically how the protective belt around axiomatic assumptions actually works. Second, with the concept of heliocentric economics, I demonstrated that pluralistic discussion can benefit economics. Similar arguments appear, for example, in discussions of “interested pluralism” (Dobusch & Kapeller, 2012), “structured pluralism” (Dow, 2004) and “reasonable pluralism” (Larue, 2022). Heliocentric economics differs from most accounts in that it does not fall into the dichotomy between good pluralistic heterodoxy and bad monistic NE (e.g., Dow, 2000; Earle *et al.*, 2016). Instead, heliocentric economics demonstrates that one can eat cake and have it too when it comes to monism and pluralism. Heliocentric economics is a constructive framework because it discourages conflicts between heterodoxy and NE. I hope this heliocentric approach convinces heterodox economists to listen to neoclassical economists, and vice versa.

I acknowledge that heliocentric economics acceptance of NE's domination comes with certain risks. Due to path dependency, heterodox approaches may be marginalized further, preventing valuable ideas from being heard. Thus, both neoclassical and heterodox economists must listen to each other. To enable constructive dialog, we need to not only foster openness—using strategies such as “positive heuristics” (Dow, 2018), an “ecumenical attitude” (Dobusch & Kapeller, 2012), or “ideal condition” (Larue, 2022)—but also concrete institutional mechanisms to ensure that debate takes place. This could include providing economic students with mandatory courses in the history of economic thought and philosophy of science where they learn about different paradigms. Moreover, we should also create “symbolic spaces” like conferences and journal special issues that foster interdisciplinarity (Gräbner, 2017; Gräbner & Strunk, 2020). Of course, all these things do not mean that we will have a fully level playing field or ensure that all voices will be heard equally. But it can help make the benefits of heliocentric economics more achievable.

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