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ABSTRACT

Manufacturing 'Economics' Minds: Ideology, Authority, and Economics Education*

This study contributes to the growing debate surrounding the narrow and monolithic ideological discourse embedded in economics education and the increasing calls for a more pluralistic approach. Using an online randomized controlled experiment involving 2,735 economics students from 10 countries, we examine the manifestation of ideological and authority biases shaped by economics education. Specifically, we investigate how the lack of plurality and the marginalization of alternative perspectives bias students' engagement with various economic topics. Our findings show that the ideological orientation and mainstream authority behind a source attribution significantly influence students' evaluations of statements. When sources attributed to a statement are randomly switched from mainstream to less-/non-mainstream, or removed altogether, we observe a marked reduction in agreement. This suggests that, rather than critically engaging with content—despite 67% of students reporting that they evaluate arguments solely based on substance—students rely on the authority and ideological alignment of mainstream sources to shape their understanding of economic issues. As students progress through their education, these biases intensify, with PhD students exhibiting stronger biased reactions to changes in source attribution. This pattern reflects how prolonged exposure to mainstream ideas and a self-selection process that "weeds out" those who don't "think like an economist" reinforce these biases. Political orientation further mediates these effects, especially among right-leaning students, with the effect most pronounced at the PhD level. Significant gender differences also emerge, with male students displaying a stronger bias toward mainstream sources compared to females. These findings highlight how ideological and authority biases in economics education undermine students' ability to think critically and independently, limiting their engagement with alternative perspectives.

JEL Classification: A11, A12, A13, C93

Keywords: ideology, ideological bias, authority bias, economics students, economics education, plurality in economics

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1. Introduction

This paper examines the extent to which the dominant, ideologically monolithic, and narrow mainstream discourse in economics — embedded in its educational processes under the guise of objectivity and value-neutrality—biases the views of economics students.[1] Using a large-scale online randomized controlled experiment involving 2,735 economics students from 10 countries, we examine how the hidden ideologies and power structures in economics influence and bias students' evaluations of a series of statements on a broad range of economic issues. By investigating the role of ideology within the educational process in economics, we seek to illuminate the broader social and intellectual implications of economics training —a topic that has garnered increasing attention and importance in recent years (Bowles & Carlin, 2020; Cortinhas, 2023; Earle et al., 2017; Fullbrook, 2008; Kvangraven & Kesar, 2023; Mearman et al., 2018a; Owen & Hagstrom, 2021; Zuidhof, 2014).

The role of ideology in economics has been the subject of ongoing and long-standing debate. A Central argument in this discussion is that the dominant mainstream discourse, though often portrayed as objective and value-free, is shaped by powerful yet concealed ideological underpinnings (e.g., Avsar, 2011; Chang, 2014; Dobb, 1975; Fine & Milonakis, 2009; Fullbrook, 2008; Galbraith, 1989; Javdani & Chang, 2023; Krugman, 2009; Kvangraven & Kesar, 2023; Morgan, 2016; Rodrik, 2015; Romer, 2015; Stiglitz, 2002; Thompson, 1997). Ideologies, as structured sets of beliefs that guide perceptions, inevitably permeate our thinking about the economy and its social, political, and historical contexts. Given the deep interconnections between the economy and broader societal forces, the economic sphere becomes a contested space for competing ideological perspectives.

The issue, therefore, is not simply the presence of ideological underpinnings in mainstream economics – since all economic theories, and indeed all discourses, are inevitably shaped by ideology. Nor do we argue that the ideological underpinnings of mainstream economics are inherently flawed. Rather, we challenge the persistence claim by mainstream economists that

[1] The ideologically monolithic and narrow mainstream discourse in economics consists of various elements, including rational choice theory, market fundamentalism, methodological individualism, the positive-normative dichotomy, mathematical formalism, de-politicization and de-historicization, and claims of universality. Institutional mechanisms such as steep disciplinary hierarchies, journal gatekeeping, socialization processes that enforce groupthink and penalize dissent, marginalization of alternative perspectives, token pluralism, Western-centric epistemology, and gatekeeping in funding and research further entrench this discourse.

economics is purely “scientific” and ideology-free. This pretence of neutrality and value-freeness masks the influence of dominant ideological frameworks, obscuring their powerful presence and the effects they produce. Thus, the goal is to critically examine how these ideological underpinnings and their supportive power structures function and evolve, uncover the effects they produce and the contradictions they obscure, and challenge their implicit claims to universality. Doing so not only unveils the ideological nature of mainstream economics but also strengthens the case for pluralism — a discourse that does not hide behind claims of objectivity and universality to suppress alternative views, but instead embraces diverse perspectives to foster a comprehensive and critical understanding of economic phenomena.

Mainstream economics has long relied on theories and models that, while housed within mathematically rigorous and sophisticated structures, are built on value-laden and ideological foundations (Applebaum, 2019; Berman, 2022; Earle, 2017; Earle et al., 2017; Mazzucato, 2018; McCloskey, 1994, 1998; Mirowski, 1989; J. Nelson, 1996; Northrop, 2000; Skidelsky, 2020). These theories and models often conceptualize the economy as a system of market relations, relegating the broader social, political, and historical relations to the exogenously given background (Berman, 2022; Fine & Milonakis, 2009; Marglin, 2008; J. A. Nelson, 2022; Northrop, 2000). This gives mainstream economics the ability to universalize and naturalize concepts, stripping them from their inherently normative historical, social, and political contexts.

The focus on the rational representative individual as the basic unit of analysis (Fine & Milonakis, 2009; Galbraith, 1967; Skidelsky, 2020), rather than collective agents such as classes or organizations, narrows the lens through which economic phenomena are studied and understood. Framing issues in terms of technical efficiency, optimization, and equilibrium — combined with the use of technical jargon—creates the impression of neutrality and objectivity, while masking the normative and value-laden choices embedded within the discourse (Kvangraven & Kesar, 2023; Lawson, 2012; Marglin, 2008; Myrdal, 1954; Northrop, 2000; Pistor, 2021; Rubinstein, 2006; Schmidt, 2017). As a result, both "outsiders" and economics students as “soon-to-be-insiders” struggle to identify and critically engage with these ideological underpinnings, and come to accept, often without realizing it, the biases and blind spots in the dominant economic discourse that limit the scope of inquiry.

This implicit framing, which “normalizes and naturalizes an economic frame of mind” (Zuidhof, 2014), carries profound social and policy implications. By elevating its own way of

thinking, mainstream economics, even without explicitly trying, marginalizes alternative approaches to economics — such as feminist, ecological, Marxist, or (old) institutional economics— that emphasize the economic, social and environmental consequences of laissez-faire policies rooted in a naturalized view of the market, which is at the core of neoclassical economics. This is very likely to result in policies that perpetuate existing power structures and inequalities they produce, while alternative approaches are dismissed as impractical or unscientific (Berman, 2022; Chang, 2002b; Freeman, 1999; Hirschman & Berman, 2014; Lazear, 2000; Marglin, 2008; Mazzucato, 2013; J. Nelson, 1996). Furthermore, by discouraging reflexive inquiry, the discipline curbs its own capacity for self-examination and opening itself to more pluralistic perspectives.

This concern is further amplified by the way economics education itself serves as a mechanism for reproducing and disseminating this monolithic ideological discourse. As students are trained to "think like an economist" (Mankiw, 2020) and master technical tools (Colander, 2005; Rubinstein, 2006), they are often conditioned into a specific mindset. This process often exposes them to only a narrow range of perspectives, privileging certain problems, methods, and solutions while sidelining or excluding others. As Rubinstein (2006) notes, the focus on mathematical techniques can divert students' focus away from broader societal concerns, leading them to unconsciously internalize the discipline's implicit ideological underpinnings and perspectives. As we will explore in Section 3, this has profound implications for how economics students perceive the world, influencing their understanding of the economy, society, and the role of the individual.

The ideological influence of economics education reaches beyond the classroom, shaping how individuals engage with real-world social and economic challenges. As future policymakers, academics, business professionals, and other experts, economics graduates often lean toward policies that align with market fundamentalism (Applebaum, 2019; Berman, 2022; J. Christensen, 2017), such as opposition to minimum wage increases (O'Roark & Wood, 2011). These preferences are not merely personal but are deeply rooted in the ideological foundations instilled throughout their economics education (Allgood et al., 2012; Colander, 2005; R. Frank et al., 1993; Frey & Pommerehne, 1993; Kvangraven & Kesar, 2023; Wang et al., 2011; Zuidhof, 2014).

This influence highlights the broader role of mainstream economics as a dominant discourse, one that reflects the power relations embedded in systems of knowledge production and serves as a powerful tool for perpetuating ideologies that serves the established power

structures(Foucault, 1977). By positioning ‘economics’ as a universal, objective, and even superior social science (Fourcade, 1989; Fourcade et al., 2015; Freeman, 1999; Friedman, 1953; Lazear, 2000) while denouncing other approaches to economics as illegitimate, neoclassical economics solidifies its authority within exiting power structures while narrowing the scope for critical engagement with alternative perspectives.

In response to these concerns, recent years have seen growing demand—especially from students—for a more pluralistic and interdisciplinary approach to economics education (Earle et al., 2017). These calls advocate reintroducing social, political, and historical contexts into economics teaching, exposing students to more pluralistic perspectives, and fostering a more comprehensive understanding of real-world economic challenges (Ambler et al., 2022; DelReal, 2011; Harvard Political Review, 2011; International Student Initiative for Pluralist Economics, 2014; Post-Crash Economics Society, 2014; Rethinking Economics and Economy, 2018; Rethinking Economics India Network, 2022).

A key to promoting a more inclusive and reflective approach to the discipline is to better understand its existing power structures, as these structures profoundly shape the scope and direction of potential change. Grasping the role of ideology in economics, particularly in economics education, as one of the main channels of disseminating and reproducing the mainstream economics discourse, is essential for grasping how these power structures function. Ideology plays a critical role in sustaining the dominant discourse by concealing the influence of power. As Žižek (1989) emphasizes, the critical question is not whether the ideological frameworks are inherently good or bad, but how they operate, evolve, and shape the dynamics of power. Equally important is recognizing the effects that ideology generates and the contradictions it obscures.

Our study sheds light on a specific manifestation of ideological and authority biases generated by economics education. More specifically, we examine how the lack of plurality and the marginalization of alternative perspectives biases how students engage with a wide range of topics related to economics. Using a randomized controlled experiment, we find compelling evidence that the ideological orientation and the mainstream authority behind a source attribution plays a significant role in shaping students' evaluations of statements presenting different economic arguments and views. When sources attributed to a statement are switched from mainstream to less/non-mainstream, or removed altogether, there is a marked reduction in

agreement. This suggests that rather than critical engagement with the content, students rely on the authority and the ideological alignment of mainstream sources to shape their understanding and evaluation of a broad range of economic issues.

More importantly, this dynamic is significantly more pronounced among students who have advanced further in their academic journey in economics. PhD students exhibit a significantly stronger bias against non-mainstream sources —more than twice as large as that of undergraduates and master's students. This suggests two potential mechanisms. First, deeper exposure to mainstream economics reinforces these biases. Second, students who either align with the field's ideological foundations or are willing to overlook the lack of plurality—whether for career advancement, reluctance to challenge authority, a desire to fit into academic and social circles, or to avoid cognitive dissonance— are more likely to self-select into PhD programs in economics. Our findings also highlight how political ideology amplifies these biases, particularly among right-leaning students, underscoring the political underpinnings of the mainstream economics discourse.

These dynamics reveal a key contradiction within economics education: while mainstream economics claims objectivity and neutrality, it simultaneously undermines alternative perspectives by narrowing intellectual diversity and reinforcing the ideological views underlying its dominant discourse. As students advance in their education, they not only adopt the dominant ideological views but also absorb them as universal, neutral, and objective. This echoes Chomsky's observation that, by limiting the spectrum of acceptable opinion while encouraging "lively" debate within those limits, systems can foster a false sense of free thinking, all the while entrenching a narrow intellectual perspective and reinforcing existing power structures (Chomsky and Herman, 1988).

Finally, our analysis of gender differences reveals additional layers of heterogeneity in how these biases operate. Male students exhibit significantly stronger biases towards mainstream sources, indicating that ideological conditioning in economics education is not uniform but interacts with broader social and cultural factors. Collectively, these findings deepen our understanding of how ideological underpinnings of economics education operate and evolve, reinforce economics' discourse, and shape students' engagement with the field and alternative perspectives.

The remainder of the paper is organized as follows. Section 2 outlines our framework for understanding and addressing ideology. Section 3 offers an overview of the literature on the role

of ideology in economics education. Section 4 explains our experimental design. Section 5 covers our data and empirical methodology. Section 6 presents and analyzes our results. Finally, Section 7 provides concluding remarks.

2. What is Ideology?

Before we can assess the influence of ideology embedded in economics education, it is important to clarify what is meant by ideology. Ideology is a notoriously broad and elusive concept, resistant to a neat definition. It is perhaps this vagueness, coupled with its commonly understood pejorative connotation, that has made it an effective and easy label to attach to the views of one's opponents.

As a body of inter-connected attitudes, beliefs, and values, ideology exists within a complex network often organized around abstract themes (e.g., freedom, justice, equity, free market, efficiency, rationality, private property, scarcity, value-free science). In the context of economics education, this complexity becomes particularly relevant, as it is not just the abstract theories or models we are concerned with, but the deeper, often concealed, ideological underpinnings that introduce students to narrow and distinct views on economic, social, and political realities (Mirowski, 1989; J. Nelson, 1996; Zuidhof, 2014). Offering a narrow definition of ideology would therefore risk overlooking this complexity by singling out one trait among a complex of traits. We find it more appropriate to adopt a general framework for understanding ideology, especially in relation to how it operates within economics classrooms, rather than relying on an overly reductive definition.

Therefore, we define ideology as a system of inter-connected attitudes, beliefs, and values shared by a particular social group. In the context of economics education, as discussed in the Introduction and further explored in the next section, ideology manifests not only in the specific concepts emphasized to students in theories, models, and methods (e.g., positive economics, methodological individualism, marginalism, rationality, equilibrium, efficiency, growth, welfare), but also in how these concepts are framed within the broader discourse. This discourse employs rhetorical devices and persuasive narratives (McCloskey, 1994, 1998) that reinforce certain worldviews, subtly shaping how students understand and engage with economic issues while marginalizing alternative perspectives.

Ideology inherently carries a normative dimension, outlining —explicitly or implicitly— an idealized vision of society and prescribing the means for achieving this vision. Ideology is also

generative in nature, actively shaping and guiding individual perspectives and behaviors by rationalizing social relationships, making them appear natural and self-evident (Žižek, 1989). Crucially, this conception transcends the simplistic binary of good versus bad or right versus wrong. Ideology is neither inherently positive nor negative; instead, it is a fundamental component of how individuals and societies operate, influencing both thoughts and actions of their own and others'.

Thus, rather than simply evaluating ideology in moral terms, it is essential to critically examine how it operates, evolves, and adapts to new forms of collective consciousness and changing conceptions of the world. Its flexibility or rigidity with response to changing realities plays a crucial role in determining its function and endurance, which are key to understanding both the persistence of existing power structures and the potential for transformative changes. Equally important is recognizing the various effects ideology generates and the contradictions it obscures (e.g., capitalism and freedom, capital and labor, efficiency and inequity, meritocracy and social mobility, self-interest and collective interest, growth and sustainability). Ideology intertwines truth and falsehood, simultaneously revealing and concealing social realities as it both (re)produces and obscures real social relationships.

This conceptualization of ideology identifies three important threads which underlie our empirical investigation. First, it highlights the role of normative factors, driven by both the normative nature of our belief systems as well as the normative contexts within which the economy operates. Second, it recognizes the importance of ideology in creating and maintaining social groups by functioning as a main source of group consciousness and group identity. This has of course important implications for economics education as an important mechanism to maintain and reproduce ideological views and structures in economics. Third, the generative nature of ideology and its role in rationalizing and reproducing social relations highlights how the consequences of ideology in economics go well beyond the boundaries of the discipline and lend legitimacy to certain policies and discourses that affect the broader society.

3. The Role of Ideology in Economics Education: A Review

3.1. Ideological Foundations in Economics Education

In mainstream economics, the fundamental questions of "what to produce, how to produce, and for whom" (Samuelson & Nordhaus, 2005) parallel the ideological structuring of economics

education itself. What students are taught, how they are taught, and who benefits from or is being served by economics education reflect the ideological underpinnings of the discipline.

These ideological underpinnings often reduce the economy to a system of market relations, detaching it from the inherently normative contexts within which these relations are shaped and operate, and treating those 'contexts' as something exogenous to the economy (Fine & Milonakis, 2009; Kvangraven & Kesar, 2023; Marglin, 2008; Mirowski, 1989; Myatt, 2023; J. Nelson, 1996; J. A. Nelson, 2022; Northrop, 2000; Zuidhof, 2014). This approach tends to prioritize concepts such as methodological positivism, methodological individualism, marginalism, rational optimization, and market efficiency, while sidelining alternative perspectives like feminist, ecological, Marxist, and institutionalist.

By naturalizing markets, mainstream economics reinforces the ideological view that market-based solutions are self-evident and usually optimal. Markets are presented as the default organizing mechanisms for economic life, with government intervention framed only as a corrective for market failures (Chang (2002a); also see Zuidhof (2014) for examples from various economics textbooks). This naturalization of markets also helps to marginalize alternative perspectives that question the dominance of market logic.

Approaches like feminist economics, which emphasizes the social and the gendered dimensions of economic life, or ecological economics, which critiques the environmental unsustainability of market-driven growth, are often viewed as value-laden (as opposed to 'value-free' neoclassical economics) or going against the natural order of markets (J. Nelson, 1996). Institutional economics and political economy, which focus on the role of power, institutions, and historical processes in shaping economic outcomes, are similarly sidelined, as their critiques of market efficiency and rational optimization run counter to the market-centered narrative.[2] In this way, economics education not only privileges a specific ideological framework but also actively marginalizes critiques that foreground social, environmental, and institutional factors as central to understanding economic realities.

[2]It is important to note that the type of institutional economics mentioned here, often referred to as "Old Institutional Economics," differs markedly from the approach practiced in Neoclassical economics, which is sometimes referred to as "New Institutional Economics." While both OIE and NIE recognize the importance of institutions in economic analysis, they differ significantly in their methods, assumptions, and areas of focus. OIE offers a broader, historically grounded perspective that highlights power and conflict, while NIE provides a more formalized, efficiency-oriented framework that integrates with Neoclassical economics.

The monolithic ideological framework imparted by economics education is not confined to theoretical concepts; it extends to methods and models that dominate the discipline and constrain the scope of "accepted" analysis. The heavy reliance on mathematical formalism and statistical casual inference reinforces a narrow, technical view of economics, often at the expense of critical reflection on underlying ideological assumptions and real-world complexities (Colander, 2005; Mirowski, 1989; Rubinstein, 2006). Mathematical models, which prioritize optimization, technical efficiency, and tractability, are presented as neutral and objective tools, while the broader institutional, historical, and political economy dimensions that shape economic outcomes are frequently sidelined.

Empirical research, which has come to define mainstream economics in the wake of so-called "credibility revolution" led by scholars such as Angrist & Pischke (2010), is overwhelmingly focused on casual inference and "identification" strategies through econometric techniques such as regression discontinuity, difference-in-differences, and instrumental variables. While these methods enhance empirical rigour, their dominance has significantly narrowed the scope of "accepted" inquiry. The overemphasis on clean identification often comes at the expense of generalizability, obscuring deeper contextual and structural questions that are essential for understanding long-term economic and social processes (Deaton, 2010; Pistor, 2019; Rodrik, 2015). By prioritizing methodological precision over substantive economic inquiry, mainstream economics risks reducing complex social phenomena to narrowly defined causal claims, thereby limiting its ability to engage with the broader forces that shape economic life.

This purely technical pedagogical focus discourages broader inquiry into social, ethical, and environmental contexts, fostering a mindset that prioritizes technical problem-solving over deeper understanding and critical engagement (Colander, 2005; Mirowski, 1989; J. Nelson, 1996; Rubinstein, 2006). As a result, students internalize a particular mindset that is poorly equipped to critically engage with the real-world implications of the ideological views embedded in their education, particularly as they relate to the power dynamics and the relations of domination that shape socioeconomic systems and contribute to the mounting crises our societies face (Kvangraven & Kesar, 2023; Tilley & Shilliam, 2018).

Recent mainstream attempts to address criticisms of economics education, such as the CORE Econ Project, focus on the imperfections of real-world economies rather than idealized models of perfect competition. While this shift is a step forward, critics argue that it fails to

challenge the narrow ideological framework that persists in the discipline (Kvangraven & Kesar, 2023; Mearman et al., 2018b; Muijnck & Tieleman, 2022). They argue that by focusing primarily on the positive—in the economic sense of describing phenomena as they appear in the world—these revisions leave underlying biases intact and often present economics as merely a set of technical tools. As a result, they overlook the deep theoretical differences and conflicts between schools of thought such as Neoclassical, Marxian, and Keynesian in their attempt to "integrate" pluralist approaches into a single framework that appears to present "the truth" (Muijnck & Tieleman, 2022). This approach ultimately reinforcing the very limitations it seeks to address by sidelining critical debates and alternative perspectives, particularly when these perspectives come into conflict with the dominant mainstream discourse (Kvangraven & Kesar, 2023; Muijnck & Tieleman, 2022).

3.2. The Ideological Influence of Economics Education on Students

Perhaps unsurprisingly, mounting empirical evidence suggests that the (unacknowledged) ideological underpinnings of economics education significantly influence the attitudes, beliefs, and values of economics students. Numerous studies demonstrate that economics students tend to exhibit more self-interested, free-riding, and less altruistic behaviors compared to their peers studying other subjects (Bauman & Rose, 2011; Carter & Irons, 1991; R. Frank et al., 1993, 1996; Frey & Pommerehne, 1993; Hole, 2013; Ifcher & Zarghamee, 2018; Konow, 2019; Rubinstein, 2006). Additionally, these students have been found to be more likely to engage in behaviors perceived as greedy (Wang et al., 2011) or even corrupt (B. Frank & Schulze, 2000). Much of this evidence points to the formative effect of economics training rather than merely self-selection (R. Frank et al., 1993; Ifcher & Zarghamee, 2018; Wang et al., 2011).

Following the seminal work of Ghoshal (2005), a separate but closely related strand of literature has also appeared in management science and business, raising concerns regarding the negative influence of economics training on business students' values, norms, and sense of moral responsibility, resulting in ethical blindness, ruthless managers, and undesirable management practices (Laméris et al., 2022).

The influence of these hidden ideological underpinnings extends beyond the classroom, shaping students' civic and political behaviors. Studies have shown that economics students tend to adopt more conservative political views, aligning themselves with free-market ideologies (J. Christensen, 2017; Colander, 2005; R. Frank et al., 1993). For example, Allgood et al. (2012)

found that, in the US, individuals who took more economics classes were more likely to identify with the Republican Party and oppose progressive policies, such as raising the minimum wage. These findings are consistent with other research showing that economics graduates in political positions are less likely to support redistributive policies (O'Roark & Wood, 2011).

In addition, Colander (2005) highlights a significant gap between the technical skills students acquire and their ability to critically engage with real-world economic issues. Many students view success in economics as being primarily linked to mathematical skills, with only 9 percent of students believing that a broad knowledge of the economy is important. Interestingly, only 44 percent of students strongly agreed that neoclassical economics is relevant for economic problems, which highlights the gap between knowledge and skills that are perceived to be necessary to put the students on the fast track versus their relevance to economic issues.

This overemphasis on technical skills could also foster epistemic arrogance and overconfidence, as evident in remarks made by prominent mainstream economists such as Freeman (1999) and Lazear (2000).[3] Overconfidence is understood as the most pervasive and potent bias our evaluations and judgments are vulnerable to (De Bondt & Thaler, 1995; Kahneman, 2011). For example, Mannes and Moore (2013) find that, due to subjective overconfidence, "[p]eople adjusted their estimates less than they should have given their actual knowledge" (p. 1190).

3.3. Calls for Reforms and Pluralism in Economics Education

The ideological influence of economics education has not gone unnoticed, sparking both academic critique and real-world student activism. In 2011, Harvard students walked out of Professor Gregory Mankiw's economics course, protesting the perceived ideological bias and calling for more pluralistic teaching (DelReal, 2011). Students expressed that they are "deeply concerned about the way that this bias affects students, the University, and our greater society."(Harvard Political Review, 2011). In response, Mankiw dismissed their concerns as "a grab bag of anti-establishment platitudes without much hard-headed analysis" (Mankiw, 2011),

[3] Edward Lazear, a prominent American economist who served as Chairman of the Council of Economic Advisors from 2006 to 2009, celebrates "Economic Imperialism" by boasting that "[b]y almost any market test, economics is the premier social science" and that "[e]conomics is not only a social science, it is a genuine science. Like the physical sciences …" (Lazear, 2000, p. 99). Similarly, Richard Freeman, another prominent economist, who is considered to be on the left of the political spectrum in the economics profession, argues that "sociologists and political scientists have less powerful analytical tools and know less than we do" (Freeman, 1999, p. 141). Not surprisingly, in a survey of economics graduate students in elite programs in the US, Colander (2005) finds that 77% agree with the statement that "economics is the most scientific of the social sciences."

and reiterated the familiar mainstream view that "like most economists, I don't view the study of economics as laden with ideology."

The Harvard protest was part of a broader wave of student dissatisfaction with mainstream economics and ongoing debates about the disciplines monolithic approach. Founded in the UK, *Rethinking Economics* is another student movement that advocates for more pluralistic curricula, challenging the narrow focus of conventional economics teaching. By 2014, the movement had gained international momentum, with economics students from 65 universities in 30 countries calling for a more pluralistic and interdisciplinary approach to economics education (International Student Initiative for Pluralist Economics, 2014).

Both academic research and real-world evidence demonstrate that economics education exerts significant ideological effects on students. The prioritization of methodological positivism, individualism, and market-driven solutions—grounded in de-socialized, de-politicized, and de-historicized analyses— often comes at the expense of broader social and ethical considerations. This shaping of students' beliefs and behaviors aligns them with particular ideological positions and political views that has been widely criticized for contributing to the perpetuation of existing power structures, which underlies growing social challenges and political polarizations (Applebaum, 2019; Berman, 2022; J. Christensen, 2017; Costas Lapavitsas, 2015; Folbre, 2001; Harvey, 2007; Mosini, 2012).

As economics education continues to shape future citizens, policymakers, business leaders, and academics, the debate surrounding the need for a more pluralistic and interdisciplinary approach to the discipline are becoming increasingly urgent. Our research contributes to this critical debate by providing robust evidence showing the hidden ideological underpinnings of (mainstream) economics education as currently practiced around the world.

4. Experimental Design

We employ a randomized controlled experiment embedded in an online survey. Student participants are invited to evaluate 15 statements presented to them by choosing one of the following options: strongly agree, agree, neutral, disagree, or strongly disagree. These statements cover a wide range of economic topics and are mainly from prominent mainstream economists.

It is worth emphasizing that most statements in our study do not fit into straightforward, one-dimensional, and ostensibly "neutral" categories commonly found in surveys like the IGM Expert Panel, as analyzed by Gordon & Dahl (2013). Their research highlights striking consensus

among economists and finds no clear evidence of a conservative versus liberal divide — the reductionist framework they use to interpret ideological differences. However, the ideological orientations we examine are far more nuanced and complex than this binary political spectrum.

Our focus is on examining how economics students respond to multidimensional and contentious issues that challenge various aspects of the dominant mainstream discourse—perspectives that are often the only ones presented in their education. Given the complex ideological underpinnings of economics discussed before, embedding students in discussions that engage with deeper questions—such as distributional effects of globalization, power and wealth, the gender gap in economics, capitalism and inequality, and the concept of rationality — provides a more effective way to assess ideological orientations and potential biases elicited by our treatments (i.e., changing source attributions).

All participants in our survey receive identical statements presented in the same order. However, the source attribution for each statement is randomized *without the participants' knowledge*. For each statement, participants are randomly assigned one of three conditions: they either receive a mainstream source (Control Group), a relatively less-/non-mainstream source (Treatment 1), or no source attribution at all (Treatment 2). This randomized design allows us to analyze how the perceived ideological orientation and authority of sources influence participants' responses. A complete list of statements and their corresponding sources is available in Section 1 of our online appendix.

Participants assigned to Treatment 2 for the first statement remain in this group for the entirety of the survey. This consistent assignment ensures that they do not encounter some statements with source attributions and others without, which could create confusion or lead them to focus on the presence or absence of sources. In contrast, participants in the Control Group or Treatment 1 are re-randomized between these two groups for each subsequent statement, allowing for varied exposure to different types of sources. Additionally, participants in Treatment 2 are informed before starting that "All the statements you are going to evaluate are made by scholars in economics and do not necessarily reflect the views of the researchers. We have not provided the actual sources of these statements to ensure they are evaluated based on their content only."

Several key points deserve emphasize here. First, our classification of selected sources into "mainstream" and "less-/non-mainstream" simplifies the relative ideological differences between them for ease of presentation. We acknowledge that these distinctions are better understood as a

continuum rather than a strict dichotomy. However, to enhance clarity and facilitate analysis, we adopt this binary classification as a practical approach for summarizing and discussing the ideological variations across the sources in our study. It is also important to note that this categorization does not apply equally to all sources. For instance, older sources such as Marx or Engels, or those from other disciplines, like Sandel or Freud, do not fit as neatly into this framework as contemporary economists might. Nevertheless, to maintain consistency and avoid confusion for the reader, we adhere to the same naming convention across all sources.

Second, we carefully selected the statements to ensure that their attribution to fictitious sources would be believable for participants. All statements were relatively obscure to minimize the likelihood that participants would recognize misattributions. However, if participants did identify a misattribution, it would lead to one of two outcomes: they might stop the survey entirely, or they might continue to its completion. As we explain in more detail in the Data Section, we restrict our analysis to participants who completed the entire survey. For those who did continue after potentially noticing the misattribution, two possibilities arise. They might view the misattribution as a mistake and evaluate the statement based on the actual source, which would neutralize any potential bias from the treatment. Alternatively, they might suspect that the misattribution is part of the survey's design and thus become aware of the potential for bias in their responses. In both cases, any bias introduced by the treatment would likely be underestimated. In the first scenario, the realization of the true source eliminates the treatment's effect, and in the second, self-awareness reduces the likelihood of participants displaying biased evaluations, as they may consciously adjust their responses.

Third, the two sources for each statement were carefully paired to reflect distinct and commonly known ideological positions—whether from different schools of thought, political leanings, disciplines, or attitudes towards mainstream economics. In addition to these pairings, we provided participants with brief information about each source, including their discipline, institutional affiliation, and the title of one of their publications. This supplementary information was specifically designed to accentuate the ideological differences between the paired sources, particularly in cases where the source might be unfamiliar to participants.

For instance, publication titles such as *Rethinking Marxism*, *The Crisis of Vision in Modern Economic Thought*, or *What Money Can't Buy: The Moral Limits of Markets* were selected with the intent to provoke potential ideological biases. By choosing such titles, we aimed to heighten

participants' sensitivity to the ideological contrast between sources, thus amplifying the conditions under which any bias in their evaluations might be revealed. This strategy ensured that, even when participants were not closely familiar with a source, they could still infer a general ideological position, influencing their perception and reaction to the statements.

4.1. Why Deception?

Our use of fictitious attributed sources in Treatment 1 constitutes a form of experimental deception, a technique often necessary to study subtle biases in views, attitudes, and behavior effectively. As Hertwig and Ortmann (2008) argue, biases can only be accurately captured when participants are unaware of the study's true objectives. If participants know their biases are being observed, they may alter their behavior to conform to accepted norms or perceived expectations, a psychological response known as the Hawthorne effect. This tendency can obscure the very biases being studied. Experimental designs involving deception offer a valuable means of isolating the influence of specific biases within a controlled setting. By randomly assigning participants to different conditions without their knowledge, researchers can examine how biases impact decision-making more reliably.

The use of study designs that employ various forms of deception to obtain unbiased measures has a long history across multiple disciplines, including economics, marketing, sociology, psychology, public health, and political science. In economics, deception has been extensively applied in “audit studies” and “correspondence studies” to investigate discrimination in various contexts. Examples include studies that explore racial and gender biases in hiring practices (Ayres & Siegelman, 1995; Banerjee et al., 2018; Bertrand & Mullainathan, 2004; Neumark et al., 1996; Oreopoulos, 2011), research on antibiotic misuse (Currie et al., 2014), and the examination of the unequal treatment of papers written by prominent and less-well-known authors (Huber et al., 2022). These studies have been critical in uncovering biases, using deception as a tool to observe genuine behavior free from desirability biases. Deception has also been widely used in laboratory experiments in economics, where participants are misled about their interaction partners in order to study behaviors such as cooperation, trust, and conflict resolution under anonymity (Ball et al., 2001; Gibbons & Boven, 2001; Jamison et al., 2008; Sanfey et al., 2003; Weimann, 1994).

At the same time, it is important to acknowledge that the use of deception in research has been a subject of controversy, primarily due to ethical and methodological concerns. Although

exploring the ethical complexities surrounding deception in experiments exceeds the scope of this study, the diversity of opinions on this matter suggests a lack of clear consensus. Some researchers and institutions impose strict limits on deception, while others permit its use under carefully regulated conditions.

The primary methodological concern regarding deception in experiments centers on the potential for participants to develop suspicion or resentment, whether from direct exposure to deception or from learning about it through others. This presents two potential risks: first, it may reduce participants' willingness to engage in future experiments or surveys, and second, it may cause those who do participate to act with heightened suspicion, compromising the experimental control. These mechanisms could erode the long-term trustworthiness of researchers and their studies.

However, the empirical evidence regarding the methodological costs of deception remains scarce and, at best, inconclusive (Barrera & Simpson, 2012; Bonetti, 1998; L. Christensen, 1977; Kimmel, 1998; Ortmann & Hertwig, 2002; Rahwan et al., 2022). In their review, Hertwig & Ortmann (2008) conclude that "undoubtedly, the available empirical evidence does not allow us to finally settle the methodological debate on deception, and there is room for honest differences in evaluating the ultimate impact of deception."

Moreover, in the context of our experiment and the specific method of deception employed, we believe that the benefits to participants could outweigh potential concerns. As Bortolotti & Mameli (2006) suggest, using deception to uncover biases can offer individuals valuable opportunities to reflect on their views and behaviors. This self-reflection can promote greater self-knowledge and autonomy by helping participants become aware of previously unrecognized influences on their perspectives. For economics students, in particular, this process of learning and self-discovery is ethically advantageous, as it aligns with the goal of fostering autonomy through increased awareness of the factors shaping their beliefs, attitudes, and behaviors.

5. Data and Methodology

Our target population consists of economics students from 10 different countries.[4] To identify economics departments within each target country, we utilized the *Economics Departments, Institutes, and Research Centers in the World* (EDIRC) website, which is maintained

[4] These countries include Canada, Denmark, France, Germany, Italy, Norway, Sweden, Switzerland, UK, and US.

by the Research Division of the Federal Reserve Bank of St. Louis. This resource helped us locate economics departments and their associated programs across the countries studied.

After identifying the relevant departments, we manually collected email addresses from the departmental websites, focusing on current students wherever available. In cases where student email addresses were not publicly listed, which was common, we retrieved the email addresses of the Graduate Chair and Undergraduate Chair within each department. These email addresses were then used as points of contact to extend invitations to students for participation in our survey. The survey itself was conducted over a six-month period, between October 2017 and April 2018.

Due to the nature of the invitation process, the participation rate for our survey cannot be determined. Our primary method involved emailing the Graduate and Undergraduate Chairs at various economics departments, requesting that they disseminate the survey invitation to their students. Since we have no direct data on whether and how widely these invitations were shared, or how many students ultimately received them, calculating a participation rate is unfeasible. However, the summary statistics provided in Table A1 of our online appendix highlight the considerable diversity present in our final sample of participants, giving a broader sense of representation within the study.

Furthermore, in Figures A1 to A3 within the online appendix, we present the distribution of responses by participants' institutions of affiliation in the United States, Canada, and the United Kingdom as examples. These figures illustrate that our survey participants are drawn from a diverse range of institutions within each of these countries, demonstrating that the sample is not concentrated within any specific type of academic institution. This diverse institutional representation helps to ensure that our findings reflect a broad spectrum of perspectives across various educational settings.

Survey participants were required to evaluate each statement to proceed to the next, ensuring that all statements received responses. However, it is essential to emphasize that participation in the survey was entirely voluntary and that participants were assured that their responses would not be used if they chose to withdraw from the survey at any point. In compliance with the conditions set by our ethics approval, we are prohibited from using data from individuals who did not complete the full survey. Consequently, our final sample only includes participants who completed the entire survey, resulting in a total sample size of 2,735 economics students.

We conducted a series of tests to ensure that limiting our analysis to participants who completed the entire survey did not introduce any sample selection bias into our findings. These tests revealed no significant evidence of such bias. For a detailed explanation and comprehensive discussion of these tests, please refer to Section 2 of our online appendix.

Our primary goal is to determine whether there are systematic and significant differences in average agreement levels among students who are randomly assigned to one of three groups: those exposed to less-/non-mainstream sources (i.e., Treatment 1), no sources at all (i.e., Treatment 2), or mainstream sources (i.e., Control Group). To achieve this, we use a linear regression model, which enables us to directly compare the average agreement levels across these three groups.

The dependent variable in our analysis is the reported level of agreement with each statement, measured on a five-point Likert scale. The categories are coded as follows: 1 for "strongly disagree," 2 for "disagree," 3 for "neutral," 4 for "agree," and 5 for "strongly agree." To make the results more interpretable, we standardize this variable to have a mean of zero and a standard deviation of one. This standardization ensures that the estimated treatment effects are expressed in terms of standard deviation units rather than raw agreement levels. By doing so, we can better assess the relative magnitude and substantive significance of these effects, providing clearer insights into the extent to which different types of source attribution—mainstream, less-/non-mainstream, or no source—impact students' evaluations.

It is also important to note that our decision to use OLS models was primarily motivated by their ease of interpretation and communication. OLS models provide straightforward results that allow for clearer presentation of the effects. However, recognizing the ordered nature of our dependent variable, we also estimated our treatment effects using ordered logit models. Results from these ordered logit models are discussed in Section 3 of our online appendix and are consistent with our OLS results.

6. Results and Discussions

6.1. Main Findings: The Influence of Ideological and Authority Biases

To set the stage for our findings, we begin by exploring how economics students responded to the diverse and often contentious statements presented to them. Figure 1 illustrates the distribution of agreement levels across all participants, demonstrating significant variation in their responses to a wide array of economic issues. This variation underscores the dissensus within the student population, reflecting the ideological complexity inherent in economics education.

Notably, these patterns of dissensus persist even when we limit the analysis to students exposed only to mainstream sources or no sources at all, indicating that this dissensus is not simply an outcome of our experimental treatment.

Table 1 presents the results of our linear regression models, estimating how different types of source attribution influence agreement levels. Column (1) provides estimates from a simplified model without control variables, while Columns (2) through (4) progressively introduce observed characteristics and individual fixed effects to account for potential confounders.[5] The near-identical estimates across models demonstrates the robustness of our randomization process.

Our findings reveal a significant reduction in agreement levels when source attribution shifts from mainstream to less-/non-mainstream. On average, this shift leads to a 0.185-point decrease (in units of agreement level, coded from 1 to 5), equivalent to approximately 16% of a standard deviation or a 5.2% reduction in the average agreement level of 3.55 observed in the Control Group. Removing source attribution altogether produces an even larger effect, reducing agreement by 0.40 points, which corresponds to an 11.2% reduction and a 35% decrease in standard deviation units.

We also analyze the effect of our two treatments on each statement separately, summarized in Figure 2. Consistent with our overall findings, Treatment 1 significantly lowers the agreement level for all but three statements, with estimated effects ranging from 10% to 45% of a standard deviation. Notably, the largest reduction is seen in Statement 6, which explicitly critiques mainstream economics and highlights ideological bias. This supports the notion that views more critical of the established mainstream discourse are more likely to be discounted when presented as coming from less-/non-mainstream sources.

Regarding the three statements with no significant reduction in agreement level (Statements 1, 3, and 7), a plausible explanation is that the ideological gap between the sources is not large enough to trigger ideological bias. A closer examination of the sources—Rodrik vs. Krugman, Hayek vs. Freud, and Fisher vs. Galbraith—supports this. Interestingly, and consistent with authority bias, removing the mainstream source in these cases significantly reduces agreement, highlighting the differing drivers behind the effects of Treatment 1 (source bias) and Treatment 2 (authority bias).

[5] Refer to Table A5 in our online appendix for the estimated coefficients of our control variables.

These results indicate that the source attribution of a statement exerts a considerable influence on how students evaluate content. Interestingly, this stands in contrast to students' self-perception of their evaluative processes. In a supplementary questionnaire administered at the end of the survey, 67% of students reported assessing claims and arguments based on substance alone, independent of the author's identity or views. Only 2% prioritized the author's perspective, while 31% considered a combination of both factors. This self-reported objectivity, which echoes the discipline's emphasis on positivism and neutrality, is sharply contradicted by our findings. The data reveal a pronounced bias in favor of statements attributed to mainstream sources, highlighting the gap between students' perceived and actual evaluative behaviors.

A plausible interpretation of these results lies in the influence of ideological and authority biases. Economics students, trained within a specific ideological framework, are likely to more readily accept statements from mainstream sources, which they perceive as more credible and authoritative. This inclination may result from the alignment between mainstream sources and what the students are taught. In contrast, students tend to exhibit reluctance in endorsing statements that are presented as being from less conventional or non-mainstream sources, viewing them as less credible due to their marginalization within the discipline.

Furthermore, students' acceptance of mainstream sources may not be solely a matter of perceived credibility. It may also reflect a conscious or unconscious desire to conform to the norms of the discipline. In the highly competitive and hierarchical environment of the economics profession (Colussi, 2018; Han, 2003; Rodrik, 2013; Wright, 2018), career prospects and academic standing often depend on aligning with established perspectives. Thus, endorsing mainstream sources may be a strategic move to enhance professional prospects. The insular and uniform nature of mainstream economics, reinforced by powerful mechanisms of conformity and groupthink (Rodrik, 2013), pushes students toward favoring mainstream sources—both consciously and unconsciously.

Rodrik (2013)captures this phenomenon succinctly, noting that "there are powerful forces having to do with the sociology of the profession and the socialization process that tend to push economists to think alike." Graduate students, often trained within a narrow methodological tradition, are rewarded more for technical proficiency than for pursuing innovative or unorthodox research agendas. This dynamic fosters an "in-group versus out-group" mentality, where ideas outside the mainstream are dismissed as lacking methodological rigor. The hierarchical structure

of the profession further compounds these pressures to conform, where aligning with mainstream perspectives is often seen as a prerequisite for academic and professional success.

To add another layer to this discussion by Rodrik (2013), it's worth noting that his argument summarized above was one of the statements evaluated by students in our experiment (Statement 15).[6] Ironically, while 75% of students agree or strongly agree with his arguments, their evaluative process exhibits the very behavior he critiques. While acknowledging the pressures of socialization processes within the discipline that push them towards ideological conformity, their own evaluative process mirrors the very forces they seek to reject. Specifically, when the source attribution was switched to the prominent heterodox economist Anwar Shaikh, agreement levels dropped by 16% of a standard deviation. This exemplifies the paradox of ideology: the very thing being critiqued and rejected is simultaneously reproduced as part of the process.

Another factor that may reinforce the mechanism discussed above is cognitive dissonance. Students who enter economics programs with epistemic motivations (seeking to understand the world) or moral/political motivations (hoping to improve society) often find themselves disappointed by a curriculum dominated by abstract mathematical models disconnected from real-world problems. As a coping strategy to manage the psychological discomfort of this dissonance, students may adjust their approach to align with the discipline's norms and expectations (Pühringer & Bäuerle, 2019). In this way, endorsing dominant sources becomes a method for reducing dissonance and maintaining alignment within the established order of economics. Consequently, the ideological and authority biases evident in our results may reflect both the internalization of professional norms and the acknowledgment of institutional power dynamics within the field, operating through both conscious and unconscious modes.

Regardless of the precise mechanisms at play, our findings highlight a critical yet often overlooked aspect of how economic knowledge is received and processed by students. Many students appear unaware or unwilling to recognize that their evaluations of various economic issues are deeply influenced by their perceptions of the authority and ideological orientation of the sources—even when they consciously reject them. This raises important questions about the depth of critical engagement within economics education, particularly when it comes to perspectives outside the mainstream. Given that non-mainstream perspectives are frequently absent from standard economics curricula and textbooks, students' limited exposure to alternative viewpoints

[6] See our online appendix for the complete statement.

may further entrench these biases, leaving their understanding of the discipline one-dimensional and reinforcing the status quo.

6.2. The Role of Educational Progression in Reinforcing Students' Biases

Building on the results discussed in the previous section, it becomes crucial to explore whether the mechanisms that drive our findings—particularly the role of ideological and authority biases—shift as students advance through different stages of economics education. Specifically, we are interested in determining whether longer exposure to mainstream economic ideas, especially at the graduate level, intensifies or mitigates the biases observed earlier. This exploration provides insight into whether the progression through economics curricula reinforces students' alignment and conformity with dominant mainstream perspectives or encourages critical thinking and a more autonomous evaluative process, fostering deeper engagement.

To assess this, we conduct additional regressions, similar to those presented in Table 1, but introduce an important variable: students' academic level, distinguishing between undergraduates, master's, and PhD students. The results of these models are displayed in Table 2.

Interestingly, when statements are attributed to mainstream sources, we find minimal and statistically insignificant differences in the average agreement levels across these three academic groups. This suggests that students, regardless of their level of education, exhibit relatively consistent responses to statements with mainstream attributions. However, the situation changes dramatically when we alter the source attribution to less-/non-mainstream sources (Treatment 1) or remove the source attribution altogether (Treatment 2). Across all three groups, students' average agreement levels drop significantly, and the effects are consistent with the findings presented in Table 1. Moreover, the estimated effect of Treatment 2 is at least twice as large as the effect of Treatment 1 across all three academic groups.

One of the most striking patterns in the data is the considerably larger impact on PhD students. While Treatment 1 reduces agreement by approximately 9 percent of a standard deviation for undergraduates and master's students, the effect is more than double (23 percent of a standard deviation) for PhD students. Similarly, Treatment 2 reduces agreement by 27 percent of a standard deviation for undergraduate and master's students, but the impact is a substantial 52 percent larger for PhD students (41 percent of a standard deviation). As results in Column (2) suggest, controlling for potential differences in political orientation across these student groups does not alter the observed patterns.

These results underscore a critical insight: as students advance through their economics education, the influence of ideological and authority biases intensifies rather than diminishes. The significantly stronger ideological reaction of PhD students to the removal or substitution of source attributions bolsters the argument that, rather than mitigating biases, higher-level economics education may actually reinforce them.

This intensification likely operates through two mechanisms. First, prolonged exposure to the mainstream discourse during graduate studies deepens students' alignment with the dominant ideological perspectives. As a result, PhD students, who are expected to develop more critical perspectives, independence of thought, and scientific rigor than the more junior students instead appear to place increasing emphasis on the perceived authority and ideological alignment of the source, rather than on the substantive content of the statements.

Ironically, while PhD students present themselves as the most committed to critical thinking and intellectual independence compared to undergraduate and master's students, their significantly stronger biased reactions to our treatments suggest otherwise. In the supplementary questionnaire at the end of the survey, an overwhelming 76.5% of PhD students endorsed the principle that an argument should be judged solely on its substance, compared to 62.1% of master's students and just 55.3% of undergraduates.[7] Yet, their actual evaluative behavior contradicts this claim—their responses show a greater, not lesser, tendency to be influenced by the authority or ideological position of the source. This contradiction highlights a striking irony: those who, in theory, should be the most resistant—and explicitly claim to be the most resistant—to ideological and authority biases appear to be the most susceptible to them.

This heightened susceptibility to bias may reflect not only the deeper intellectual indoctrination of PhD students but also the escalating pressures associated with academic advancement. As students progress, the pressures to conform intensify, particularly in relation to academic job prospects. In this context, adhering to mainstream views can be seen not just as conforming to the dominant discourse, but as a strategic choice to enhance one's standing in the uniform and steeply hierarchical field of economics. PhD students, whose academic job market prospects hinge on their adherence to the orthodoxy and its established norms and frameworks, may consciously or unconsciously exhibit views more closely aligned with the mainstream discourse. This highlights how the forces of conformity and the power structure of the profession

[7] See Figure A5 in our online appendix for more details.

shape not only the intellectual development of students but also their strategic behavior, reinforcing ideological biases.

The second, equally important, mechanism is a self-selection process whereby students with non-conforming views are gradually "weeded out" as they realize the limited space for alternative perspectives within mainstream economics. This process of attrition, where students with non-mainstream inclinations – who don't "think like an economist" – exit or modify their views, further entrenches the ideological uniformity that prevails at advanced academic levels.

Together, these dynamics—both the deepening alignment with dominant perspectives and the selective narrowing of intellectual diversity—serve to reinforce the very biases that economics education claims to transcend through its emphasis on objectivity and neutrality.

6.3. Influence of Political Orientation on Students' Biases

Building on the findings from earlier sections, we now examine how students' political orientation mediates the effects of ideological and authority biases observed in their evaluative process. Considering the significant role that overlapping ideological frameworks play in shaping beliefs and attitudes, this section aims to investigate how political orientation affects students' susceptibility to biases stemming from the perceived authority or ideological alignment of the sources.

To investigate this, we categorized students based on their self-reported political orientations (ranging from -10 for far left to 10 for far right) into five groups: Far Left (-10 to -7), Left (-6 to -2), Centre (-1 to 1), Right (2 to 6), and Far Right (7 to 10). We then conducted a series of regressions, similar to the earlier analyses, to examine how these political orientations interact with our treatments and influence students' evaluations of statements attributed to different sources.

Our results, presented in Table 3, reveal several notable patterns. A key finding is that political orientation significantly influences students' agreement with statements, *even within the control group*, where statements are attributed to mainstream sources. Across all academic levels—undergraduate, master's, and PhD—agreement with mainstream-attributed statements consistently declines as students' self-reported political orientation shifts from the far left to the far right. For instance, among undergraduates, those at the far right exhibit 60 percent of a standard deviation lower agreement with mainstream sources compared to those at the far left. Among master's students, this decline is 30 percent of a standard deviation, while for PhD students, it is

50 percent.[8] This underscores the powerful role of political ideology in shaping how students engage with our statements that challenge or diverge from mainstream economics discourse, with right-leaning students more likely to reject such perspectives, even when they are attributed to mainstream sources.

This pattern also reveals the ideological alignment of mainstream economics within the broader political spectrum. The fact that right-leaning students are more likely to reject statements that depart from or critique mainstream economics suggests that mainstream economics is not politically neutral, but instead aligns more closely with frameworks that resonate with right-leaning perspectives. In other words, what is considered "mainstream" in economics tends to reinforce existing ideological commitments that are more palatable to right-leaning worldviews, making deviations from this discourse appear more contentious to students with right-leaning political orientations. This further highlights that the legitimacy of economic perspectives is not solely determined by empirical rigor but is also shaped by the discipline's embedded ideological and political structures, which in turn shape how economic knowledge is received and contested.

Moreover, our results indicate that political orientation interacts significantly with students' exhibited ideological and authority biases, provoked by changes in attributed sources and their underlying ideological alignment. For example, among undergraduate students at the far left, switching to less-/non-mainstream sources has virtually no impact on agreement levels (the estimated effect of Treatment 1 is a statistically insignificant 1.2 percent). However, for undergraduates who self-identify at the center, the reduction in agreement due to switching to non-mainstream sources grows considerably larger (9.7 percent of a standard deviation), increasing further among those at the right and far right (12 percent of a standard deviation).

For master's students, the effect of Treatment 1 is relatively more pronounced than for undergraduates. Among those at the far left, switching to non-mainstream sources reduces agreement by 9.6 percent of a standard deviation, though the effect remains statistically insignificant. At the far right, the estimated effect nearly doubles to 20 percent of a standard deviation, though it too remains statistically insignificant.

Notably, the effect of political orientation on ideological bias is far more pronounced at the PhD level. Among PhD students at the far left, switching to non-mainstream sources reduces

[8] For each student group, we reject the null hypothesis of equality across the five categories of political orientation at a 0.1% confidence level.

agreement by 18.6 percent of a standard deviation—considerably larger than the corresponding effects for undergraduates (1.2 percent) and master's students (9.6 percent) at the far left. This already substantial ideological bias intensifies as political orientation moves rightward, with agreement decreasing by 38 percent of a standard deviation among PhD students at the center and by 64 percent at the far right. This striking 234 percent increase in the estimated effect of Treatment 1 from the far left to the far right suggests that political orientation plays an outsized role in shaping how PhD students engage with non-mainstream ideas, reinforcing ideological and authority biases as they advance in their economics training.

These findings underscore a critical and recurring pattern in our data: students at higher level of economic education appear to rely increasingly more on ideological and authoritative factors rather than developing the intellectual skills needed to form independent and critical perspectives on economic debates. Our findings in Table 2 demonstrated that altering or removing source attribution has a significantly larger impact on PhD students, compared to their undergraduate and master's counterparts. The Results in Table 3 confirm that this pattern holds across all categories of political orientation, with PhD students consistently exhibiting stronger ideological and authority biases.

Furthermore, our results indicate that political ideology plays an even more pronounced role in shaping these biases at higher academic levels in economics. Among PhD students, those on the right exhibit particularly strong biased reactions to switching to non-mainstream sources or to the removal of source attributions, relative to their undergraduate and master's peers. This raises important questions about the effectiveness of mainstream economics pedagogy, particularly at advanced levels, in fostering critical thinking and intellectual independence. Contrary to the common pedagogical claim that mainstream economics promotes objective scientific thinking, our findings suggest that its pedagogical approaches instead reinforce existing biases and ideological alignments, potentially constraining the development of independent thought and diverse perspectives.

6.4. Gender Differences in Ideological and Authority Biases

In addition to political ideology and academic progression, gender represents another critical dimension of ideological and authority biases in economics education. A well-established body of feminist economic literature critiques mainstream economics for its androcentric assumptions and the historical marginalization of alternative perspectives, particularly in its

treatment—or neglect—of gender issues (D. K. , Barker & Kuiper, 2003; Ferber & Nelson, 2003). Feminist economists have long argued that the discipline's focus on market activities often overlooks the significant role of unpaid labour, especially caregiving and household work, which disproportionately falls on women (Elson, 1998; Folbre, 2001; Waring, 1988). This exclusion has profound implications for how economic issues are taught, perceived, and evaluated.

Given these critiques, it becomes essential to explore whether and how gender mediates the effects of authority and ideological biases among economics students. Women, particularly in male-dominated fields such as economics, may experience additional pressures to conform to established norms or may approach economic issues from a different vantage point than their male counterparts. In light of these factors, understanding how gender influences responses to mainstream versus non-mainstream economic sources can offer valuable insights into the broader dynamics of ideological bias and authority in economics education.

Our analysis of gender differences, as presented in Table 4, reveals striking disparities in how ideological and authority biases influence male and female students. The results indicate that male students exhibit a substantially stronger bias in response to changes in source attribution. Specifically, switching sources from mainstream to less-/non-mainstream reduces agreement among male students by 20 percent of a standard deviation, whereas the corresponding effect for female students is considerably smaller, at 7.5 percent of a standard deviation—representing a 62 percent smaller effect. A similar pattern emerges when source attribution is removed entirely: the reduction in agreement for male students is 37 percent of a standard deviation, compared to 27 percent for female students, a 25 percent smaller effect.

Notably, these differences persist even after accounting for potential gender-based variations in political ideology and political typology, as shown in Columns (2) and (3). This suggests that the observed disparities in susceptibility to ideological and authority biases between male and female students are not merely a reflection of differing political ideologies but point to a deeper, gendered dynamic in how economic knowledge is received and processed.

There are several compelling arguments that could explain our findings regarding smaller ideological and authority biases among female students. While we lack the means to empirically test these hypotheses, we believe there is merit in discussing them because they can guide future research, stimulate deeper inquiry into the gendered dynamics of economics education, and open

avenues for exploring how diverse intellectual perspectives and lived experiences shape how individuals engage with ideas and learn.

First, women's lived experiences, particularly in areas like unpaid labour and caregiving, may make them more critical of traditional economic models that ignore these contributions. This perspective could lead female students to question dominant ideologies and be more skeptical of authoritative sources that fail to account for gendered aspects of the economy. Additionally, women's greater sensitivity to issues of care and fairness in decision-making (Gilligan, 1982) may shape their economic thinking, making them less susceptible to rigid ideological views and more open to diverse perspectives (Akerlof & Kranton, 2000).

Being part of a male-dominated field like economics may also encourage women to adopt a more critical approach to established norms and authority. Women in such environments often face gender-based discrimination and marginalization (Gintehr & Kahn, 2004; Wu, 2018), which fosters a heightened awareness of power dynamics and institutional biases (Baker, 2010; McDowell, 1997). The experience of being outsiders in their field could push female students to resist conforming to established norms and instead to engage more critically with economic ideas.

7. Conclusion

This study contributes to the growing debate surrounding the narrow ideological framework embedded in economics education and the increasing calls for a more pluralistic approach to economics and economics education. By highlighting a specific manifestation of ideological and authority biases fostered through economics education, our findings underscore the influence of economics' rigid and monolithic discourse in shaping pedagogy, the socialization processes that lead students to internalize and solidify an "economics" mindset, and the institutionalized power dynamics that establish professional "norms." These factors, in turn, undermine students' ability to think independently, limiting their capacity to critically engage with the economics education they receive—even when they are dissatisfied.

Our findings suggest that, as students progress through their economics education, these ideological and authority biases intensify. The more pronounced reactions of PhD students to the removal or substitution of source attributions illustrate how prolonged exposure to mainstream ideas, alongside the self-selection process that "weeds out" those who don't or can't "think like an economist," reinforces these biases. Political orientation and its underlying ideologies also

significantly mediate these biases, particularly among students leaning to the right of the political spectrum, with the effect most prominent at the PhD level.

This pattern reveals a troubling trend: as students advance, they increasingly subscribe to ideological and authoritative mindsets that marginalize or dismiss alternative viewpoints. This runs counter to the fundamental mission of higher education—to cultivate critical thinking, challenge pre-existing beliefs, and foster independent evaluation that encourage engagement with a broad range of ideas. By scrutinizing the influence of authority and ideological biases, our study raises critical questions about the future of economics education. Can the discipline truly foster critical thinking and adopt a pluralistic approach to understanding the economy, or does it perpetuate entrenched ideologies, constraining intellectual independence and exposure to diverse perspectives?

Our findings regarding the significant role of gender in shaping students' engagement with economics ideas provides further insights into the process underlying the formation of ideological and authority biases among economics students. We find clear evidence that male students exhibit a notably stronger bias in favor of mainstream sources. Women's lived experiences, especially in relation to unpaid labor and caregiving, likely provide them with a unique lens through which they could critically assess economic models that overlook these roles. This perspective may foster greater skepticism toward prevailing ideologies and authoritative sources that fail to address gendered economic realities. Furthermore, women's heightened attention to issues of care and equity in decision-making may lead them to be less influenced by rigid ideological views and to be more open to considering alternative viewpoints. As members of a male-dominated field, women may also possess a heightened awareness of power dynamics and institutional biases, driving them to challenge established norms more critically than their male peers.

The implications of our findings extend beyond the classroom. Given the generative nature of ideology, these biases are likely to shape students' civic lives and professional trajectories, influencing their future research, policy positions and recommendations, and broader economic thinking and civic behaviour. Unrecognized biases, as previous studies suggest, can create cascading effects—altering not only how economists conduct research and engage with theoretical debates but also, for those involved in policy discussions, how they frame issues and position themselves in public policy debates. Beyond policy advising and more subtly, these biases shape what Hirschman & Berman (2014) describe as the *cognitive infrastructure of policymaking* — the

underlying conceptual frameworks, “economic” styles of reasoning and rhetoric, and technical policy tools and devices that shape how policymakers define and approach problems, interpret data, and formulate solutions.

The economic world – especially if we recognise that it is embedded in society, which is in turn embedded in the natural world – is large and complex. Grasping this world requires multiple perspectives and methods to fully understand its various dimensions, as different approaches often yield distinct insights even when the exact same aspect of the economy is studied. No single theory or method can capture the entirety of the economy, no matter how much one tries to come up with universalized or naturalized concepts. Therefore, pluralism is not only useful but imperative, if we are to understand the economy better (Chang, 2014; Chang & Lari, 2024). Pluralism requires approaching the world from a broad variety of vantage points. In economics education, this means introducing students to perspectives that make different assumptions, focus on diverse problems or different aspects of a given problem, use different units of analysis, apply various methodological approaches, and employ distinct ways of reasoning.

Many mainstream economists continue to dismiss calls for pluralism in economics, claiming that the discipline already embraces a variety of theories, models, and methods. We argue that this "variety" is limited, constrained within the narrow confines of the mainstream discourse (Chang & Lari, 2024). It is akin to a restaurant boasting a “diverse” menu, only for the options to consist primarily of variations of potatoes—mashed, gratin, soup, salad, bread, and so on. While there appears to be a choice, the fundamental ingredient remains the same, much like the restricted range of “accepted” and “legitimate” perspectives in mainstream economics.

This illusion of variety masks a deeper homogeneity: what is often presented as diversity within mainstream economics is, in reality, a collection of models that share foundational assumptions about human behavior, market dynamics, and the role of institutions. The dominance of methodological individualism, utility maximization, and equilibrium analysis ensures that even seemingly different approaches remain tethered to the same epistemological and ontological framework (Chang & Lari, 2024).

Some other economists acknowledge that a degree of plurality in economics may be beneficial, yet they argue that it must be carefully “managed” to safeguard the discipline’s supposedly non-negotiable theoretical foundations. They contend that such constraints are necessary to prevent “chaos” or excessive “transaction costs” resulting from “too much plurality,”

while also preserving economics "identity," "unity," and "social and scientific authority" (Chang & Lari, 2024; Coyle, 2007; Goodwin, 1998; Lari & Mäki, 2024; Tirole & Rendall, 2017).

However, the notion that pluralism undermines rigor or credibility is misguided—multiple perspectives do not breed confusion but rather deepen our understanding of complex economic phenomena by offering a broader set of analytical tools. Likewise, what some perceive as "chaos" or "excessive debate" is, in reality, a hallmark of a healthy and dynamic intellectual environment, fostering deeper inquiry rather than signaling disciplinary decline. Scientific inquiry is often "messy," but that messiness is part of healthy debate and knowledge creation. Disciplines thrive when they encourage competing research programs to engage with each other. Other social sciences like sociology, political science, and history have successfully accommodated a plurality of methods and perspectives without degenerating into incoherence and chaos.

More importantly, enforcing a rigid, singular identity for economics turns the discipline into a form of intellectual orthodoxy, or even intellectual totalitarianism —reminiscent of medieval Catholic theology—where the framework serves to legitimize the existing social order rather than to critically examine it (Chang & Lari, 2024). Other social sciences thrive despite housing multiple schools of thought, demonstrating that intellectual diversity does not erode scholarly legitimacy. If anything, suppressing competing perspectives in the name of maintaining authority can stifle creativity, hinder knowledge creation, and erode public trust, particularly when mainstream economic models fail to adequately address pressing real-world issues. Ultimately, attempts to tightly regulate pluralism within economics reflect a deeper discomfort with open inquiry and critical engagement. Such restrictive logics are not only unfounded but also detrimental to the discipline's capacity for innovation, relevance, and engage in meaningful self-reflection and critique.

Economics education urgently needs reform. Our evidence suggests that a more pluralistic approach —one that integrates diverse theoretical traditions, methodological frameworks, and real-world perspectives— would provide students with a deeper, more critical understanding of economic issues. Pluralism would expose students to non-mainstream schools of thought (such as institutional, feminist, post-Keynesian, Marxian, and ecological economics) while fostering engagement with historical, political, and ethical dimensions of economic decision-making.

Recognizing the value-laden and ideological aspects of economics discourse is crucial for cultivating a more inclusive and pluralistic discipline—one capable of addressing real-world

complexities. This awareness also benefits students, encouraging them to approach their studies with epistemic humility and critical thinking, rather than passively accepting the dominant paradigm as universal truth. True pluralism demands openness to fundamentally different perspectives, not just minor adjustments to the neoclassical framework and its ideological foundations (Chang & Lari, 2024).

By moving beyond the neoclassical dominance, a truly pluralistic curriculum would encourage students to critically assess economic models, question assumptions, and develop more inclusive, socially responsive policy solutions. This shift could also helps temper the overconfidence and intellectual insularity often seen among economics students, fostering a more open and reflective intellectual environment that values critical dialogue and challenges entrenched norms. Encouragingly, there are promising examples of introductory economics textbooks that have embraced pluralism in economics teaching (e.g., Chang, 2014; Fischer et al., 2018; Fullbrook, 2007; Hill & Myatt, 2010; Lee, 2018; Muijnck & Tieleman, 2022; Myatt, 2023; Reardon et al., 2018; Staveren, 2015).

However, a crucial question remains: who will be equipped to teach these diverse perspectives when most economics instructors themselves were entrenched in the narrow mainstream paradigms? Without a concerted effort to broaden educators' own understanding of these alternative approaches, the challenge of implementing true pluralism in the classroom remains a major challenge for the discipline.

In capitalist societies, economists play a crucial role in shaping social, political, and economic aspects of our lives, influencing how policymakers understand and address key issues. Their influence has only grown in recent decades as market logic has penetrated nearly every aspect of daily life. While economists often lament their lack of influence over policy decisions, their role in framing problems and shaping the policy tools and devices used to address them cannot be understated (Hirschman & Berman, 2014).[9] As Callon (1998) argues, these tools and devices

[9] Examples of policy tools include inflation targeting (which prioritizes low inflation at the expense of wage growth and employment), carbon pricing (which shifts financial burdens onto consumers rather than major polluters), means-testing for welfare (which creates bureaucratic hurdles that exclude those in need while reinforcing stigma), labor market deregulation under the guise of "flexibility" (which fuels precarious, low-wage employment), and privatization of public services (justified in the name of efficiency, often at the cost of equity and access). Policy devices include standardized test-based education evaluations (which narrow curricula and disadvantage marginalized students), fiscal deficit as a key policy concern (which justifies austerity while overlooking the benefits of public investment), cost-benefit analysis (which prioritizes economic efficiency over social and environmental considerations), GDP and GDP growth as primary indicators of prosperity (which ignore inequality, unpaid labor, and environmental harm), and unemployment rate as a dominant labor market metric (which obscures job quality and underemployment).

do more than measure reality—they actively shape reality by provoking behavioral responses and influencing strategic actions. Given the discipline's outsized influence, it is vital to embrace an approach that rigorously engages with all relevant ideas about how economies function, irrespective of who developed the idea and which camp they belonged to —ensuring students are exposed to a broad spectrum of perspectives throughout their education.

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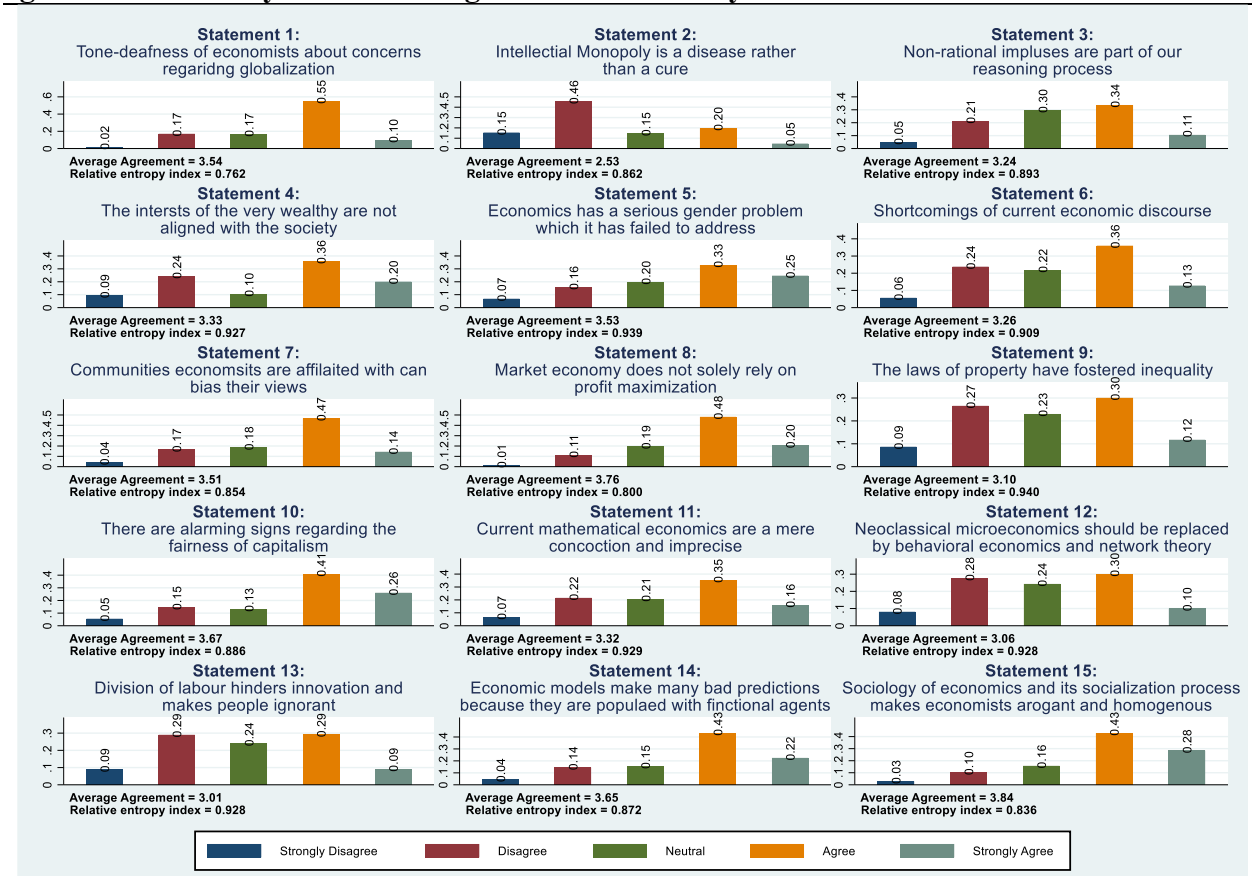
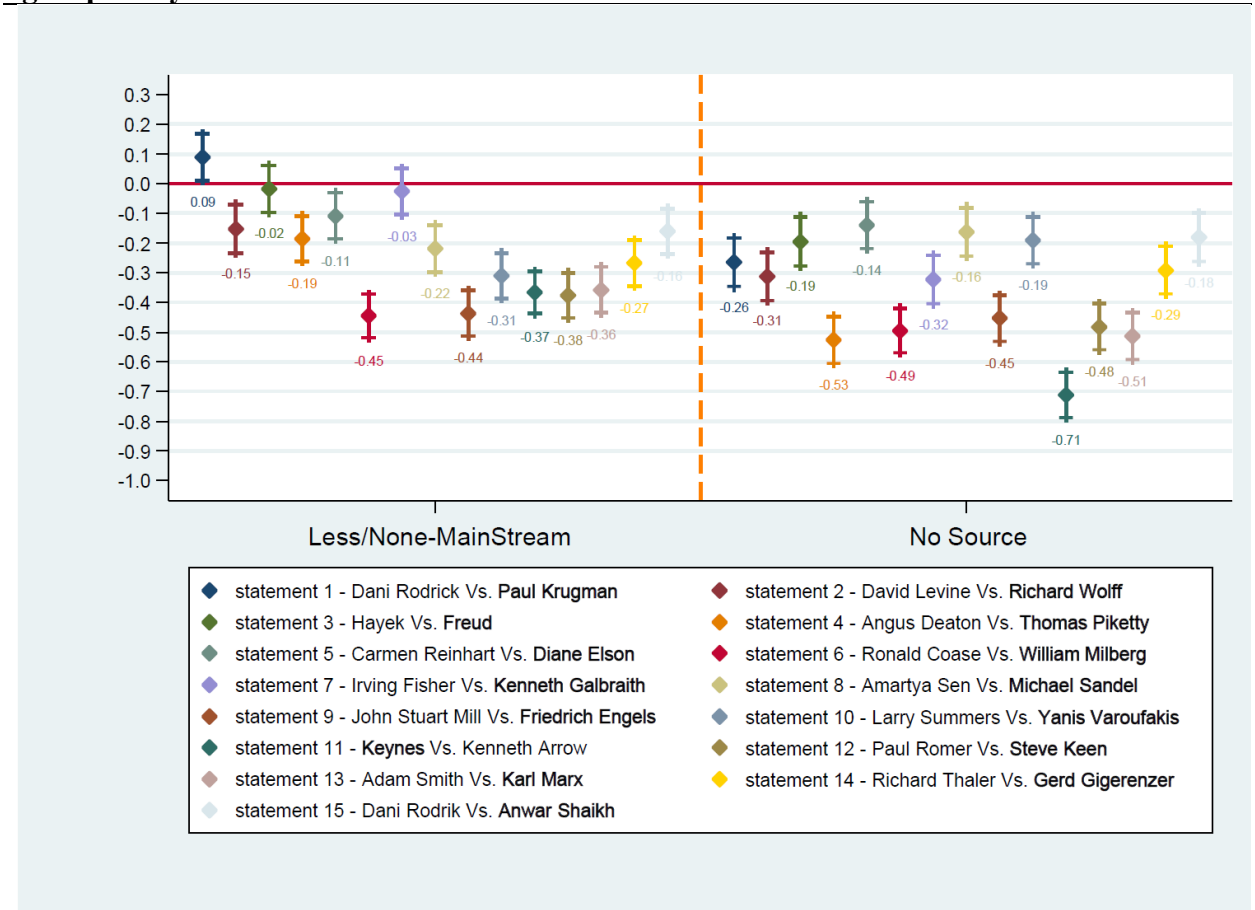
Tables and Figures

Figure 1: Probability of different agreement levels – By statement



Note: See Section 1 in our online appendix for a complete list of statements and sources. The relative entropy index reported for each graph is derived from information theory and has a theoretical range of 0 for perfect consensus and 1 for no consensus at all. The entropy index is given by $\sum -p_i log p_i$, where p_i is the observed relative frequencies for our five response categories. The relative entropy index is then calculated by dividing the entropy index by the maximum possible entropy (i.e. $p_i = 0.2$).

Figure 2: OLS estimates of differences in agreement level between control and treatment groups – By statement



Note: Agreement levels is z-normalized for each statement. Control variables include gender, age, academic level, country, English proficiency, research area. Both 90% and 95% confidence intervals are displayed for each estimate. The two horizontal lines on each confidence interval band represent where the 90% confidence interval ends.
First (second) listed source for each statement is the actual (altered) source. Bold source for each pair refers to the less-/non-mainstream source. See Section 1 in our online appendix for more details.

Table 1: OLS Estimated Treatment Effects

A: In Units of Agreement Level	(1)	(2)	(3)	(4)
Treatment 1 (none-/less-mainstream source)	-0.185***	-0.186***	-0.188***	-0.189***
	(0.0136)	(0.0136)	(0.0136)	(0.0136)
Treatment 2 (no source)	-0.399***	-0.396***	-0.395***	†
	(0.0139)	(0.0140)	(0.0140)	
B: In Units of Standard Deviation				
Treatment 1 (none-/less-mainstream source)	-0.159***	-0.160***	-0.161***	-0.163***
	(0.0117)	(0.0117)	(0.0117)	(0.0117)
Treatment 2 (no source)	-0.343***	-0.341***	-0.340***	†
	(0.0120)	(0.0120)	(0.0120)	
P-value: Treatment 1 = Treatment 2	0.000	0.000	0.000	NA
Controls	No	Yes	Yes	No
More Control	No	No	Yes	No
Fixed Person Effects	No	No	No	Yes
Number of observations	41025	41025	41010	27570

Note: Heteroskedasticity-robust standard errors are reported in parentheses. Significance levels: *** < 1%, ** < 5%, * < 10%. The dependent variable is agreement level on a scale from 1 (strongly disagree) to 5 (strongly agree). For Panel B, the dependent variable is z-normalized.

Controls include gender (2 categories), age (6 categories), country (10 categories), current student status (9 categories), level of English proficiency (5 categories), and research area (15 categories). More Controls include country/region of birth (21 categories), field of study (3 categories), undergraduate major (6 categories). See the table of summary statistics in our online appendix for more details on different categories. See Table A5 in our online appendix for estimated coefficients for control variables.

† It is not possible to identify the effect of treatment 2 in models with individual fixed effects since those who are sorted into treatment 2 receive all statements without a source and therefore there is no variation in treatment within a person and across statements.

Table 2: OLS Estimated Treatment Effects – By Student Status

	(1)	(2)
Master's student	0.0171	0.0370
	(0.0258)	(0.0255)
PhD student	-0.0213	-0.0306
	(0.0213)	(0.0210)
Undergraduate student × Treatment 1	-0.0946***	-0.0901***
	(0.0196)	(0.0192)
Master's student × Treatment 1	-0.0882***	-0.0965***
	(0.0296)	(0.0293)
PhD student × Treatment 1	-0.227***	-0.233***
	(0.0167)	(0.0165)
Undergraduate student × Treatment 2	-0.276***	-0.248***
	(0.0201)	(0.0199)
Master's student × Treatment 2	-0.266***	-0.286***
	(0.0305)	(0.0300)
PhD student × Treatment 2	-0.409***	-0.407***
	(0.0171)	(0.0169)
Controls	YES	YES
Controls including political orientation	NO	YES
Number of observations	41,025	41,025

Note: Heteroskedasticity-robust standard errors are reported in parentheses. Significance levels: *** < 1%, ** < 5%, * < 10%. The dependent variable is agreement level on a scale from 1 (strongly disagree) to 5 (strongly agree) and is z-normalized. Controls include gender, age, country, and level of English proficiency.

Table 3: OLS Estimated Treatment Effects – By Student Status and Political Orientation

	(1)	(2)	(3)
	Undergraduate	**Master's**	**PhD**
Far left × Treatment 1	-0.0126	-0.0963	-0.186***
	(0.0431)	(0.0790)	(0.0394)
Far left × Treatment 2	-0.273***	-0.123	-0.297***
	(0.0506)	(0.0769)	(0.0428)
Left	-0.232***	-0.224***	-0.211***
	(0.0378)	(0.0671)	(0.0322)
Left × Treatment 1	-0.0970***	-0.120**	-0.206***
	(0.0302)	(0.0502)	(0.0244)
Left × Treatment 2	-0.235***	-0.327***	-0.417***
	(0.0317)	(0.0519)	(0.0253)
Center	-0.392***	-0.390***	-0.381***
	(0.0460)	(0.0678)	(0.0372)
Center × Treatment 1	-0.0915**	-0.0545	-0.250***
	(0.0463)	(0.0506)	(0.0360)
Center × Treatment 2	-0.270***	-0.249***	-0.369***
	(0.0481)	(0.0547)	(0.0357)
Right	-0.460***	-0.493***	-0.400***
	(0.0435)	(0.0753)	(0.0408)
Right × Treatment 1	-0.122***	-0.1000	-0.262***
	(0.0422)	(0.0710)	(0.0447)
Right × Treatment 2	-0.213***	-0.301***	-0.491***
	(0.0419)	(0.0718)	(0.0426)
Far right	-0.602***	-0.386***	-0.505***
	(0.0834)	(0.120)	(0.0768)
Far right × Treatment 1	-0.123	-0.206	-0.623***
	(0.115)	(0.153)	(0.106)
Far right × Treatment 2	-0.313***	-0.304*	-0.642***
	(0.0961)	(0.182)	(0.122)
Number of observations	14325	6330	20370

Note: Heteroskedasticity-robust standard errors are reported in parentheses. Significance levels: *** < 1%, ** < 5%, * < 10%. The dependent variable is agreement level on a scale from 1 (strongly disagree) to 5 (strongly agree) and is z-normalized. Controls include gender, age, country, and level of English proficiency.

Table 4: OLS Estimated Treatment Effects – By Gender

	(1)	(2)	(3)
Female	-0.00432	-0.0676***	-0.0970***
	(0.0175)	(0.0174)	(0.0174)
Male × Treatment 1	-0.201***	-0.201***	-0.201***
	(0.0145)	(0.0142)	(0.0140)
Male × Treatment 2	-0.371***	-0.371***	-0.363***
	(0.0147)	(0.0146)	(0.0145)
Female × Treatment 1	-0.0742***	-0.0781***	-0.0745***
	(0.0198)	(0.0195)	(0.0194)
Female × Treatment 2	-0.274***	-0.265***	-0.272***
	(0.0206)	(0.0204)	(0.0203)
P-value: Male × Treatment 1 = Female × Treatment 1	0.000	0.000	0.000
F-statistic: equality of coefficients	26.66	26.10	27.79
P-value: Male × Treatment 2 = Female × Treatment 2	0.000	0.000	0.000
F-statistic: equality of coefficients	14.64	17.86	13.33
Controls	YES	YES	YES
Controls + Political Orientation	NO	YES	YES
Controls + Political Orientation + Political Typology	NO	NO	YES
Number of observations		41,025	

Note: Heteroskedasticity-robust standard errors are reported in parentheses. Significance levels: *** < 1%, ** < 5%, * < 10%. The dependent variable is agreement level on a scale from 1 (strongly disagree) to 5 (strongly agree) and is z-normalized. Controls include: PhD completion cohort, current status, country, research area.