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Qualitative Economics: Integrating Qualitative Research Methods into Economic Analysis

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Abstract

Economics is typically a *quantitative* science, which exclusively relies on mathematical techniques, statistical analysis, experimental work, and neglects *qualitative* evidence, data, and research methods. Although economic methodology scholars have outlined this unbalance, and a few studies pursued qualitative economic research in the past, these are rather the exception to the rule. However, most social sciences and adjacent disciplines do adopt qualitative methodologies when tackling economic phenomena, issues, and topics. Drawing upon the history of economic thought and the philosophy of the social sciences, this dissertation asks *why* economists do not rely on qualitative inquiry, *how* they could implement qualitative research, and in *what* subject domains. In doing so, it indeed (1) unveils the potential contribution of qualitative methods to both economic theory and policy, (2) highlights the role of sociocultural factors over behavioural elements in economic analysis, and (3) suggests the need for an ontological, epistemological, and axiological shift towards 'qualitative economics'.

Keywords: Economic analysis, Economic methodology, Qualitative economics, Qualitative research methods, Social sciences.

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A coloro che creano un futuro diverso

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Acronyms

BE	Behavioural economics
EBM	Evidence-based management
GET	General equilibrium theory
HE	Heterodox economics
IO	Industrial organisation
NE	Neoclassical economics
QE	Qualitative economics
QRMs	Qualitative research methods
RCTs	Randomised controlled trials

Introduction

> I did not choose a methodology of open-ended interviews deliberately or self-consciously. […] It was in part a considered reaction to the limitations and failings I discovered when I tried to apply the more conventional research approach. […] I continued doing it because it was interesting, fun and seemed to yield insights into problems that I considered important to solve, socially and morally. […] It has been only recently, when I reached an age where people could believe – mistakenly – that the cannons of the profession were very different when I was a young researcher that I have felt a need to justify what I was doing back then.
>
> (Piore, 2006, pp. 17-18)

Economics is a *quantitative* social science (Redman, 1997; Colander, 2008), which exclusively adopts quantitative research methods for tackling its objects of analysis. Throughout the development of the discipline, economists have used, improved, and mastered a broad set of 'quantitative' methodologies including mathematical modelling, statistical techniques, and econometrics (Porter, 1986; Morgan, 1990; Weintraub, 2002). Despite an increasing shift from theoretical to empirical work (Angrist & Pischke, 2010), economics is predominantly relying on statistical and experimental data, rather than 'qualitative' evidence (Hill & Meagher, 1999). In fact, economists have 'to truncate description of their fieldwork' (Helper, 2000, p. 231) in their articles, with qualitative data counting for less than 1% of top economics publications (Basole & Ramnarain, 2016, p. 136).

This methodological evolution did leave apart *qualitative* research methods, of data collection – interviews (Bewley, 2002; Gillham, 2005; Piore, 2006), focus groups (Schaafsma et al., 2017; Yayeh, 2021), ethnographies (Levitt & Venkatesh, 2001; LeCompte & Schensul, 2010), case studies (Bennett & Elman, 2006; Gibbert et al., 2008; Ylikoski & Zahle, 2019) – and data analysis – content analysis (Bauer, 2000; Mayring, 2004), thematic analysis (Braun & Clarke, 2006), grounded theory (Finch, 2002), discourse analysis (Gill, 2000; Mottier, 2002). As a result, economic methodology is unbalanced towards *technical* progress (Boumans & Herfeld, 2022), and measurability (Boumans, 2004), at the expense of its *conceptual* poverty (for a discussion see Cencini, 2015, pp. 1-15), and scientific relevance (Chamlee-Wright, 2010b). All those economic factors, variables, and phenomena that are not quantitatively measurable with currently available methodologies tend to be lost, unseen, and eventually neglected by economic analysis (Pickbourn & Ramnarain, 2016).

Although scholars have critically assessed the economists' methods (Boland, 1982; Caldwell, 1982/1994; McKenzie, 1983; Pheby, 1988; Blaug, 1980/1992), only a few focused upon the lack of qualitative inquiry in economics (Helper, 2000; Bewley, 2002; Piore, 2006; Bergmann, 2007; Starr,

2014). Examples of qualitative economic research include studies in finance (Burton, 2007; Jefferson, 2007; Ho, 2009; Werner, 2014), health (Lincoln, 1992; Coast, 1999; Coast et al., 2004; Obermann et al., 2013), wellbeing (Hiswåls et al., 2017), development (Colin, 2008; Lyon & Porter, 2009; Deere & Catanzarite, 2016), labour (Blinder, 1990, 1991; Blinder et al., 1998), inequality (Schor, 2017), and welfare policy (London et al., 2007). Besides these applied works, the uses of qualitative research methods to date lie outside the 'mainstream', being pursued by heterodox scholars; including feminist (Schwartz, 1994; Berik, 1997; O'Hara, 1999) and Austrian economics (Boettke et al., 2004; Chamlee-Wright, 2010a), for instance.

Nonetheless, other social sciences extensively and successfully adopt qualitative research 'to examine topics of economic significance' (Basole & Ramnarain, 2016, p. 147) for scientific, policy, and business purposes. It is the case of sociology (Slater, 2005; Warde, 2015), anthropology (Hann, 1983/2018; Carrier, 2022a), and political science (Mahoney & Goertz, 2006; Copeland & Boulianne, 2022), among others. Adjacent disciplines, such as marketing (Belk et al., 2012) and organisational research (Mir & Jain, 2018), also adopt qualitative methodologies for the inquiry of socioeconomic phenomena and 'economic' issues; including the study of consumer and firm behaviour (Hirschman, 1986; Jemna, 2016). More recently, promising efforts in this direction are found in the latest articles of behavioural economists (Chater & Loewenstein, 2023; Schimmelpfennig & Muthukrishna, 2023).

Despite previous work looking at the adoption of economic methods in other social sciences' territories and disciplinary areas (Swedberg, 1990, pp. 325-327) and explaining the reasons why these were influenced by the former (Hirsch et al., 1987; Lazear, 2000; Cedrini & Dagnes, 2022), scholars did not study the opposite phenomenon: the lack of (qualitative) social science methods in economics. Aiming at filling this gap, this doctoral dissertation examines the potential contribution of qualitative research methods in economics. It indeed asks: (1) *why* economics is not 'qualitative', namely, which are the reasons for economists not to adopt qualitative methods; (2) *how* can economics become so, notably, what are the routes economists should follow to undertake qualitative inquiry; and (3) *what* could 'qualitative economics'[1] do, looking at economic theory and policy domains that are positively affected by the power of qualitative research.

In answering the first question, this thesis outlines three groups of reasons explaining the lack of qualitative research in economics. These include: (a) historical and political reasons, emphasising the influence of the natural and physical sciences over the methodological development of economics (Mirowski, 1989; Morgan, 1990); (b) cultural and institutional reasons, referring to the pivot role of

[1] Although scholars using this term criticised neoclassical economic theory for neglecting economic structures (Clark & Fast, 2019), and adopted insights from the philosophy of science (Fast & Clark, 2013), they (1) referred to the use of algebraic signs in the study of complex systems (Lancaster, 1962, 1964, 1965), (2) shared a normative view conceiving economics as a true 'science' (Clark & Fast, 2019), and (3) merely drew on the areas of organisation studies, linguistics, and symbolic interactionism (Fast & Clark, 2012).

economists (Caballero, 2010; Maesse, 2015; Earle et al., 2016) in public policy (Mitchell, 1998; Lebaron, 2001; Michaels, 2011; Fourcade et al., 2015) and academic job market dynamics (Freeman, 1999; Card & DellaVigna, 2013; Rossier et al., 2017); and (c) philosophical and epistemological reasons, including a 'hardness bias' (Akerlof, 2020) privileging objectivist approaches and causality considerations (Finch, 2002; Héritier, 2008) over descriptive and interpretive research (Sandelowski, 2000; Piore, 2006; Lavoie, 2011).

In answering the second question, this thesis points out the need to: (a) shift the philosophical assumptions (Newman & Benz, 1998) towards an 'open' ontology (Lawson, 2003; Dow, 2004a, 2009) and 'interpretive' epistemology (Flick et al., 2004; Mottier, 2005); (b) develop existing fields already adopting qualitative research for economic inquiry, by drawing upon the aforementioned studies; and (c) integrate the methodologies (Cronin, 2016; Creswell & Creswell, 2022) through different research uses, designs, and purposes (Bewley, 2002; White, 2002; Piore, 2006), complementing quantitative results (Blinder, 1994; Beck, 2006). This shall transform economists' axiological orientation, moving their focus from measuring *how much* and *how likely* to capturing the *how* and the *why* of economic phenomena (Helper, 2000; Miles et al., 2014; Jemna, 2016); as well as from models' and experiments' generalisability to the descriptive and explanatory instances of observational research (Blinder, 1990; Helper, 2000; Gordon, 2011).

In answering the third question, this thesis lists those domains of economic theory and policy where qualitative economics could best contribute to established knowledge. These include standard microeconomics, through the *in-depth* understanding of demand formation, and demand-side aspects of economic life (Chang, 2014) such as consumer tastes, preferences, beliefs, motives (Akerlof, 2020; Kreps, 2023), values, experiences, and attitudes (Kanbur, 2003; Logan, 2015). In macroeconomics, the use of qualitative insights would allow to embed narratives and stories (Akerlof & Snower, 2016; Shiller, 2019), complexity (Chamlee-Wright, 2010b; Focardi, 2015; Pickbourn & Ramnarain, 2016), institutional and structural elements (Kosters & van der Heijden, 2015; Basole & Ramnarain, 2016), as well as contextual and sociocultural factors (Lavoie & Chamlee-Wright, 2000; Fourcade, 2007; Lavoie & Chamlee-Wright, 2015; Goldschmidt et al., 2016; Carrier, 2022a) into economic analysis.

Through a conceptual review (see Hulland, 2020) of existing knowledge from the philosophy of the social sciences, in particular the philosophy of economics, and the history of economic thought as well as literature from adjacent disciplines, this work contributes to: (1) economic methodology, by informing scholarly discussions on the adoption of qualitative methods for economic analysis; (2) economic theory itself, by reconsidering qualitative research for the inquiry of economic phenomena; and (3) economic policy, by underlining the key role of non-quantitatively measurable, sociocultural variables over behavioural features for understanding economic reality.

This dissertation is structured as follows. The first chapter[2] offers an overview of the history of economic method, with a focus on the evolution of mathematical and statistical techniques adopted for tackling economics' subject matters. These entail mathematical economics, statistical economics, econometrics, and the latest empirical tools of big data analysis and experimental economics. In the second section of the chapter, an account of the main issues of modern economics is provided. These include theoretical dogmatism, methodological individualism, reductionism, decontextualisation, and value neutrality. The technocratic nature of the economics discipline, relying upon overspecialisation and sophistication, reputation, and legitimacy, as well as its role in advising policy and businesses are especially examined.

The second chapter presents the main fields, areas, and domains of qualitative work in other, adjacent disciplines; including psychological and behavioural science (that is, behavioural economic theory and policy), sociological and cultural approaches to consumption (that is, economic sociology and consumer culture) and organisations (that is, organisation studies), and political and geographical studies on markets (that is, economic geography and market studies). The following section specifies the qualitative research methods used in these areas by explaining the rationale, aims, and features of each; including data collection (to wit, interviews and focus groups, observations and ethnographies, case studies) and data analysis (to wit, content and thematic analysis, grounded theory, discourse analysis) methods, as previously mentioned.

The third chapter explores the philosophical assumptions of both quantitative and qualitative economics, analysing the ontological, epistemological, and methodological differences between the two. It thus examines the conceptions of scientific development underlying economics, the influence of natural and physical sciences on its methodological evolution, and the requirements for economics to be considered a 'science'. Furthermore, it explores the established methodology of economics, by emphasising its ontological and epistemological premises. The second section of the chapter proposes those fundamental shifts in philosophy of science, axiological features, and scientific criteria needed for economic work to host qualitative inquiry.

The fourth chapter answers the research questions of this thesis, by discussing *why* economics is not qualitative, *how* economics can become qualitative, and *what* qualitative economics could do. Besides outlining the reasons mentioned above, this chapter concludes by offering three use cases for qualitative economic research. Here, dedicated sub-sections will provide an overview of qualitative methods' potential contribution to the policy domains of environment and climate change, markets and financial crises, and poverty and inequality, respectively. This chapter, in fact, justifies the scope

[2] Each chapter of this work is divided into sections and sub-sections that are indicated by the respective numerations (see the table of contents).

of this thesis, by showing the power of qualitative methodologies in facing current global challenges, unveiling their hidden dimensions, and capturing their complex and 'systemic' aspects – whose nature escapes the lens of quantitative economic research.

Although economic methodology might seem like a marginal topic of niche interest, the lack of qualitative research methods in economics has relevant consequences; not only for the discipline itself, but also – and more importantly – for its policy implications. Throughout this dissertation, the role of qualitative methods in analysing economic phenomena, unveiling their causes, and uncovering their dynamics, is underlined both at the theoretical and applied level. Building upon the existing gaps in the economics literature and identifying possible domains of application for qualitative economic inquiry, this thesis suggests methodological directions for future economic studies and enlightens the path towards *qualitative economics*.

1. Quantitative economics: a review

This chapter is dedicated to 'quantitative economics'; namely, quantitative methods as they have been applied to traditional economic analysis and ultimately constituting modern economic science. It will serve as background knowledge for the rest of this work, and point of departure for the analysis run throughout this thesis. Meanwhile, the arguments in favour of 'qualitative economics' (QE), namely the use of qualitative research methods (QRMs) for economics – representing the core of this work – will build upon their main added value to standard quantitative methods, among other things.

Here, a brief history of economic thought will be presented, with a strong focus on economic method. The historical developments of mathematical economics, that is the use of mathematics, and statistical economics, namely the use of statistical analysis and econometrics, in economics will be addressed. After an account of the latest developments of empirical economics, the second section of this chapter will assess the main issues of modern economics as emerging from fundamental critiques of the discipline; including theoretical dogmatism, methodological individualism and reductionism, value neutrality, decontextualisation and atemporality of economic theory, as well as the political and societal role of economists.

1.1. A brief history of economic method

The history of economic thought explains the *why* and the *how* of economics' scientific development, and the formation of economic ideas, concepts, and methods. In fact, these are not disconnected from the real world. Eliot Roy Weintraub, a mathematician turned into an economic historian, importantly explains:

> All too often, historical works on economics are based on the fascinating notion that economic ideas are autonomous, ethereal objects that float freely and pass from one immaterial mind to another without any mediation, although they are occasionally transformed by other products of pure thought. [...] Real people have beliefs that, as such, are considered by them to be 'ideas', which are in turn transformed, reconfigured and reinterpreted into chain representations and re-representations in so-called 'discourse communities', which are sometimes intentional and sometimes not (Weintraub in Parisi & Alacevich, 2009, p. 293, author's translation).

Despite not representing an exhaustive account of economic ideas, a short introduction into the history of economics – including the most important economists and their contributions – shall be useful for drawing the evolution of the discipline and spotting its main turning points. This will hopefully serve not only as a chronological timeline but also as a conceptual map setting the ground for this work.

The first factor characterising the development of economic thought lies upon its geographical origins. On the one hand, Eastern economic thought directly followed from moral principles dictated by the religion of reference. Islamic economics, for instance, is strictly linked with the religious book *Shari'ah*, whose principles do not allow for financial activities that are considered either harmful for society or irrelevant for the real-world economy (Usmani, 1998; Iqbal & Mirakhor, 2011). Similarly, Indian economic thought builds on the caste system, whose hierarchical structure entails distinctions in the right to purvey productive activities (Dasgupta, 1993). On the other hand, Western economic thought has its roots in secular Ancient Greece. The word 'economics' itself is derived from the Greek term *oikonomia*, denoting 'activities of management, or administration, applied to persons and goods belonging to an *oikos*', intended as a family household, dwelling place or region, home land, and property in general (Singer, 1958, p. 30; Lowry, 1979).

In that time, the seeds of the basic economic principles were laid down. Xenophon developed arguments on what will later be called the 'division of labour' (Finley, 1970, pp. 3-4), while Plato set the basis for the study of public administration (Lowry, 1979, pp. 76-77). However, it is Aristotle's work that mostly built the foundation of classical economic thinking (Polanyi, 1957; Finley, 1970). He analysed exchange transactions by formulating the concept of 'surplus' and recognised the role of money in facilitating trade (Sandmo, 2011, p. 16). He also developed the first theory of value by distinguishing between 'use value' – determined by how much subjective 'happiness' the use of a good brings to its owner – and 'exchange value' – determined by the inverse relationship between the demand for a good and its use value (Gordon, 1964).

Before these concepts were further developed by the classical economists, the XVII and XVIII centuries saw the advent of two different traditions: the 'mercantilist' and the 'physiocratic' schools, that emphasised the role of the government in facilitating trade policies directed at net positive exports through the accumulation of gold and silver, and the importance of agriculture for economic growth, respectively. Whereas the former was the first to formulate a general, albeit simplified model of the economy describing all the relationships between consumption and production, the latter developed tabular constructions of flows of commodities and incomes that set the ground for modern national accounting (Sandmo, 2011, pp. 18-25).

From the late XVIII century, the actual foundations of modern economics were laid, emerging as a separate field of inquiry from philosophy, history, and law (Sandmo, 2011, p. 15). Adam Smith, with the aim to debunk the mercantilist and physiocratic principles, developed theories of productive organisation, economic growth, value, and distribution that will form the basis of modern economics (Robbins, 1998, p. 129). Meanwhile, David Ricardo's principle of 'comparative advantage' gave birth to international trade, and Karl Marx's theory of capital introduced the notions of 'surplus value' and

'exploitation' in the realm of industrial production (Sandmo, 2011, pp. 125-129). These contributions will then set the ground for the 'labour theory of value' and the 'theory of profit' (Mirowski, 1989, pp. 139-192; for an analysis of the theory of profit see Carrera, 2019).

However, the 'big questions' slowly left the stage to *micro*-economic theory; that is, the study of individual decision-making both at the consumer and firm level. Since the end of the XIX century, the 'marginal revolution' established formal relationships describing market forces and 'equilibrium' dynamics (Russett, 1966; for an account of equilibrium in economics see Ingrao & Israel, 1990; Polemarchakis, 1997; see also Pilkington, 2016, pp. 127-144). In those years of 'violent theoretical and methodological confrontation' and 'disordered intellectual impulses' (Parisi & Alacevich, 2009, pp. 151-152, author's translation), both William Stanley Jevons and Léon Walras simultaneously yet separately developed the so-called 'marginal theory of value' (for an account of economics' theory of value see Mirowski, 1989, pp. 276-353); conceived not as an intrinsic quality of commodities but as 'a ratio of exchange between two unlike commodities' (Robbins, 1998, pp. 261-267).

Whereas for the classical economists the value of goods derives from the relationship between labour and capital, towards the end of the XIX century the marginal economists proposed that scarcity and actors' subjective preferences do determine the *quantity* of the production factors (for a history of the theory of value see Fogarty & Sophister, 1996; Mazzucato, 2018, pp. 21-56). Until then, the 'objective' theory of value, informed by the conditions, times, and *quality* of work, did govern the formation of prices; with the marginalists, the value of things was determined by the price paid in the market (to wit, the equilibrium between supply and demand) and not vice versa (see Mazzucato, 2018, pp. 57-74). This clearly represents a turning point for economic theory, where the qualitative aspects of labour become secondary and dominated by the quantitative measure of goods' market prices in determining economic value.

Walras has been the first to develop a system of purely competitive markets in the form of an explicit mathematical model (Sandmo, 2011, p. 207). Building upon his work, both Francis Ysidro Edgeworth and Vilfredo Pareto introduced the concept of 'indifference curves' (Sandmo, 2011, pp. 244-247). Meanwhile, Alfred Marshall studied 'partial equilibria' (Marshall, 1890/2009) and later formulated the so-called 'general equilibrium theory' (GET),[3] setting the ground for modern supply and demand analysis (Walsh & Gram, 1980; Colander, 1995; for an account of GET see Kirtchik & Boldyrev, 2024). He also contributed to economics with the principle of substitution, the elasticity of demand, period analysis, as well as the concepts of dynamic equilibrium and marginal productivity

[3] In the post-war period, the work of economists Kenneth Arrow and Gerard Debreu's (1954) provided the mathematical proof that an equilibrium solution to the GET does exist, at least theoretically (Sandmo, 2011, pp. 402-407).

(Robbins, 1998, pp. 303-311). From this time onwards, modern economics will indeed be referred to as 'marginal' or 'neoclassical' (Sandmo, 2011, p. 30).[4]

Besides the works of XX century economists such as Friedrich Hayek and Joseph Schumpeter, discussions on macroeconomic systems were going to be less and less popular. It was only with the 1929 economic crisis, that originated in the United States, and John Maynard Keynes' theory on the relationships between income, consumption, investment, and money demand, that macroeconomics became a separate field (Sandmo, 2011, pp. 360-362). The Keynesian ideas, especially the notion of 'effective demand' determining the level of unemployment and the role of governments, represented a response to the high rates of inflation and the low rates of economic growth of the time. Nonetheless, they were later embedded into the marginalist models through the so-called 'neoclassical synthesis' operated by John Richard Hicks (1939) and Paul Samuelson (1948) (see Blanchard, 1991).[5]

With the exceptions of Milton Friedman and Robert Solow, most academic economists after the 1940s were focused on microeconomic problems, and individual behaviour analysis represented the main driver of economic theory building since then (Sandmo, 2011, pp. 416-424). It was this time that gave birth to 'game theory': the analysis of strategic interactions between individuals following rational behaviour (Neumann & Morgenstern, 1944; see also Sandmo, 2011, pp. 407-414). The key notions of 'zero-sum game', 'Nash equilibrium', and 'prisoner's dilemma' informed applications in different fields, from international relations to the biological sciences. Following economic research extensively focused on individual decision-making under uncertainty, developing concepts like 'risk aversion', 'adverse selection', and 'moral hazard'; the building blocks of most microeconomic theory until the advent of behavioural economics (BE) (Sandmo, 2011, pp. 432-438; Thaler, 2016b).

1.1.1. Mathematical economics

This section will undertake a journey throughout the history of economic methods by exploring the developments of the use of mathematical techniques in economics. In Weintraub's words, this is to draw the histories of:

[4] This trend was reinforced by Knut Wicksell's and Irving Fisher's works, who built new marginalist theory by including the classical economists' principles (Sandmo, 2011, pp. 267-293).

[5] Fellow Keynesians, including Paul Davidson, Nicholas Kaldor, Michał Kalecki, Hyman Minsky, Luigi Pasinetti, Joan Robinson, and Piero Sraffa – known as the 'post-Keynesians' –, and the so-called 'Cambridge School' further developed the original Keynes' ideas (Parisi & Alacevich, 2009, p. 208; for a review of post-Keynesian economics see Stockhammer, 2018; see also Rochon & Rossi, 2023).

> How the connections between economic science and mathematics have been considered, used, exploited and differently employed. [These] provide a different framework for analysing the evolution of economic ideas and the forms in which those ideas are expressed today (Weintraub in Parisi & Alacevich, 2009, pp. 289-290, author's translation).

Although the history of methods adopted in academic economics does only partially overlap with the history of methods applied in economic practice (namely in policy and business), they are strongly linked. In fact, the latter is often influenced by the developments of the former (Stapleford, 2009), which will be outlined in the following paragraphs.

On the one hand, for most of its history, economics – conceived as a discipline – was a literary field; and it stayed so until the first half of the XX century, when scholars using formal mathematical language in journal articles were still a minority (Sandmo, 2011, pp. 447-448). On the other hand, one can detect the use of mathematics in economics – conceived as a practice – already in Ancient Greece; and since then, it permeated many real-world applications such as financial techniques and tools. For instance, the use of primitive 'put options', that is the possibility to acquire today the right to sell tomorrow, was fairly spread in the agricultural context during that time. They were initially adopted by Thales to set the price of olives when foreseeing prosperous harvests (Kruizenga, 1956).

Around 1500 A.C., Italian mathematician Luca Pacioli invented the so-called 'double-entry bookkeeping', setting the ground for modern accounting. This practice will be later developed, in the XVIII century, by François Quesnay, who mathematically described economic systems through the aid of tables, graphs, and conceptual maps showing their functioning elements, resources, and actors. Referred to as the physiocratic *tableaux économiques*, they possibly represent the first process of institutionalisation of economics as a discipline (Parisi & Alacevich, 2009, p. 13), and may indeed be considered as early quantitative economics (Sandmo, 2011, pp. 20-25). However, it is only with the beginning of the XIX century that the origins of formal mathematical analysis of economic objects take place.

In the midst of the XIX century, Antoine Augustin Cournot's work mathematically formalised the classical principles (Robbins, 1998, pp. 252-253; Sandmo, 2011, pp. 146-152). His book (1838) is considered one of the 'milestones in the development of economics as an analytical and quantitative science' and the first 'use of mathematics as a tool of economic model building' (Sandmo, 2011, pp. 146-147). Understood as a way to support theoretical reasoning without the need to develop empirical laws, mathematics played a crucial role also in Hermann Heinrich Gossen's (1854/1983) work, which marks the beginning of economic studies in the domain of consumer behaviour (Sandmo, 2011, pp. 159-164). At the end of the century, the marginal revolution will then achieve the use of mathematics

for economic analysis; with Jevons, Walras, Pareto, and Marshall adopting mathematical notes and graphs to illustrate economic concepts and their implications (Sandmo, 2011, pp. 447-448).

Marginalism was in fact characterised by a heavy reliance on mathematical formalisation and techniques, especially differential calculus, which is essential for marginal analysis. Building upon that, marginalists developed microeconomic theories of representative individual agents that would explain consumer and firm behaviour. In Jevons' (1871/1879) words:

> Economics, if it is to be a science at all, must be a mathematical science. […] The theory consists in applying the differential calculus to the familiar notions of wealth, utility, value, demand, supply, capital, interest, labour, and all the other quantitative notions belonging to the daily operations of industry. […] To me it seems that *our science must be mathematical simply because it deals with quantities*. Wherever the things treated are capable of being *greater or less*, there the laws and relations must be mathematical in nature (Jevons, 1871/1879, pp. 3-4, emphasis in original).

Although repeatedly apologising to the wider public for the strong mathematical nature of the theory he developed, Jevons considered economics as implicitly and unavoidably mathematical (Robbins, 1998, p. 262).

Walras also believed that 'pure economics must be mathematical' (Robbins, 1998, p. 298; see also Turk, 2012). In his main work, Walras (1874/2010) writes:

> The mathematical method is not an *experimental* method; it is a *rational* method. […] Why should we persist in using everyday language to explain things in the most cumbrous and incorrect way, as Ricardo has often done and as John Stuart Mill does repeatedly in his *Principles of Political Economy*, when these same things can be stated far more succinctly, precisely and clearly in the language of mathematics? (Walras, 1874/2010, pp. 71-72, emphasis in original).

The view that mathematics is able to 'rationalise' economics, correcting the imprecisions of everyday language and shaping economic concepts towards a precise form, was shared among other marginalist economists. If Edgeworth's indifference curves were meant to accurately study consumer behaviour, Pareto also believed that the use of the mathematical method could only improve economic analysis. His work was particularly useful for deriving the properties of demand functions, and pioneered the so-called 'comparative statics analysis' (Pareto, 1909, pp. 421-431), which will be later developed by Samuelson (1947) (Sandmo, 2011, p. 398).

Marshall's theory was also particularly mathematicised. However, he stressed the importance of a 'chaste' use of mathematics. In his main publication, Marshall (1890/2009) writes:

> But while a mathematical illustration of the mode of action of a definite set of causes may be complete in itself, and strictly accurate within its clearly defined limits, it is otherwise with any attempt to grasp the whole of a complex problem of real life, or even any considerable part of it, in a series of equations. For many important considerations, especially those connected with the manifold influences of the element of time, do not lend themselves easily to mathematical expression: they must either be omitted altogether, or clipped and pruned till they resemble the conventional birds and animals of decorative art. And hence arises a tendency towards assigning wrong proportions to economic forces; those elements being most emphasised which lend themselves most easily to analytical methods (Marshall, 1890/2009, p. 850).

Despite being considered as one of the economists who were most responsible for the quantification of economics (Morgan, 1990, p. 5), Marshall was critical of the increasing application of mathematics to economic analysis. He highlighted its potential risks by arguing that mathematical language should be kept for the theorist's private use and thus only appear in footnotes and appendices (Sandmo, 2011, pp. 215-216).

Another economist who 'chastely' but significantly used mathematics is Fisher (1892), in his theory of capital based on the interest rate (Robbins, 1998, pp. 291-294). He was convinced that the future of economics would increasingly rely on mathematical methods, and they would make political economy a 'science' (Fisher, 1892, p. 109). As further illustrated in Chapter 3, the natural sciences, mechanical physics in particular, played a crucial role in the mathematical turn of economic sciences (see Mirowski, 1989, pp. 11-98). In providing coherent abstractions of the economy, mathematicians gave an epistemological authority to the economics profession, and enhanced its reputation across the social sciences (for an early history of mathematical economics see Theocharis, 1983; Mirowski, 1991; see also Weintraub, 2002; Scott, 2018).

Since then, economics has evolved from pure philosophy to a true *quantitative* science, and 'became mathematized at the same time as it became a modelling science' (Morgan, 2012, pp. 18-19). Despite the common intent, slightly different approaches coexisted. For instance:

> [Walras] desired to explain the laws of an entire economy of free exchange operating in a movement toward equilibrium; [Fisher] was constructing a model of the mechanical operation of a materially constrained economy, not purporting to discern a priori laws (Scott, 2018, p. 528).

Whereas Walras (1874/2010) introduced the methods of postulation and proof, Marshall (1890/2009) and Fisher (1892) developed the methods of hypothetical modelling. As Fisher (1892) himself argued:

> We must distinguish carefully between what may be designated as *mathematics* and *mathematical method*. The former belongs […] to every science. In this sense economics has always been mathematical. The latter has reference to the use of *symbols and their operations*. A symbol may be a letter or a diagram, or a model. All three are used in geometry or physics. […] To avoid mathematical method is to do without the rule. Symbols and their operations are aids to the human memory and imagination (Fisher, 1892, p. 107, emphasis in original).

The mathematical method was indeed considered as 'the lantern by which what before was dimly visible now looks up in firm, bold outlines', making economics escape from its phantasmagorical misty region, and see better and further (Fisher, 1892, p. 119).

The so-called 'neoclassical synthesis' operated by John Richard Hicks and Franco Modigliani in the XX century brought economics to a higher level, by formalising and translating most economic theory into precise mathematical language (Eichner, 1983, p. 516). This process was fostered by the existing imbalance between mathematical and historical economists, as well as the little success that the attempts of empirically validating neoclassical theory notoriously had. However, there are other reasons why mathematics became so relevant in the 1960s' economics training and research. Notably, the communists' achievements in science and technology during the Cold War represented a strong political incentive for American policy to invest in mathematics education both at the secondary and tertiary level, to better compete with the Soviet technological superiority (Weintraub, 2002, pp. 247-252).

For similar reasons, information and cyborg science increasingly shaped economics through the mathematical ideas of optimisation theory, game theory, dynamical theory, and probability theory (Mirowski, 2002). For instance, the concept of 'optimisation', as it is reflected by the mathematical operations of 'maximisation' and 'minimisation' of key economic dimensions (to wit, utility, profit, production costs), has been at the core of economic theory. The rationale of these operations is to calculate the most efficient solution to an economic problem, usually of resource allocation. Although the technical process in itself is 'of no interest and can be carried out by a machine' (Maris, 2005, p. 77, author's translation), most economic theory is still based upon this fundamental principle.

Lately, economics became more centred on models than theories, and mathematical modelling was fully embedded in the practices of professional economists at the end of the XX century (Morgan & Morrison, 1999). By the 1960s, economics was 'the science of building, calibrating, tuning, testing, and utilizing models' (Weintraub, 2002, p. 255). Albeit with different uses, nuances, and visions for its adoption, modelling defined economic methodology until recently (see Rodrik, 2015). As noted by McCloskey (1982/1998):

> [In the 1980s] the techniques of mathematics, statistics, diagrams, and explicit simulation, which economists viewed once as useless and arcane, had become routine. Fully two-thirds of the papers [in the *American Economic Review*] used mathematics explicitly, and most of the others were speaking in mathematics-saturated environment (McCloskey, 1982/1998, pp. 139-140).

This trend spread across most other journals advancing economic sciences, and soon mathematical language monopolised economic knowledge.

Today, mathematics still plays a fundamental role in economics and dominates contemporary economists' formal training (Colander, 2008; Yurko, 2018). Nevertheless, the increasing portion of studies merely dedicated to technical matters actually made economic theory development slower, if not stagnant (Blinder, 1999). That is, the introduction of mathematical techniques in economic theory totally captured economic analysis, dramatically reducing the room for discussion and elaboration of foundational ideas of economic thought, and hindering any conceptual progress (see Ingrao & Israel, 1990). As recently noted by French economist Thomas Piketty (2014):

> The [economics] profession continued to churn out purely theoretical results without even knowing what facts needed to be explained. […] The discipline of economics has yet to get over its childish passion for mathematics and for purely theoretical and often highly ideological speculation. […] Economists are all too often preoccupied with petty mathematical problems of interest only to themselves. This obsession with mathematics is an easy way of acquiring the appearance of scientificity without having to answer the far more complex questions posed by the world we live in (Piketty, 2014, p. 41).

For instance, the massive use of representative parameter models since the 1960s and 1970s led the profession astray from major economic problems such as poverty and inequality (Piketty, 2014).

Through the aid of mathematics, instrumental assumptions simplified the complex features of the real-world economy so that consumer and firm behaviour could be mathematically modelled. Besides leading to unrealistic models, this simplification made economic theory detached from those economic phenomena it wanted to explain in the first place. In Piketty's (2014) words:

> Such a simplification of reality may be justified if extremely specific problems are to be studied, but it severely limits the possibility of addressing the full range of economic questions that arise (Piketty, 2014, pp. 20-21).

The 'chaste' use of mathematical language was eventually forgotten; in favour of its incautious, often reckless adoption, which arguably caused more damages than benefits to the discipline of economics.

1.1.2. Statistical economics and econometrics

The scientific spirit of the XVII and XVIII centuries, the will to compete politically in the European arena, and the need to measure and quantify demographic matters in order to govern citizens are the reasons at the origins of statistics (Maris, 2005, pp. 70-83). Meant to develop informed state policy that could help both controlling the population and fostering tax revenues, the 'political arithmetic' of William Petty, John Graunt, and Gregory King is considered the predecessor of modern statistical science (Redman, 1997, pp. 142-151). At that time, however, statistics was just a descriptive tool; covering a relatively minor role in economic theory development. Despite the increasing availability of statistical data, this was the case until the end of the XVIII century.

When the work of statisticians Thomas Bayes and Richard Price emerged, it immediately affected the development of statistical science. According to this approach, phenomena are associated with a degree of probability that would increase with additional evidence (Redman, 1997, pp. 200-202; for an account of Bayesian statistics see Schurz, 2013, pp. 226-237; see also Stigler, 2018).[6] Drawing on probability theory, Bayesian statistics will dramatically influence both the physical and social sciences, including economics, for the decades to come. As noted by Weintraub:

> Just as a probability revolution occurred in physics, with the emergence of explanations offered by quantum mechanics, probability theory has also made its way into the heart of economic analysis (Weintraub in Parisi & Alacevich, 2009, p. 290, author's translation).

Since then, many of alike physical and social problems are analysed using similar criteria; originally derived from statistical mechanics by introducing the concept of 'likelihood' of the prediction in the analysis.[7]

Between the XVIII and XIX centuries, the discipline of statistics was further revolutionised. At the theoretical level, Bernoulli's 'law of large numbers' (see Casella & Berger, 2024), de Moivre's 'normal law', Gauss' 'central limit theorem', and Quetelet's notion of 'mean' provided the founding conceptual framework for statistical analysis (Maris, 2005). In particular, Quetelet's 'social physics' contributed to the introduction of statistics – conceived as the study of regularities in numerical data – in the social sciences. At the empirical level, the desire to understand the profound social changes occurring during that period fostered the use of social statistics. These developments were supported by the establishment of statistical societies such as the *British Association for the Advancement of*

[6] Later, James Clerk Maxwell transferred this approach to physics, and used probability calculus to study body systems; understanding that any physical phenomenon is irregular and governed by numerous – known as well as unknown – laws (Sylos Labini, 2016).
[7] Keynes and other economists, however, will be sceptical of probability theory's power to understand social problems (Louçã, 1998).

Science, the *Manchester Royal Society*, and the *Statistical Society of London* (Redman, 1997, pp. 151-157).

Meanwhile, Jevons' (1892) formulation of 'inverse deduction' offered a valid alternative to induction as previously conceived, and to the 'deductivist school' of Ricardo, Mill, and Bentham. This paved the way for the economists' willingness to bridge the gap between models and reality, which was already triggered by the need for empirical confirmation of economic theories and the ongoing mathematisation of the discipline (Scott, 2018, pp. 522-523). Although both were considered essential elements for the advancement of economics as a rigorous science, some believed that the adoption of empirical methods was limited to the application and extension of economic theory (Robbins, 1932, pp. 112-118; Caldwell, 1982/1994, p. 102), and only a minority of economists could use mathematical methods in a fruitful and profitable way (Morgan, 1990, pp. 2-3). Even those who mostly contributed to the mathematisation of economics (that is, Marshall, Edgeworth, Walras, Jevons, Cournot) had not systematically implemented statistical techniques in their works.[8]

Nevertheless, economics was still a non-empirical discipline, and economic theory building was mainly an effort of 'armchair' deduction (Maas, 2010) whose:

> Postulates are all assumptions involving in some way simple and indisputable facts of experience relating to the way in which the scarcity of goods which is the subject matter of our science actually shows itself in the world of reality. […] We do not need controlled experiment to establish their validity: they are so much the stuff of our everyday experience that they have only to be stated to be recognized as obvious (Robbins, 1932, pp. 78-79).

Since empirical studies were not always possible due to the difficulties of separating causal factors of economic phenomena (Hausman, 1989, pp. 116-117; see also Hausman, 1992b), efforts to make economics a true empirical science only begun at the beginning of the XX century (Hutchison, 1938; see Caldwell, 1982/1994, pp. 106-111). The foundation of the *Econometric Society* finally formalised the discipline of 'econometrics', with the aim to:

> Promote studies that aim at a unification of the theoretical-quantitative and the empirical-quantitative approach to economic problems and that are penetrated by constructive and rigorous thinking similar to that which has come to dominate in the natural sciences (Roos, 1933, p. 1).

[8] Despite rejecting the adoption of mathematical methods and techniques, it was rather the German historical school and American institutionalists – more than the neoclassical school – to welcome the use of descriptive statistics in economics (Morgan, 1990, pp. 5-6).

By building robust relationships between empirical data and economic theory, econometrics provided a valid substitute for all those cases in which controlled experiments were not feasible (Morgan, 1990, pp. 9-11; see also Brice & Montesinos-Yufa, 2019).

The first issue of *Econometrica* did stress the importance of the quantitative measurement of economic phenomena (Frisch, 1933). Following similar developments in disciplines like biometrics and psychometrics, econometrics was concerned with measurement and inference through the use of statistical methods that were very popular both in the social and natural sciences: normal distribution, regression, correlation, the method of least squares, and multivariate analysis (see also Porter, 1986; Morgan, 1990, pp. 7-9). Together with the increasing availability of economic data, these techniques made possible the systematic study of business cycles and market demand analysis, among others. Whereas the former was especially informed by the works of Kondratieff, Schumpeter, and Moore (for a discussion of business cycles see Mirante & Baranzini, 2013; for a case study see Boumans & Herfeld, 2022), the latter built upon Del Vecchio's work on Engel's law of consumer demand.

In fact, a delicate balance between the mathematical formulation of economic theories and the statistical analysis (by probability inference) of economic relationships characterised the evolution of econometrics, considered 'a creative synthesis of theory and evidence' (Morgan, 1990, p. 1; Sandmo, 2011, p. 376). On the one hand, it was a distinct field from that of *statistical* economics. If the latter focused more on empirical data and statistical laws, the former was:

> The practice of putting economic theories into mathematical form and then using them to make predictions based on available statistics (Pilkington, 2016, p. 5).

On the other hand, econometrics was also seen as a separate discipline from *mathematical* economics, which was exclusively devoted to the mathematical modelling of economic theory (Morgan, 1990, pp. 262-264).

By the second half of the XX century, econometrics became a fully independent discipline. Originally 'intended to initiate the study of estimation methods suitable for expressing in quantitative language the relationships between variables in a system' (Parisi & Alacevich, 2009, pp. 183-184, author's translation), it became generally recognised as 'the systematic application of mathematical and statistical methods to the study of economic relationships' (Sandmo, 2011, p. 369). Leveraging on this recognition, the discipline was legitimised and institutionalised by the works of Jan Tinbergen

(1951) and Trygve Haavelmo (1944), who particularly fostered applied econometrics by stressing the role of empirical analysis and statistical estimation in theory building (Sandmo, 2011, pp. 382-388).[9]

Econometric work, which shifted from testing and falsifying theoretical models to measuring and improving the quality of empirical models themselves (Morgan, 1990), soon became 'essentially a theory of rational inference from incomplete information' (Piore, 2006, p. 20). It indeed consisted of finding causal relationships across empirical variables. As explained by Piore (1979):

> Quantitative variables display a certain dispersion. A part of that dispersion is random; another part is systematically introduced by economic behavior. Econometricians are concerned with how to separate out the random dispersion and to attribute the nonrandom variation to the several different variables which are responsible for it (Piore, 1979, p. 563).

Most economic theory building of the late XX century is actually based upon the practice of detecting 'statistically significant' relationships between economic variables (Guala, 2006). If this contributed to the advancement of econometrics, it also deviated the development of economics from a conceptual and scientific issue to a merely technical matter (McCloskey, 1982/1998, pp. 112-119).

Nevertheless, the focus on econometric techniques did not avoid important misunderstandings, such as the confusion between causality and exogeneity (Zamagni, 1983). The latter is the result of a judgement about the former, and this makes explanations derived from models inadmissible from a causal point of view (see Corti, 1989). In fact:

> Most economic events are both the cause and the effect (or resultant) of the underlying structure. It seems, in short, that there are structural properties in the economic system on which the observable phenomena and relations depend, but that in turn the phenomena and relations change the structural properties (Mirante & Baranzini, 2013, p. 26, author's translation).

The risk of overlapping *theoretical* claims – formulated at the stage of 'hypothesis testing' – with *empirical* claims – the estimation of structural relationships between variables – is indeed concrete; explaining why contradictory conclusions coexisted for such long periods of economic theory (Blaug, 1980/1992).

By acknowledging the intrinsic weaknesses of econometric tools, economists should accept that 'truth does not always wear the garb of equations, and is not always born inside a computer' (Mayer, 1980, p. 176). In fact:

[9] Interestingly, the scholars who developed the econometric approach (that is, Tinbergen, Lange, Marschak, Frisch) were left-wing intellectuals viewing the economy as a system to be modelled for the sake of economic planning, governmental intervention, and institutional micro-management (Pilkington, 2016, p. 5).

> Positivist approaches to social science, particularly the search for covering explanations, are more like staging a race horse than solving a puzzle, with the various explanatory variables competing against one another. Some research questions are indeed a lot like a race horse and econometric analysis works well. But other questions […] are much more puzzle-like (Chamlee-Wright, 2010b, p. 325).

Similarly, empirical claims shall not always be considered valid *per se*. Although finance has always been data-driven,[10] the 2008 global financial crisis 'revealed the dogmatic and unfounded nature of much of the supposed evidence that is repeated over and over by decision-makers and their advisors' (Askenazy et al., 2010, internet, author's translation).

1.1.3. Empirical economics

Historically, economics has been more theoretical than empirical. Modern microeconomics, in fact, looks more like mathematical philosophy and abstract model building than an empirical science. This is because theory-driven, data-poor work has been generally considered by microeconomists as being more reliable than any empirical work; differently than in other social sciences (Hamermesh, 2013).[11] Macroeconomic research, despite relying on country statistics, is mostly based on data provided by international organisations and governmental institutions; that is, macroeconomists do not collect data themselves (for a discussion of empirical data in macroeconomics see Focardi, 2015). Furthermore, and not surprisingly, more than 60% of the articles published in the *American Economic Review* until the 1980s were not empirical (Leontief, 1982).

Since the 1990s, a decrease in theoretical studies was accompanied by a significant increase of empirical work (Hamermesh, 2013; Backhouse & Cherrier, 2017; Brice & Montesinos-Yufa, 2019; Su & Colander, 2021). Named 'empirical turn' (Angrist & Pischke, 2010; Angrist et al., 2017), this process did arguably make economics more data-based (for a discussion of the use of empirical data in economics see Sandmo, 2011, pp. 450-452) and inductive (for a discussion see Pheby, 1988, pp. 1-21; for contrasting views see for instance Bergmann, 2007; Focardi, 2015; Cherrier, 2016). Through this transformation (Colander et al., 2004; Panhans & Singleton, 2017), economics became a 'big tent quantitative social science' (Alexandrova, 2023), held together more by shared standards of rigour, methods, and professional practices than its objects of analysis, subjects, and core issues (Maas et al.,

[10] Asset pricing models, stock-market prices behaviour (Fama, 1965), the efficient market hypothesis, modern portfolio theory (Markowitz, 1952), and the financial industry itself are all based on massive use of stock prices data.
[11] It is only since the 1990s that microeconomic data are being collected through – lab and field – experiments (Angrist et al., 2017).

2011). The availability of 'big data' and the adoption of experimental methods being the key drivers of this process, will be examined in the following paragraphs.

1.1.3.1. Big data analysis

Between the XX and XXI centuries, the advent of big data was accompanied by increasing processing capacity, advanced computational tools, and tailored analytical techniques including correspondence analysis, cluster analysis, factor analysis, and classification trees. These allowed researchers to handle unprecedented quantities of data, and possibly forecast social phenomena and trends. However, the foundational principles behind big data analysis were different than those at the basis of traditional statistics. Its diffusion, in fact, brought up several unscientific procedures and contested practices that let emerge the problematic aspects and typical risks to which empirical economics could incur.

First, there is a risk to neglect the relationship between theory and evidence (for a discussion see Anderson, 2008). In general, the lack of theoretical frameworks in scientific work might lead to theory agnostic data analysis and thus non-robust conclusions. In the world of big data, this means finding *a priori* correlations between variables regardless of their theoretical links – which are rather justified *a posteriori* (see for instance Vigen, 2015). Instead of providing an understanding of the processes and causes of phenomena, big data analysis strips data from theories and rather focuses on 'correlations' that, far from describing or explaining the social world, mislead its 'true' relationships (for an account of correlations see Schurz, 2013, pp. 204-213).

As shown above, this also reflects into applied econometric work. For example, it translates into the practice of providing *ex post*, seemingly theoretical explanations to the statistically significant relationships found across data. Together with the willingness to forecast economic phenomena, this may lead to fundamental issues in scientific terms. In Cencini's (2015) words:

> Economists, very adept at "proving" *a posteriori* that they have not made mistakes despite being wrong in their predictions, chase after the reality that continually gets out of their hands (Cencini, 2015, p. 1, author's translation, emphasis in original).

Furthermore, the dangerous practice of adopting 'cookbook' econometrics (Ward, 1972, p. 151; for a critique of econometrics see Swann, 2006) might amplify preconceptions and subjective ideologies (Sylos Labini, 2016, p. 61).

Second, there is a risk to mistakenly associate the 'validity' of scientific insights with the dimension of the database; reflected by the simplistic idea that:

> Large data sets offer a higher form of intelligence and knowledge that can generate insights that were previously impossible, [providing] an aura of truth, objectivity, and accuracy (Boyd & Crawford, 2012, p. 663).

Although this belief is partially founded upon correct statistical principles such as the 'law of large numbers' (see the previous section), it does not necessarily lead to better results. In fact, the type of methodology adopted to analyse big data and the theoretical models behind them are key to provide sound, scientific conclusions.

Third, there is a risk to separate the empirical dimension from the political one. Notably, the rationale of big data analysis is to offer a 'more detailed, accurate, real-time tracking and behavioral management of the targeted consumer-citizen' (Thompson, 2019, p. 208). As a mere by-product of neoliberalism, big data are part of the so-called 'personal data economy' (Charitsis et al., 2018, p. 830), allowing for improved surveillance dynamics (Zwick, 2015) and the manipulation of consumer choice (Darmody & Zwick, 2020). Coupled with behaviour change techniques, big data analysis can indeed be a highly powerful and sophisticated tool not only for gathering personal information about subjects but also for influencing their life decisions (Yeung, 2017).

1.1.3.2. Experimental methods

Since Francis Bacon and Isaac Newton, experiments were a key feature of scientific endeavour (see Redman, 1997, pp. 162-173). Their use in the social sciences, however, dates back to the XIX century, when so-called 'quasi-experiments' were adopted in psychology to measure the 'stimulus-response' relationships; imitating the mathematics and statistics used by astronomers (Morgan, 1990, pp. 3-4). Albeit occasionally discussed by Mill, experiments in economics were non-existent if compared with other disciplines (Heukelom, 2014). Whereas physics was already an 'empirical' science, economics, until the XX century, mainly relied on non-empirical assumptions from which to deduce implications (Scott, 2018, p. 519).

For the reasons outlined above, the XX century was indeed characterised by the development of econometric tools rather than experiments. If the scope of the former is *observing* phenomena and drawing cause-effect claims based on statistical data analysis, the latter isolates the target variables by *controlling* influencing factors 'so that cause-effect relationships can be identified' (Sylos Labini, 2016, p. 31, author's translation). Regardless of how many econometric models are applied, a lot of economic theories cannot be tested or falsified without the aid of experiments.[12] That is why, at the beginning of the XX century, rudimentary economic experiments were first conducted to unveil the

[12] Arguably, this is why NE' theoretical constructions have never been empirically validated, and represented for a long time 'a source of fundamental error that needs to be corrected before any scientific progress will be possible within the discipline' (Eichner, 1983, p. 511).

dynamics of consumer demand (Moscati, 2007; for a history of experimental economics see Guala, 2010).

By then, economists' empirical research was like 'playing tennis with the net down': namely, a simple exercise of instrumentally confirming their predictions (Blaug, 1980/1992, pp. 254-257) as well as satisfying their innate desire to limit chance and control uncertainty (Maris, 2005). In fact, experimental studies remained an exception until the 1960s, when economist Vernon Smith (1976, 1982) and psychologists Amos Tversky and Daniel Kahneman brought them into economic research. The institutionalisation of the field of experimental economics was finally taking place (for a history of experimental economics see Svorenčík & Maas, 2016), and the use of experiments for examining individual decision-making in microeconomics steadily increased since then (see Guala, 2007).

Experiments can be run in laboratories or in the 'field'. If the latter usually have a less rigid structure and include more flexible techniques, the former represent the ideal type of experimental setting, where:

> The disturbing elements, which must be kept strictly under control, can be the presence of foreign gases in a chemical reaction, physical states that perturb the essential conditions, such as thermal dispersion, pressures other than at sea level, friction and resistance that hinder motion. [...] In carrying out measurements, *disturbing elements* are systematic and causal errors, the effects of which must be carefully evaluated and correctly quantified (Mirante & Baranzini, 2013, p. 25, author's translation, emphasis in original).

However, most economic phenomena are so complex that cannot be reproduced in a laboratory under controlled conditions (Méra & Hülsmann, 2018). Furthermore, it shall be stressed that:

> For various tests to be considered as confirmations or falsifications of the previous ones, one must *presuppose* that human beings deal with a situation in always the same way whenever it presents itself again. [But] this presupposition cannot be observed and tested; therefore, any 'knowledge' thus obtained is contingent on the truth of a non-falsifiable claim (Méra & Hülsmann, 2018, pp. 34-35, emphasis in original).

Albeit only partially, these issues will be overcome by the following developments of experimental economics.

One cornerstone is the emergence of randomised controlled trials (RCTs), which characterised the latest empirical revolution in economics (Angrist & Pischke, 2010; see also Heukelom, 2014; Angrist et al., 2017) and moved the discipline 'toward a hard-nosed approach to causality focused on research design and inference' (Fourcade et al., 2015, p. 92). Their use was particularly fostered by development economists (Duflo, 2006; Duflo et al., 2007; Banerjee & Duflo, 2009; Cohen & Easterly, 2009; Banerjee & Duflo, 2019), with important applications in the domains of poverty (Banerjee &

Duflo, 2012), microfinance (Banerjee et al., 2015), health (Miguel & Kremer, 2004), education (Banerjee et al., 2007), and agriculture (Duflo et al., 2008).[13]

Since the 1990s, experimental evidence represented the 'gold standard' of scientific research and informed policy implementation across different levels and fields. With the rationale of providing the 'best available evidence' to economic policy, RCTs spread across empirical economists willing to measure and test interventions much alike doctors were doing in medicine (for a history of RCTs in economics see Lewis, 2017). Drawing on 'evidence-based medicine' (Straus et al., 1997/2019), policy makers wanted to show cause-effect relationships between treatments and consequences, and measure the impact of their political actions (see for instance Halpern, 2015). Under the belief that policies were the "drugs" to common societal issues, economics surfed the wave of the so-called 'evidence-based management' (EBM);[14] putting 'the administration of social policy or development aid at the service of research' (Fourcade et al., 2015, p. 108), rather than vice versa.

This approach, however, does not come without problems (Teele, 2014; Berndt, 2015; French, 2019). The first category of them being of ethical nature. Scholars point out that the blind application of RCTs discards the sociocultural, political, and ideological dimensions from policy decisions; yet reflecting the biases of those who perform the assessments. In doing so, RCTs make the question of 'what works' implicitly more relevant than 'who counts' (Servet & Tinel, 2020; see also Polonioli et al., 2023). They indeed serve as 'a moral anchor' by 'weighting even the most uncertain of evidence claims with an aura of equitable evaluation and distributive justice', under a supposedly neutral instance (Kelly & McGoey, 2018, p. 10). Nevertheless, they tacitly reinforce the neoliberal ideology by assuming that market exchanges are the most effective form of societal regulation in all situations of social life (Servet & Tinel, 2020).

The second category of issues is of epistemological character. RCTs arguably underlie a 'close epistemology' (Kelly, 2008) that neglects systemic effects, structural inequalities, meso- and macro-level contexts. By ignoring context-dependence, their results often lead to small and immediate policy changes, leaving out of sight large-scale and long-term socioeconomic factors. Without acquiring sufficient prior knowledge of these, RCTs might not be able to answer the question of 'why things work' (Deaton & Cartwright, 2018); ultimately harming cumulative scientific progress. At best, their estimates will only apply to the sample selected for the trial (Rothwell, 2005, 2006; Cartwright, 2007; Kennedy-Martin et al., 2015; Peters et al., 2018); arising the need to carefully specify the conditions of the intervention in order to avoid overgeneralisation (Jiménez-Buedo & Russo, 2021).

[13] For these studies, Abhijit Banerjee, Esther Duflo, and Michael Kremer were awarded the 2019 Nobel Memorial Prize in Economic Sciences.

[14] EBM fosters the use of empirical evidence in support of organisational decisions; with the aim to rely on effective and robust decision-making, and get a demonstrable link to key performance indicators (for critical accounts see Lincoln & Cannella, 2004; Learmonth & Harding, 2006; Learmonth, 2008; for applications in marketing see Sharp, 2017).

Although experimental evidence is acquiring increasing attention among economists, RCTs and their practices were distorted from the original experimentalist research programs as born in the natural sciences (Jiménez-Buedo & Russo, 2021). That is, social sciences' experimentation practices overestimate the experiments' power of providing objective results, and thus neglect the background assumptions of their key principles (Angner, 2013; Alexandrova & Haybron, 2016; see also Nagatsu & Favereau, 2020; Jiménez-Buedo & Russo, 2021; Diener et al., 2022; Esterling et al., 2023). This became a common problem of applied economic work, being part of a broader set of issues featuring modern economics; some of which will be outlined in the next section.

1.2. The main issues of modern economics

In the previous sections, a history of mathematical, statistical, and empirical economics was outlined; highlighting their developments until the present times. Here, the status quo of modern economics is addressed; with a focus on its most problematic aspects and pending issues (see Table 1).

Table 1 – Issues of modern economics

Area	**Economic theory**	**Economic method**	**Economic philosophy**	**Economic policy**
Issue	Theoretical dogmatism	Methodological monism	Scientific objectivity	Technocracy
Feature	Narrow theoretical framework	Methodological individualism	Decontextualisation and atemporality	Overspecialisation and sophistication
	Broad domains of application	Methodological reductionism	Value neutrality	Reputation and legitimacy

Source: author's elaboration.

The 2008 global financial crisis let these issues emerge more prominently, undermining economics under several dimensions: theoretical, methodological, ethical, and deontological (for a discussion of the state of modern economics see Lawson, 2003, pp. 3-27; Fullbrook, 2006, p. 129; see also Rochon & Rossi, 2016, 2017). Here, these will be examined in turn.

1.2.1. Theoretical dogmatism

Modern economics has been recognised as a dogmatic and monolithic field compared to other social sciences (Fischer et al., 2018). Economic teaching and research are arguably monopolised by a single school of thought, leaving no room for any other stream than neoclassical economics (NE) (Dobusch & Kapeller, 2009; Frey et al., 2010). The 'neoclassical monism'[15] reflects into education (Allgood et al., 2015; Beckenbach et al., 2016; Graupe, 2017; Decker et al., 2018), ideologies (Blyth, 2002), and policies (Whaples, 2009; Focardi, 2015). Becoming 'an unquestioned belief system' (Elliott, 2017, internet), NE has been dominating policy and public debate (see Raworth, 2017) – despite having 'no immediate reference to a whole list of real-world problems' (Meadway in Goodfellow, 2024, internet) whose knowledge remains very limited (Pühringer & Bäuerle, 2019; Tafner & Casper, 2022).

Economics graduates are, in fact, ill-equipped to deal with the most pressing problems of the current times, since:

> The world is beginning to realise the many ways in which mainstream economic thought has been failing our societies. […] The problem we face is the total dominance of a single and outdated form of economics at universities, which promotes the marketisation of society, leading to increased inequality, injustice and significant harm to the natural world (Rethinking Economics, 2024, internet).

This *orthodox* perspective 'rests on three main conceptual pillars – individualism, optimisation, and equilibrium' (Fischer et al., 2018, pp. 2-3), and:

> Treats *the individual elements within the economy (consumers, firms and workers) as rational agents with objectives that can be expressed as quantitative functions (utilities and profits) that are to be optimized, subject to certain quantitative constraints* (Wilkinson, 2005, p. 8, emphasis in original).

By equating these assumptions with the prerequisites of a true science, neoclassical economists have blindly adopted this framework as if it could explain most economic phenomena.

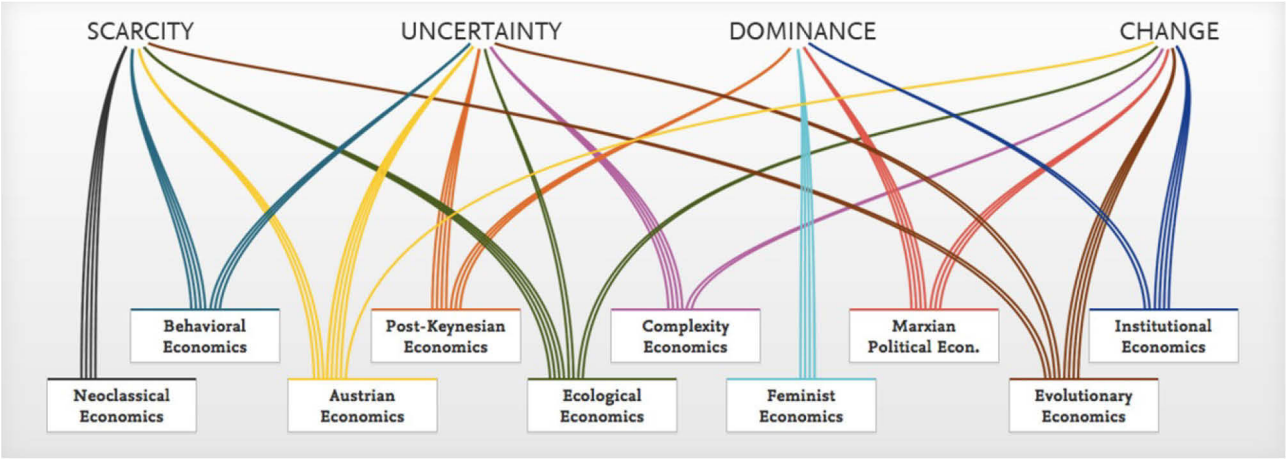
Over time, the undisputed dominance of the neoclassical doctrine prevented other approaches from affirming themselves, making them eclipse before they could provide any theoretical or policy contribution (Sylos Labini, 2016). Yet, those theoretical frameworks that were previously considered as integral part of the evolution of economic thought are now labelled as *heterodox*; including all the approaches conceptually or methodologically deviating from the established way of doing economics (Foldvary, 1996; see also Lee & Cronin, 2016). Among them, Marxist (Fine & Saad-Filho, 2012),

[15] Neoclassical monism is the doctrine of unity that sees NE as the only legitimate school of thought to study the subject matter of economics.

post-Keynesian (Stockhammer, 2018), Austrian (Méra & Hülsmann, 2018), institutional (Hodgson, 1998, 2000), ecological (Spash & Asara, 2018), feminist (Himmelweit, 2018), complexity (Kirman, 2011), and cooperative economics (Cato, 2018) were progressively neglected by tertiary education (Frey & Eichenberger, 1993; Colander, 2008) and scientific journals (Goldschmidt & Szmrecsanyi, 2007).

Each of these schools of economic thought offers a different perspective on economic matters, whose focus vary across them (see Figure 1). Besides the main issue of resource scarcity – the pillar of NE –, the principles of uncertainty, dominance, and change are as relevant factors ruling economic dynamics. However, these were considered by most economists as secondary for economic analysis, and ended up disappearing from established economic knowledge. In fact, new economic thinking and transformative ideas in economics often originate 'from every quarter but economics departments themselves' (Raworth, 2017, p. 244). This is because heterodox views can provide different lens and outlooks to the same problem, enriching the spectrum of possible explanations and policy solutions to economic issues (Keating & della Porta, 2010; for a detailed overview see de Muijnck & Tieleman, 2022, p. 308).

Figure 1 – Schools of economic thought



Source: Exploring Economics (2024).

Drawing upon this, economics students all around the world expressed their disappointment for the kind of training they received (see Elliott, 2017; Reed, 2018). They complained about (1) the narrow approach and the missing perspective of other schools of thought besides NE, (2) the formal abstraction and unjustified mathematisation of economic theories, and (3) their resulting detachment from real-world phenomena (Fischer et al., 2018; de Muijnck & Tieleman, 2022). In the aftermath of the 2008 global financial crisis, associations including the *Post-Crash Economics Society, Rethinking*

Economics, *Plurale Ökonomik*, and the *International Student Initiative for Pluralism in Economics* were born (Colander et al., 2009; Freeman, 2010; see also Sharpe, 2023, pp. 174-176) to advocate for change in economics education and tackle these issues; explained in detail below.

1.2.1.1. Narrower focus

Until the 1890s, economics was commonly referred to as 'political economy', namely the study of the economy as linked with the political and institutional life of society. It was very much the art of policy design rather than economic laws, with no distinct separation between economic, political, psychological, sociological, and philosophical matters. Although the classical economists recognised political economy as an independent science, they:

> Saw it as inextricable from the other social sciences and from ethics. [Thus] no political economist could be useful or effective who did not have a knowledge of the other social sciences (Redman, 1997, p. 355).

Since then, economics has been 'sharply delimited' from other fields, becoming 'narrower' in terms of type and origin of its fundamental insights (Sandmo, 2011, pp. 2-5). This was the result of a long process that progressively transformed *political economy* into *economics*.

This process also steered the discipline from the study of the economy to the analysis of human behaviour, leading a fundamental shift from *macro* to *micro* units of analysis. If for some economics is defined as 'the world of prices, wages, interest rates, stocks and bonds, banks and credit, taxes and expenditure' (Samuelson, 1948, pp. 6-7), for most it rather became 'the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses' (Robbins, 1932, pp. 15-16). With the latter establishing as the common view, economics progressively lost the focus over the former, namely its original subject matter, and became the science of individual choice and decision-making (Becker, 1976, pp. 3-4; Mankiw, 1997/2004, p. 4).

On the one hand, this led economics astray from its core questions as well as knowledge from adjacent disciplines. Although stemming from the increasing specialisation that characterised most social sciences during the XX century, this made economics especially impervious to them. Overall:

> Economists have started to consider topics that are more traditionally associated with sociology, political science, and psychology. […] Yet cross-disciplinary citation patterns continue to offer evidence of the field's relative insularity (Fourcade et al., 2015, p. 92).

If economics does represent an important source of knowledge for other disciplines, which all account for more intradisciplinary citations (Jacobs, 2014) than the former, 'no area of economics appears to build substantially on insights from its sister disciplines' (Pieters & Baumgartner, 2002, p. 1).

On the other hand, economics became a set of tools to tackle broader issues. Today, economics is defined altogether as 'the study of scarcity, the study of how people use resources and respond to incentives, or the study of decision-making' (American Economic Association, 2024b). Indeed:

> The economic approach is a comprehensive one that is applicable to *all* human behavior, be it behavior involving money prices or imputed shadow prices, repeated or infrequent decisions, large or minor decisions, emotional or mechanical ends, rich or poor persons, adults or children, brilliant or stupid persons, patients or therapists, businessmen or politicians, teachers or students (Becker, 1976, p. 8, emphasis added).

A *substantive* definition of the discipline, whose scope was determined by its object of analysis, was ultimately replaced by a *methodological* definition, where the 'rational choice' approach is the main method to be applied in multiple contexts; overlapping with other social sciences (Akerlof, 2020, p. 415; for a discussion see Ambrosino et al., 2022).

1.2.1.2. Broader scope

Albeit an increasingly narrower focus and less interdisciplinary insights, the shift towards the study of human behaviour allowed economics to expand its scope and tackle a broader set of phenomena outside its traditional domain (Sandmo, 2011, p. 2; see also Coyle, 2018): from gender relations and racial gaps to childhood education and the future of jobs (for a discussion see McKenzie, 1983, pp. 11-26).[16] This resulted in the emergence of hyper-specialised branches of economics, including health economics, environmental economics, gender economics, and development economics, for instance; each of them having a different scope of application and tackling a specific social aspect through the lens of economic analysis (Sandmo, 2011, pp. 440-443; Akerlof, 2020, p. 409).

Apparently enlarging the spectrum of perspectives adopted by economists, the emergence of these sub-branches actually reflects an identity crisis that economics is facing since the end of the XX century. In fact, the rationale of these applied disciplines is the mere application of standard economic principles and methods to their specific focus; whether this is related to health, environment, gender, or development issues. These are *de facto* tackled by the same, narrow conceptual and methodological framework of NE (Basole & Ramnarain, 2016, p. 138). The key notions of utility, scarcity, trade-off, opportunity cost, equilibrium, optimisation, and comparative advantage, among others, determine all these applications (for a review of the main economics concepts see Sexton, 2020; Angner, 2023).

This way, economic thinking colonises other disciplines by imposing its concepts, principles, tools, and methods (see for instance Levitt & Dubner, 2009). Named 'economic imperialism' (Lazear,

[16] This trend was not shared by all branches of economics. For instance, the field of *industrial organisation* experienced the opposite pattern: namely, a decreasing topic variety over time (Schmal, 2023).

2000), this phenomenon sees economists invading disciplinary areas that were previously territory of other social sciences (see Swedberg, 1990, pp. 325-327).[17] If through this process the 'periphery' of economics is enlarging, since disciplinary boundaries are less defined internally, its 'core' is shrinking (Cedrini & Dagnes, 2022). That is the reason why the extension of economics into other domains did actually increase the resistance towards interdisciplinary work (Colander et al., 2004; Scott, 2018, p. 534).

Triggered by the compatibility of methods and characterised by the domestication of external disciplines, this tendency resulted in the so-called 'mainstream pluralism' (Cedrini & Fontana, 2018). However, this form of pluralism shall not be misunderstood with 'true pluralism':

> Pluralism means embracing a broad tapestry of economic ideas. […] A pluralist education gives students the tools to think critically about contrasting arguments and encourages them to ask new and important questions about the economy and their place within it (Fischer et al., 2018, pp. 2-4).

Whereas 'mainstream pluralism' is merely a form of economic imperialism where a single framework is applied to multiple topics, 'true pluralism' is the application of different lens to each topic of interest (Dobusch & Kapeller, 2012; for an account of different styles of pluralism see Rommel & Kasperan, 2022), and allows for a plurality of perspectives (that is, schools of thought) over economics' objects of analysis (for a discussion see Conte, 2019).

Since each approach might be more valuable in certain cases than others, the strength of true pluralism has much in common with 'theoretical pluralism' (Keating & della Porta, 2010); that is:

> Assumed to be an essential feature of all knowledge that claims to be objective. […] Such a plurality allows for a much sharper criticism of accepted ideas than does the comparison with a domain of 'facts' which are supposed to sit there independently of theoretical considerations (Feyerabend & Baumrin, 1999, p. 80).

If for Feyerabend (1978) pluralism was a political value to which free societies should comply, other philosophers stressed that 'theoretical pluralism is better than theoretical monism' also in scientific terms (Lakatos, 1978, p. 155). In fact:

> Pluralism means good science. It allows space for competition between theories. But more importantly, pluralism creates the room for complementary explanations, which are context dependent. […] Pluralism refers to the conviction that a plurality of theoretical and methodological viewpoints is valuable and contributes to the advancement of science (van Staveren, 2015, pp. 7-14).

[17] A similar phenomenon is now happening in BE, which is expanding into areas that have traditionally belonged to other fields, such as marketing (for an account of the 'BE imperialism' see Conte & Pellandini-Simányi, 2023).

In many social sciences, it is well established that key insights derive from 'different thinkers [who] have different approaches to different problems and that these are not necessarily mutually exclusive' (Pilkington, 2016, p. 9).

1.2.2. Methodological individualism and reductionism

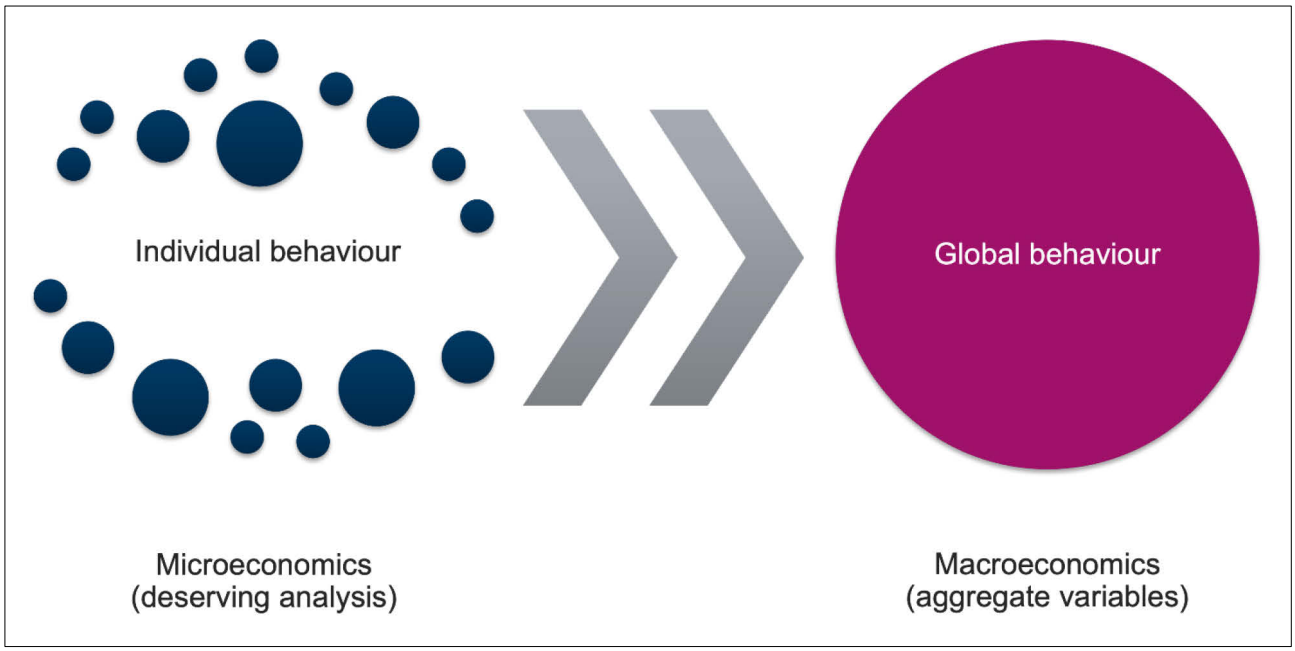
The combination between an increasingly narrower focus and a seemingly broader scope ultimately made economics more limited, both at the theoretical and methodological levels; leading economists towards approaching any phenomenon through the same, individual, behavioural lens. In this sense:

> The actions on the micro-level of all the individuals involved in social processes must be taken into account in order to describe and explain these processes on the macro-level. […] The theory is, in essence, based on a specific model which aims to predict individual's behavior (Lenger, 2019, pp. 957-958).

This approach is called 'methodological individualism' and characterises economics more than any other social science (Udehn, 2001, 2002; Hodgson, 2007).

Besides reinforcing economics' theoretical dogmatism (The Economist, 2018), this human-centred 'atomism' had the consequence of leaving out the meso- and macro-levels of analysis. That is, methodological individualism and the derived 'micro-foundations' underlying the discipline made it difficult, if not impossible for economics to build 'macroscopic' laws (Cencini, 2005; Pilkington, 2016, pp. 103-108). Arguably, this is the result of a misplaced heritage of physics, and particularly a fundamental misunderstanding of the XIX century's thermodynamics. While physicists could explain the *global* behaviour of gases and liquids without exactly knowing the position and velocity of their *individual* atoms (Maris, 2005), modelling economic agents' behaviour became essential for building macroeconomic theories (see Figure 2).

Figure 2 – Micro-foundations of economics



Source: author's elaboration.

As a result, only a minority of economists today study 'macro' topics such as growth, inflation, and interest rates (Coyle, 2018). Since macroeconomic systems are derived from the mere aggregation of individual actions, microeconomics is recognised as the sole branch deserving scholarly attention (Sylos Labini, 2016, p. 130). However:

> The behaviour of systems often cannot be deduced from the behaviour of their components. The possibility of a hurricane cannot be discovered by studying the properties of a water molecule. Neither can the workings of a democracy be known by studying the actions of an individual person. The system itself has to be studied, to understand how it works. […] Treating the economy as if it were exactly the sum of its individual parts has forced us to assume it is like a machine. This has prevented us from understanding all the dynamic phenomena, such as innovation, structural change, and technology transitions, that only occur at the level of the system – and that are critical to our interests (Sharpe, 2023, p. 296).

In economic policy, this limited approach translates into economists' inability of looking at systemic issues such as democratic elections, technological innovation, and climate change.

By reducing these complex systems into smaller units of analysis (Zamagni, 1994, pp. 6-7), methodological individualism:

> Adds to the poverty of analytical ability by denying the existence of society as something more than a bunch of individuals and as something epistemologically reducible to the individual (Spash & Asara, 2018, p. 126).

Far from adopting a 'reductionist' approach (for a discussion see Sharpe, 2023, pp. 295-297), other schools of thought maintained a more macroscopic account of economic phenomena (see for instance Georgescu-Roegen, 1971; Meadows et al., 1972; Benería et al., 2016; Himmelweit, 2018; Spash & Asara, 2018); or at least assumed they are 'problems of organized complexity' (Weaver, 1948) to be treated with agent-based, yet systemic methods (Focardi, 2015, pp. 11-12; see also Raworth, 2017, pp. 118-122; Sharpe, 2023, pp. 83-183).[18]

Besides the methodological limits of the micro-units of analysis, 'reductionism' (Quine, 1951) translated into the instrumental application of the *homo economicus*. Considered as the building block of neoclassical economic analysis, and industrial capitalism (Polanyi, 1977), it represents the standard 'rational' individual who has 'self-interested agency obsessed by the calculation – optimization of his or her own interest' (Callon, 2007, p. 346). Exceptionally skilled in computing his choices' benefits and costs, he can correctly rank them and maximise his utility based on the information at his disposal (Mäki, 2021). Although economic sociologists and social scientists in general have long stressed its fictional characteristics and essentially unrealistic features (see for instance Slater & Tonkiss, 2001), the *homo economicus* is still the methodological ground of much economic reasoning.

The advent of BE debunked many of the assumptions behind the *homo economicus* (for more details see Chapter 2), yet it did not overcome economists' strong dependence upon methodological individualism. If psychological insights initially seemed like a key source of fundamental change for economics, behavioural economists' work ended up merely adjusting the standard economic models' representative agent rather than shifting its conceptual framework towards higher levels of analysis (to wit, social classes, institutions) (Gigerenzer, 2015a). As a result, economics is still much focused on the lens of human behaviour – its traditional subject matter since the beginning of the XIX century –, and BE just reflects the partial application (often the erroneous translation) of disciplinary expertise that is already well established in other applied sciences (Conte & Pellandini-Simányi, 2023).

Quite paradoxically, behavioural insights are thus reinforcing the 'old' neoclassical approach by providing higher credibility and increased policy influence to economists (Gigerenzer, 2015a). By embedding cognitive psychology – similarly focused on the individual level – into economic analysis, behavioural economists' contributions did not widen the economics discipline but simply overlapped with its methodological framework. In fact, the well-known 'prospect theory' (Kahneman & Tversky, 1979) draws from standard utility theory, and 'behavioural game theory' builds upon traditional game theory. Although these theories would probably not have entered economics without the technically intimidating and formalised vest (Pilkington, 2016, pp. 8-9) which is required by the profession, the

[18] Leveraging upon the availability of advanced computational techniques, the field of *complexity economics* merges big data and computer science tools to produce insights on complex and dynamic economic processes (Kirman, 1997; Arthur et al., 2015).

rigid, static, and self-referential (Maris, 2005, p. 73) dress code of neoclassical economists' models brutally hid and compromised their most novel aspects.

1.2.3. Scientific objectivity

Albeit considered as an 'aprioristic intellectual construct' (Schmitt, 1986, p. 120), classical economics was seen as an historical and political discipline that could not reach the same level of exactness and objectivity of other sciences. Marginal economists, however, pretended to study economic systems as if they were laboratory environments by:

> Breaking up a complex question, studying one bit at a time, and at last combining his partial solutions into a more or less complete solution of the whole riddle. […] The existence of other tendencies is not denied, but their disturbing effect is neglected for a time. The more the issue is thus narrowed, the more exactly can it be handled: but also the less closely does it correspond to real life (Marshall, 1890/2009, p. 366).

Building upon this attitude, since the XX century economists started developing techniques to isolate the relationships between variables from the effect of possibly disturbing factors. By 'controlling' for them and assuming 'everything else being equal', or *ceteris paribus*, it became possible to temporarily ignore the influence of external perturbing causes and focus exclusively on the relevant dynamics at play (Parisi & Alacevich, 2009, p. 153).

This way of proceeding became the governing logic of modern econometrics, when dynamic economic models started to rise (Sandmo, 2011, pp. 374-376), emphasising:

> The "neutral" character of pure economics, which was supposed to deal with the allocative mechanism independently of the institutional and social context (Parisi & Alacevich, 2009, p. 184, author's translation).

Despite its methodological benefits, reasoning 'as if' and isolating the phenomenon under study from any other variable influencing it is an extreme working hypothesis that might endanger theory quality (Maris, 2005, p. 135) and 'decontextualise' objects in order to make them comparable (Araujo, 2007). Besides *context*, this approach made economists exclude *time* and *value* from economic analysis. All three aspects will be outlined and explained separately in the following sub-sections.

1.2.3.1. Decontextualisation

One aspect of economics' scientific objectivity is the detachment from the historical, cultural, social, and political context of economic phenomena. This made the discipline:

> Emptying itself of substantive content, becoming a set of idealized ahistorical universals, reductively applicable everywhere but genuinely relevant nowhere (Morgan, 2016, p. 28).

Economic theory being inevitably bounded by contextual features, it is technically impossible to draw 'unbiased' conclusions (Keating, 2008). In fact:

> Human life is messy, never to be grasped in its full complexity or shaped according to plan: people act in unanticipated ways; politics makes its own demands; cultures (which economists do not understand well) resist (Fourcade et al., 2015, p. 111).

Due to human factors, power relations, political dynamics, and cultural aspects, economic facts can never be fully decontextualised. Instead, these are embedded in a 'whole ecological and social fabric' (Capra, 1983, pp. 194-195) and are facilitated, or constrained by 'structures of social relations and structures of such structures' (Morgan, 2016, p. 28).

This decontextualisation entails three different levels. First, there is a neglect of the historical dimension; that is reflected into a lack of 'social self-understanding' (McCloskey, 1982/1998, p. xxi) in theorising economic events, facts, and phenomena. Notably:

> If a scientific theory is good, it is good now, and it would have been good a thousand years ago, if it had been available; but the aspects of economic life which we need to select in order to make useful theories can be different at different times. [...] Economics is in time, and therefore in history, in a way that science is not (Hicks, 1986, p. 100).

Therefore, economists are historians more than scientists (Hicks, 1986), and economic knowledge is necessarily *situated*: 'heavily dependent on the political and institutional setting of the time' (Sandmo, 2011, p. 10). Illustrative examples in this sense include:

> The influence of Keynes's philosophical studies on his theory of probability and on his economic theory; of logical positivism on the development of Samuelson's theory of revealed preferences; not to mention the enormous and undeniable link between the scientific theories of many economists and their ideas of political and social philosophy (Guala, 2006, pp. 205-206, author's translation).

These cases do testify the inevitable and reciprocal influence, never to be underestimated, standing between economists' ideas and their historical context.

Second, there is a misleading approach towards both the past and the future. In economics, the practice of predicting the probability of future events draws upon the application of econometric techniques on past data. Although this might lead to consider the discipline as 'backward oriented'

(Frey, 2021), the so-called 'time series analysis' operationally assumes a constant time dependence of the probability distribution (Sylos Labini, 2016, p. 81; for a discussion of probability in economics see Pilkington, 2016, pp. 281-321). That is, it aims at isolating *time* from the picture (for the limits of time series see Cecconi et al., 2012), considering it as a given variable with no effect on past economic activities (for a discussion see Pilkington, 2016, pp. 71-93). Other social scientists, instead, look at present events 'as the outcome of a set of past processes' (Fourcade et al., 2015, p. 109), taking into account their 'path dependence'[19] (Durlauf, 1991; David, 1994, 2007; see also Goldschmidt et al., 2016).

Third, there is an undervalued role of change dynamics. Despite economic actors and systems (that is, institutions, organisations) constantly mutate and evolve:

> The economics that dominates public debate and policymaking is founded on an assumption that the world is fixed and unchanging. The more we want to change things, the more unhelpful this kind of economics turns out to be (Sharpe, 2023, p. 3).

This arguably derives from the neoclassical economists' overreliance on the concept of 'equilibrium', and particularly their appeal to 'a ghostly self-equilibrating market that only exists in an imagination that has been made sick by learning nonsense' (Pilkington, 2016, p. 339). In fact:

> Much orthodox economics relies heavily upon static equilibrium analysis. In this world of political, social and economic upheaval, such analyses too easily become sterile exercises in avoiding consideration of such vital factors (Pheby, 1988, p. 128).

In the hypothetical equilibrium state, all socio-historical characteristics determining economic agents' behaviour thus become analytically irrelevant.

Although the concept of equilibrium such as derived from classical mechanics assumed totally reversible phenomena (Maris, 2005), later theories of thermodynamics considered physical systems as naturally evolving towards uniformity; through the concept of 'entropy' (Boltzmann, 1872/2003). Nevertheless, stability conditions in economics only exist theoretically, due to the notion of 'natural tendency' (Georgescu-Roegen, 1971), and reversibility remains the principle underlying equilibrium analysis (for an exception see Sylos Labini, 2016, p. 80).[20] Differently explained:

[19] Path-dependent processes are not self-correcting but rather solidify and amplify initial conditions until the final outcome unveils. A typical example is the latest climate policy discussions, where the requests addressed to Global South countries for complying to the Global North's sustainability demands neglect the *path* of Western nations' highly polluting centuries of industrial revolutions.

[20] For some, this is why assumptions like the 'invisible hand' are relegated to the category of unrealistic concepts justifying the status quo of the capitalist system (Schmitt, 1986).

> The entropy accounting of the second law of thermodynamics implies that any local increase of order is not without a cost: it requires energy and, in the case of the modern economies, produces waste and pollution. […] If economics is to become a scientific endeavor, it must consider the entropy accounting of production. While now much discussed, themes such as energy sources, sustainability, and pollution are still absent from the considerations of mainstream economics (Focardi, 2015, pp. 10-11).

This 'bifurcation between the concrete economic system and economic theories' (Weintraub in Parisi & Alacevich, 2009, p. 295, author's translation) is absent in other social sciences, whose evolution laws do not confer universal and immutable character to their systems (Sylos Labini, 2016, p. 19).

1.2.3.2. Value neutrality

Another aspect of economics' scientific objectivity is reflected by its value neutral approach, that was the result of its latest evolutions. Since Aristotle, and until the XIX century, economics was a sub-discipline of practical philosophy, next to ethics and politics (Zamagni, 1994, p. 4). From Smith's *Theory of Moral Sentiments* (1759/2011) to Marshall's *Principles of Economics* (1890/2009), economic theory has been profoundly intertwined with value judgements[21] (for an account of value judgements in economics see Beckerman, 2011), and:

> A number of the models developed by economists were explicitly 'normative', spelling out ideal economies that would yield beneficent social results if some perversion in the policy realm were removed. These ideal systems were proposed as natural (Herman, 1982, p. 277).

For most economists, political economy – as the discipline of economics was originally named – was 'for all its worldly and debauched appearance, a truly moral science, the most moral science of all' (Marx, 1833-1834/2005, p. 361).

After Marshall, however, economics was increasingly conceived as an independent subject of study and separate from moral philosophy (Redman, 1997, pp. 102-103).[22] Similarly, Walras, Pareto, von Mises, Robbins, and other economists of the XX century agreed about the separation between 'means' and 'ends' (von Mises, 1949/1998, p. 880); with the former supposed to be the subject matter of economics, and the latter to be left to ethics and philosophy. Since then, the discipline progressively lost both its political nature and ethical content (Atkinson, 2009; Sandel, 2013; Randazzo & Haidt, 2015). According to economic journalist Bernard Maris, the willingness to build a 'pure economics' was 'a devious attempt to disguise the relationship between economics and politics' (Maris, 2005, p.

[21] Value judgments are 'conscious and piecemeal objective norms or subjective (moral) predilections' (Katouzian, 1980, p. 135).
[22] In contrast, some consider marginalist theories to have more normative grounds than classical economics (Mirante & Baranzini, 2013, pp. 22-23).

49, author's translation); with economists' misguiding belief that 'such a distance […] is a condition of their professed objectivity' (Fourcade, 2018, p. 5).

Building upon this view, post-war scholars advocated for a 'positive' economics (Friedman, 1953) distinguishing between *facts* and *values* (Katouzian, 1980, p. 45). Most economists wanted to describe economic reality, its features, forces, and variables, without entering the domain of ethical and political considerations (see Beckerman, 2011, pp. 16-17). In Friedman's (1953) words, the scope of a positive science, in fact, 'is the development of a "theory" or "hypothesis" that yields valid and meaningful (that is, not truistic) predictions about phenomena' (p. 7). This approach, influenced by the natural sciences' neutral character, made economics seemingly detached from the ideological and 'normative' dimensions (for a discussion of normative economic analysis see Coleman, 1982; Jacobs, 1995; see also Ferber & Nelson, 2003; Hausman & McPherson, 2008; Pilkington, 2016, pp. 15-70; Małecka, 2022).

Underlying the issue of value neutrality in economics, the positive-normative debate is still ongoing today. Some scholars contested positive approaches to economics (see for instance Caldwell, 1982/1994, pp. 179-184), arguing that normative aspects are intrinsic to economic analysis (Zamagni, 1994, p. 20; for a discussion see Brochier, 1997) and that economic theories, far from being 'neutral and disinterested', are closely linked to the historical, political, and sociocultural context where they are conceived, the problems they seek to answer, and the way how they are set up (Parisi & Alacevich, 2009, pp. 9, 170-171). In fact, economics: (1) 'incessantly proclaims what it must be, rather than what it is' (Maris, 2005, p. 50, author's translation); (2) informs policies about wealth distribution, market competition, access to services, and other inherently *ethical* issues (see for instance Boulding, 1969; McKenzie, 1983, pp. 57-71; Sandmo, 2011, pp. 424-432);[23] (3) 'performs' and prescriptively shapes human behaviour (Conte & Pellandini-Simányi, 2024) and existent statuses (Zamagni, 1994, p. 3); and (4) went through a proper 'normative turn' (Roth, 2002; Davis, 2018).

Others consider economics' normative side as more nuanced, and hidden in different aspects (Fourcade & Healy, 2007; Fourcade, 2018; Badiei, 2022). These include: (1) the neoliberal spirit embedded in the principles of freedom of choice, actors' autonomy, and market competition (Valdés, 1995; Sassatelli, 2001; Fridman, 2010; Quaglia, 2012);[24] (2) the main economic concepts being both descriptive and evaluative (Djordjevic & Herfeld, 2021), given epistemic claims' dependence on non-epistemic values (Nelson, 1996; see also Cohen, 2019); (3) the 'individualistic, anti-social ethos' (Reed, 2018, internet) as well as the philosophy underpinning rationality theory, which underlies NE

[23] For instance, theories of consumption that are ethically neutral, and without value judgements or social critique, do not exist (Douglas & Isherwood, 1979/1996).
[24] In fact, most economists in public debate are justifying and rationalising financial markets' neoliberal logics (Askenazy et al., 2010).

(Zamagni, 1994, pp. 22-24);[25] and (4) the normative dignity acquired by econometric forecasting (Maris, 2005, p. 37; Parisi & Alacevich, 2009, p. 169).

More radical criticisms consider economics as 'a normative policy science adorning itself with the fig leaf of hard-headed positivism' (Blaug, 1980/1992, p. 238 citing Ward, 1972). Reinforced by their rhetorical power, NE' philosophical orientations – scientism, behaviourism, and operationalism – made the discipline 'explicitly positive and implicitly modernist' through separating value and form from the scientific aims of predictability, observability, objectivity, reproducibility, and falsifiability (McCloskey, 1982/1998, pp. 143-144). Relying on 'scientific asceticism' (Jonas, 1958), supposedly 'pure' economic models are impersonalised,[26] scopes and values emptied, and normative aspects – including 'moral norms, work ethics, and civic ideals' – crowded out (Fourcade, 2018, pp. 2-5). As a result, modern economists counterpose value judgements and ideology – associated with ignorance and non-scientific insights – with 'good' economics (Banerjee & Duflo, 2019, pp. 333-336).[27]

An unfortunate consequence (and cause) of the triumph of positive economics is the crisis of the theories of value. Representing a key area of theoretical debate until the classical economists, they progressively disappeared from economic research – yet not entirely from the social sciences (see for instance Graeber, 2001). In economics, these discussions were interrupted by the formal equivalence – as established by marginalist economists – between *value* and *price*. That is:

> Because every last price could be explained by the interaction of supply and demand, those interminable classical arguments about what things were worth dissolved: value was simply defined by the market (Reed, 2018, internet).

The shift from value determining price to price determining value was the biggest achievement, and at the same time the major disaster, of modern economic thought (for a discussion see Mazzucato, 2018, pp. 6-8). It not only led economics astray from conceptual and ontological reasonings on money and its derivatives (Cencini, 2015), but also had terrible and tangible consequences on global climate policy (Buller, 2022).

[25] In particular, neoclassical economic theory spreads the economic beliefs and dominant ideology reflecting the interests of the capitalist class (Gautier Morin, 2022).
[26] Due to the difficulties of isolating 'pure logics' from 'pure experience', this approach has been progressively discarded by natural scientists too (Agazzi, 1992; Bell, 1993).
[27] However, innovative projects try renewing economic research by re-inserting ethics back at its centre (see for instance Integral Economics, 2024).

1.2.4. Technocracy

Referred to as 'the oldest of the arts, the newest of the sciences—indeed the queen of the social sciences' (Samuelson, 1948, p. 8), economics soon became highly regarded, if compared to other social sciences. According to some critics, however:

> To evoke economics independently of sociology, psychology, anthropology is a deception to make people believe that economics is the matrix, the superior science, the explanatory crucible in which the complexity of the social must dissolve (Maris, 2005, p. 13, author's translation).

This led the discipline to acquire a special role across sectors: in academia, public discourse, and the business domain. The seemingly superior standing of economics can be unpacked into three factors characterising the status quo of the discipline, which will be outlined in the following sub-sections.

1.2.4.1. Overspecialisation and sophistication

The establishment of university chairs in Oxford, Cambridge, Dublin, and Edinburgh, as well as the proliferation of journals like the *Edinburgh Review*, *Quarterly Review*, and *Westminster Review*, and the rise of formal education in economics contributed to the initial institutionalisation of the discipline (Redman, 1997, pp. 135-142). Since then, it gradually professionalised (Mitchell, 2005, 2008; see also Sandmo, 2011, pp. 452-458) and further internationalised (Rossier & Bühlmann, 2018; see also Rossier & Benz, 2022). This, in turn:

> Created a structural pressure for increased specialization simply because scholars were in search of niches that could define their originality or at least their social utility (Wallerstein, 1996, p. 34).

Throughout the XX century, the specialising trend has been reinforced, resulting into a fragmentation that progressively isolated economics from other social sciences (Fourcade et al., 2015, pp. 92-95) and led to its 'overspecialization' (Akerlof, 2020).[28]

This overspecialisation emphasises 'quantitative' knowledge and technical sophistication in place of theoretical speculation and conceptual depth, impoverishing economists' thinking and their ideas' novelty (Akerlof, 2020). In fact, Hicks had already warned against the risk of overspecialisation in economics by highlighting that:

[28] This process has its origins in the separation – occurred during the XX century – between natural and human inquiry, which led to the hyper-specialisation of the humanities and 'turned the ideological reasons for that split into an intellectual justification for the specialities themselves' (Wolf, 1982, p. 7).

> Modern economic science is subject to a real risk of Machiavellianism: the treatment of social problems as mere technical issues and not as an aspect of the general pursuit of the Good Life. […] But this inability to conceive how complex reality is at the root of great tragedies: ideas degenerating into idealism, theories into dogmatism and reason into rationalisation (Hicks, 1941, p. 6).

As a result, 'the great sophistication of mathematical models is matched by a staggering conceptual poverty': that is, 'the purely economic statements are banal, but we are impressed by the mathematical technique that surrounds them' (Cencini, 2015, p. 1, author's translation).

The greater emphasis on technical progress risks undermining the scientific contribution of modern economists and impoverishing their training. Indeed:

> There is every chance that the backward-looking eye of posterity will see much of what today's economic departments produce in the same way as we now see phenology: a highly technical, but ultimately ridiculous pseudoscience constructed rather unconsciously to serve the political needs of the era (Pilkington, 2016, p. 1).

> Getting students to gobble up the technical meatballs of economic-mathematical models is easy, even elementary. […] Teaching a discursive course is a far more delicate task. […] Reading Marx stimulates, provokes, pushes one to revolt; reading Friedman extinguishes; reading the first Hicks asphyxiates. Reading Hayek amazes and reading Keynes enchants. Reading nowadays' economic journals gives one the impression of chewing sawdust (Maris, 2005, p. 33, author's translation).

The gap between technical sophistication – that is not always guaranteed[29] – and conceptual banality makes the prestige of the profession even more puzzling (Stiglitz, 2002; Maris, 2005).

In the name of instrumentalist 'functional progress' (Boumans & Herfeld, 2022), conceptual advancements in economics stagnated for two reasons:[30]

> Because [economists] couldn't handle all these powerful ideas – from Freud to Durkheim – that appeared toward the end of the nineteenth century (Hirschman in Swedberg, 1990, p. 163);

> Because the concepts, the analytical tools, and the investigative tools employed by economists have been and are basically incompatible with the subject matter that economists study (Schoeffler, 1955, p. 17).

[29] For instance, economists misunderstand identities and causal arguments; accounting 'for a lot of confusion in economics debates' (Pilkington, 2016, p. 8).
[30] This argument was already supported by Friedman, who noted that economists have made no real scientific discoveries since the time of Adam Smith (Friedman, 1953).

The demand for technical precision *de facto* disincentivised the development of complex conceptual frameworks as well as the formulation of new paradigms, which, in order to be considered 'rigorous' enough, have to speak the same language of the old ones (see Gioia et al., 2013).[31]

This, in turn, affects economics training, where strictly technical skills and 'the use of refined analytical tools' are conceived 'as proof of professional maturity and competence or, worse still, as a sign of recognition of the modern political economics scholars' (Becattini et al., 1988, p. 10, author's translation). Since doctoral programs in economics 'train students to become productive researchers' rather than 'teach them about the economy' (Craighead, 2007, internet), economists' ability to master sophisticated techniques becomes more important than their expertise in understanding the economy and their knowledge of the economics literature (Colander & Klamer, 1987). Unwittingly accepting unrealistic theoretical assumptions with no critical attitude (May et al., 2014, pp. 14-15; van Staveren, 2015), young economists end up conforming to the self-referential goal of 'the technical refinement of analysis' (Associazione Paolo Sylos Labini, 2010, internet, author's translation).

Generation after generation, these dynamics are naturally transferred into the research domain (Aistleitner et al., 2018), where the publishing market is more 'concentrated' than in other sciences (Fourcade et al., 2015, pp. 98-100; see also Maesse, 2017; Schulze-Cleven et al., 2017). Five journals – the *Quarterly Journal of Economics*, *Journal of Political Economy*, *American Economic Review*, *Econometrica*, and *Review of Economic Studies* – dominate the intellectual panorama, governing the institutional dynamics and career paths of the entire economics profession (Rossier & Bühlmann, 2018; Heckman & Moktan, 2020; Korom, 2022; Rossier & Benz, 2022). The so-called 'curse of the top five' (Akerlof, 2020, p. 409), however, does not necessarily stand from the quality of the works produced, but rather depends on arbitrary indicators (Bellas & Kosnik, 2019; Heckman & Moktan, 2020) and self-referential mechanisms like the 'citation cartels' (Önder & Terviö, 2015; Anauati et al., 2018).

1.2.4.2. Reputation and legitimacy

The 'tyranny of the top five' (Heckman & Moktan, 2020) led to the centralisation of resources in few élite economics departments (Fourcade, 2006). Instead of diversifying the allocation of public funds (Fortin & Currie, 2013), their concentration – especially encouraged since the post-war period – in a small set of academic institutions prevented innovation, making economic research conformist and conservative (Glötzl & Aigner, 2019), and nurturing a toxic self-fulfilling cycle where:

[31] However, conceptual work is necessary regardless of the limits of quantitative methods (Alexandrova & Singh, 2022; for a discussion of the divide between economics and the humanities see Mehta & Newfield, 2022).

> Universities tend to attract funding in proportion to their perceived success. Success is judged mainly by the number of academic papers published in prestigious peer-reviewed journals. Publication depends on the approval of editors, and the editors of prestigious economic journals all tend to be adherents to the equilibrium school of thought (Sharpe, 2023, p. 172).

Fostered by the neoliberal ideology (Blyth, 2002) and mediatic amplification (Sylos Labini, 2016, p. 184), 'the league-topping universities set a norm that others follow' (Yang in Raworth, 2017, p. 246) and is regulated by reputational dynamics.

One proxy of these dynamics is the role of university rankings, which is pivot in economics. Besides their methodological issues (Baccini et al., 2015; Baccini & De Nicolao, 2016; Baccini et al., 2019) and universities' non-meritocratic systems (Karabel, 2005), rankings are massively adopted by prospect students and the overall civil society as a reference of the discipline's academic standing.[32] This is reflected, for instance, by the 'Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel' (Nobel Memorial Prize in Economic Sciences), whose controversies partly stood from:

> The doubt that a social science such as economics could be sufficiently scientific in nature to justify such a prize alongside natural sciences such as physics and chemistry (Lindbeck, 1985, p. 38).

Despite family descendent Peter Nobel's scepticism on the meritocracy and transparency of the Prize itself (Fourcade & Khurana, 2013; Fourcade et al., 2015, p. 105; for a discussion see Korom, 2020, 2022), its geographical distribution interestingly reflects a cultural bias that is unique to economics; with Anglo-American economists dominating the scene.

Right before the 2008 global financial crisis, economics was at the highest of its reputation and academic standing both in the United Kingdom and the United States, 'despite the fact that they know almost nothing about anything' (Piketty, 2014, p. 41). Nonetheless, the crisis:

> Simply did not conform to the continuum of representation that economists and those that listened to them had built for themselves. They had based their representations on the idea that the economy tended towards a long-run market equilibrium position and that any external shocks – any monsters – that arose would quickly disappear as the economy marched on towards its inevitable teleological end point (Pilkington, 2016, p. 337).

Together with other institutional issues (see International Monetary Fund, 2011), this represents one main reason explaining the economists' mindset vis-à-vis the 2008 global financial crisis. In response, to keep their reputation alive, economists have been publishing 'crisis books' reintegrating the shock

[32] The most known are the Quacquarelli Symonds (QS), Times Higher Education (THE), and Shanghai Ranking (ARWU).

brought by the latter in the traditional narrative: that is, the market equilibrium framework (Mirowski, 2014).

More than their validity and effectiveness, however, it is economic theories' 'legitimacy' that determines their success (Conte & Pellandini-Simányi, 2023).[33] Leveraging upon that, the presumed 'superiority of economists' allowed the discipline 'to retain its relative epistemological insularity over time and fuelling a natural inclination towards a sense of entitlement' and self-confidence (Fourcade et al., 2015, p. 91). This eventually created an 'economic monoculture' where many life areas (to wit, relationships, work) are in fact 'being shaped by economic values and assumptions' (Michaels, 2011, p. 4). More importantly, economics became the discipline of reference for domestic and international policy discourses (for an account of the discursive and symbolic power of economists see Maesse et al., 2022).

1.2.4.3. Policy advisory and consulting

Economists got increasingly influential in public discourse, international organisations, governmental agencies, and political parties (Weintraub in Lebaron, 2001; Parisi & Alacevich, 2009, p. 288; Mata & Medema, 2013b; Hirschman & Berman, 2014; Maesse, 2015). Even though 'knowledge is power' also in the natural sciences (Hossenfelder, 2018, pp. 222-236), economists are particularly perceived as the ones who can 'provide scientifically based answers to the great problems of modern society' (Sylos Labini, 2016, p. 65, author's translation). Their narratives are disrupted (Mirowski & Nik-Khah, 2013), yet their role in public policy has been disproportionally higher than that of any other social scientist (Stiglitz, 2002; for additional critiques see Krugman, 2009; Rampell, 2010) in informing technocratic élites and governmental policies all over the world (Mata & Medema, 2013a; Bühlmann et al., 2017; Rossier et al., 2017; Klüger, 2022).

There are two main reasons for that. First, the mathematical language dominating economics and economic policy. Considered as a mere figure of speech alike metaphors and analogies (Klamer, 1984; Klamer et al., 1988; Hausman, 1989, pp. 122-124; McCloskey, 1982/1998, pp. 35-51):

> Mathematics […] is a language […] that facilitates greater precision in some instances and greater obscurity in others. […] When a language is used to obscure, it is used as a weapon by those who speak it to repress the voices of those who do not (Pilkington, 2016, p. 6).

[33] Drawing upon institutional works (DiMaggio & Powell, 1983; Suddaby & Greenwood, 2005; Deephouse & Suchman, 2008), the question of why certain theories are adopted in practice was tackled by marketing and organisational scholars (Peter & Olson, 1983; Brownlie & Saren, 1995; Cornelissen & Lock, 2000, 2005; Ardley & Quinn, 2014).

> The mathematical models which I had at my disposal and the statistical evidence which was to provide the language in which I communicated my results sometimes obscured the complexity and inter-relatedness of the processes and outcomes I experienced and observed (Emami & Olson, 2002, p. 148).

Albeit allowing economists to communicate scientific insights internally within the profession:

> The high levels of formalization and mathematization in economics lead us to diagnose a lack of communicative competence—especially towards politics and the general public—resulting in an extremely limited communication of results and findings to outsiders and non-economists (Lenger, 2019, p. 957).

That is, this overly technical language delimited economic discussions to competent specialists and kept them far from the masses (Eichner, 1983, pp. 516-518).

In Pilkington's (2016) words, economists' 'technocratic language' is a 'Panglossian doctrine' that fosters 'general ignorance' and makes 'those in charge' obtaining political trust (pp. 1-2). That is:

> Mathematics became to economics what Latin was to the stagnant priest-caste that Luther and other reformers attacked during the Reformation: a means not to clarify, but to obscure through intellectual intimidation (Pilkington, 2016, pp. 3-4).

Named 'econocracy' (Earle et al., 2016), economics' technocratic regime rendered the economy an object to be understood exclusively through advanced mathematical and statistical methods, seen as 'a terrorist tool' adopted to exclude the 'little people' (Maris, 2005, p. 33, author's translation), 'keep the laymen at a distance' (Guerrien, 1997, p. 102), and avoid the broader public grasping its principles (Scott, 2018, pp. 533-534; see also Chatterjee, 2022; Newfield, 2022). As a result:

> Economists' research subjects (households, firms, traders, governments, etc.) typically have little voice in the construction of representations that affect them: rather, it is assumed a priori that advanced training in economic theory and methodology and strong command of existing scholarly literature are required to be able to contribute to economic knowledge, so that the thoughts, beliefs and insights of laypeople will usually have limited value (Starr, 2014, p. 258).

With disastrous consequences for democracy, a language spoken by few ends up impacting many (Ruccio, 2008; DeMartino, 2011; Fischer et al., 2018, p. 134).[34]

The second reason underlying economists' technocratic role is their 'fixing culture' (Mitchell, 1998). As well explained by French economic sociologist Marion Fourcade:

[34] As interestingly noted by Pilkington (2016), 'marginalist economics is above all else the discourse of identity and social order that exists in our own time *par excellence*' (p. 338).

> Economists, particularly modern economists, want to fix things, which is both a product of their theoretical confidence and of the position of their discipline within society (Fourcade et al., 2015, p. 107).

> They are all around it, calling it from within the broader field of practice to "fix" everything from climate change to child learning. The techniques for revealing truth may have evolved (from formal models to precisely administered experiments), but the logic of economists seeing themselves as truth tellers to government power—of the sort: this will or will not work—has remained deeply ingrained. […] Economics is a revolutionary force. It transforms itself by transforming the world. More than the rise of economists as persons, it is the expansion of economic technologies, skills, language and modes of calculation everywhere […] constitutes a definite feature of modern culture and the real source of economists' worldly power (Fourcade, 2018, pp. 4-7).

Besides reinforcing the rhetoric opposing the usefulness and correctness 'by default' of economists' opinions to the popular beliefs about economic matters (Banerjee & Duflo, 2019), this professional culture deems economists responsible, dangerous, and potentially deceitful (Häring & Douglas, 2012; Aldred, 2019; Berman, 2022) for both policy and business issues.[35]

[35] Unlike other social scientists, economists are employed by consultancies and eventually offer their services to private corporations (Fourcade et al., 2015, p. 90; Fourcade, 2018).

2. Qualitative social sciences: an account

After having reviewed the history of mathematical and statistical methods in economics and outlined its main issues, this chapter dives into qualitative research. By showing how adjacent disciplines and other social sciences adopt these methods to study economic objects of analysis (that is, consumption, organisations, and markets), the following sections will discuss the relevant fields' literature and bring examples that illustrate the added value of qualitative data collection (see for instance Bewley, 2002; Gillham, 2005) and analysis (see for instance Bauer, 2000; Gill, 2000). QRMs' potential contribution to economics, given by their ability to capture economic dynamics, understand economic phenomena, and analyse economic behaviour, will be especially highlighted.

2.1. The role of non-economic research

As the 2019 Nobel Memorial Prize in Economic Sciences winners Abhijit Banerjee and Esther Duflo famously argued, 'economics is too important to be left to economists' (Banerjee & Duflo, 2019, p. 336). In fact, the social sciences have been studying economic phenomena, issues, and matters way before the establishment of economics as a separate discipline (see Table 2).

Table 2 – Analysis of consumers, organisations, and markets

		Object of analysis		
		Consumers (micro-level)	**Organisations (meso-level)**	**Markets (macro-level)**
Academic discipline	Economic psychology	X		
	Behavioural economics	X		
	Economic sociology	X	X	
	Consumer culture theory	X		
	Economic anthropology	X	X	
	Organisation studies		X	
	Economic geography		X	X
	Market studies			X

Source: author's elaboration.

That is, economic psychology analyses consumer behaviour, economic sociology studies the societal aspects of consumption and organisations, economic anthropology looks at the economic aspects of human life, and economic geography inquiries into the geographical aspects of economies.

Each of these disciplines does study economics' objects of analysis through different levels, perspectives, and approaches. For instance:

> Psychologists, sociologists, anthropologists, geographers and historians also analyse the phenomena considered by economists. The assumption that it is possible to separate out economic behaviour and objectives from other forms of human behaviour and objectives is a heroic simplification and, like all such simplifications, it is fundamentally false (Wolf in Fischer et al., 2018, p. xiii).

Although heterodox economics (HE) includes a broad range of *theoretical* frameworks tackling these issues (van Staveren, 2015, pp. 64-144), those academic disciplines offer original *empirical* accounts of them. Due to their different levels of analysis and methodological approaches including qualitative research, they can indeed provide innovative answers to standard economic questions. What follows is an account of these insights, divided by disciplinary area: psychological-behavioural, sociological-cultural, and political-geographical.

2.1.1. Psychological and behavioural approaches

The first area overlapping with economics' objects of analysis is psychology; in particular, cognitive and behavioural psychology, and the fields of decision science and behavioural science. Originally, academic consumer research was influenced by these disciplines as much as by economics (Jones & Monieson, 1990; Mittelstaedt, 1990; Tadajewski, 2004; van der Merwe et al., 2007; Tadajewski, 2014; see also Wells, 2014; Wells & Martin, 2017). Until the 1970s, the psychological analysis of so-called 'buyer behaviour' was the only alternative to standard economic analysis of consumption (Baer et al., 1968; Katona, 1974; Foxall, 2001; see also Tadajewski, 2006, 2009).

Since the 1980s, psychological findings on the so-called 'bounded rationality' (Simon, 1990) started influencing microeconomic theory development. Later, this stream of studies transformed into the area of BE, and focused on the application of behavioural insights as derived from cognitive and social psychology to questions of (micro-)economic interest (DiClemente & Hantula, 2003; Foxall, 2017; see also Lewis, 2017). Due to these contributions, the founding scholars of the BE field, Daniel Kahneman and Richard Thaler, have been awarded the Nobel Memorial Prize in Economic Sciences in 2002 and 2017 respectively. In the next sub-sections, the critical aspects of BE' approach, methods, and practices will be explored.

2.1.1.1. Behavioural economics

Building upon psychological insights on human cognitive biases and decision-making heuristics, the discipline of BE developed by complementing the traditional economic models of human behaviour. Deriving from experimental findings, these 'anomalies' and 'supposedly irrelevant factors' (Thaler, 2016a, p. 1594) showed consistent and systematic deviations from the *homo economicus*' rationality (Tversky & Kahneman, 1974; Kahneman & Tversky, 1979; Tversky & Kahneman, 1981; Thaler, 2000; see also Thaler & Sunstein, 2008; Kahneman, 2011).[36] Including 'psychologically plausible' and 'more realistic psychological foundations' (Camerer et al., 2004, p. 3; Angner & Loewenstein, 2012, p. 642), these insights shifted the model of the standard economic actor from hyper-rational to 'predictably irrational' (Ariely, 2009).

Although it arguably reformed the economics' representative actor, the analytical framework of BE is not original if compared to the NE' conceptual apparatus (Gigerenzer, 2015a). First, it is still founded upon standard utility theory (see Moscati, 2019, pp. 261-280) and rationality theory.[37] Albeit 'in need of assistance' and 'psychologically flawed', the individual agent of BE:

> Furthers the psychological analysis of problems of individual rational action which have been acknowledged by orthodox economics for several decades (Langley & Leaver, 2012, pp. 478-479).

In this view, BE would merely represent a 'correction' of traditional economic assumptions providing complementary insights, yet not necessarily upbringing their epistemological character (Hargreaves Heap, 2013, pp. 989-998; see also Angner, 2019).

Second, despite offering a more realistic accounts of human behaviour, BE is centred on the *behavioural* factors determining individual choice.[38] This perspective neglects the *sociocultural* dimensions involved in decision making, which are better detected through higher levels of analysis and qualitative methodologies, for instance. As explained by Akerlof (2020):

> Our class of behavioral models is still limited and have yet to sufficiently incorporate ideas from sociology and anthropology that emphasize the importance of stories. […] A good hunting ground for sins of omission will concern the stories people tell themselves, but that are outside the range of what economists would a priori surmise underlie "utility" (Akerlof, 2020, p. 413).

[36] The fictitious figure of the *homo economicus* represents the standard economic agent: self-interested, perfectly rational, maximiser of his own utility, and disposing of full market information.
[37] In this view, behavioural interventions are directed at correcting individuals' irrationality 'to make rational decisions in the sense of economic theory', and 'bring about choices built on the basis of the automatic system of decisions made on the basis of the rational system' (Brisset, 2019, p. 199).
[38] Contrary to traditional marketing segmentation (Ave et al., 2015), behavioural economists target so-called 'behavioural types': namely, groups of individuals defined by their cognitive biases (Alnahdi et al., 2014).

Behavioural economists indeed remain 'wedded to a model of economic (ir)rationality' ignoring 'any concern for structural forms of power and privilege […] which shape and constrain the very basis of choice-making' (Gane, 2021, pp. 125-126).

2.1.1.2. Behavioural policy

Representing a great portion of the expertise adopted by so-called 'nudge units', BE is increasingly applied to a broad set of policy domains; including education, environment, gender, health, taxation, and security (Ly & Soman, 2013; Whitehead et al., 2014; Organisation for Economic Cooperation and Development, 2017; Behavioural Insights Team, 2024).[39] Similarly, the 'behaviourally informed organizations', often supported by specialised 'behavioural consulting' firms, have started adopting behavioural insights with the aim to steer both their employees' and customers' behaviour (Jackson, 2010; Singler, 2015; Soman & Yeung, 2020; Wendel, 2020).[40] These applications are found in the areas of menu design, sales, and user experience, and in the sectors of technology, financial services, retail, and consumer goods (Welch, 2010; Güntner et al., 2019; Tikotsky et al., 2020).[41]

These issues reflect and extend into the economic policies and business interventions informed by behavioural insights.[42] First, in terms of their normative orientations. Although BE' prescriptive implications are not necessarily found in its implementation (Hargreaves Heap, 2013, p. 985), they are emerging from behavioural policy trying to 'nudge' individual behaviour towards governments' desired outcomes (Reisch & Zhao, 2017; see also Conte & Pellandini-Simányi, 2024).[43] Behavioural policy, in fact, reinforces those neoliberal market principles typical of standard economic policy; where (1) individual behaviour is forged to conform to neoliberal interests (Jones et al., 2013; Berndt, 2015; McMahon, 2015; Whitehead et al., 2018),[44] (2) interventions are built on models of choice-making that best fit neoliberal political agendas (Dow Schüll & Zaloom, 2011), and (3) the market is still seen as 'a "mechanism" of supplies and demands whose price process is never clearly analysed' (Servet & Tinel, 2020, p. 296).

[39] Named 'libertarian paternalism', this approach was criticised under multiple dimensions (Veetil, 2011; Grüne-Yanoff, 2012; Rebonato, 2014; Barton & Grüne-Yanoff, 2015; Gigerenzer, 2015b).
[40] Marketing experts, however, argue that 'behavioral economics is just a fancy term for marketing' since 'marketers have known that consumers are irrational for 100 years' (Kotler in Conick, 2018, internet).
[41] When relying on neuroscience findings, these belong to the area of 'neuromarketing' (for critical accounts see Schneider & Woolgar, 2012; Schwarzkopf, 2015).
[42] As for behavioural policy, these are usually grounded on experimentation (Chataway, 2020; see also Thomke, 2020).
[43] Scholars showed an increasing tendency of 'consumer de-responsibilization' operated by governments and companies (Pellandini-Simányi & Conte, 2021).
[44] This adds to those ethical issues emerging from behavioural policy (Hausman & Welch, 2010; Frerichs, 2011; Selinger & Whyte, 2011; Smith et al., 2013; Mols et al., 2015; Kanev & Terziev, 2017; Schmidt & Engelen, 2020), and business applications (Dholakia, 2016; French, 2019; see also Conte & Pellandini-Simányi, 2022).

Second, studies highlighted the limits of behavioural policy such as its inability to transform single behaviour changes into steady, long-term habits (Hodgson, 2004; Goodwin, 2012; Gravert & Olsson Collentine, 2021; van Rookhuijzen et al., 2021) and to take into account contextual elements (Hummel & Maedche, 2019; for a discussion see Conte, 2023). In fact:

> Our minds and brains are not well-adapted for identifying and reacting to long-term systemic problems, however severe. […] Our emotion system is ill-adapted to responding to slowly evolving, complex, large scale social problems (Chater & Loewenstein, 2023, p. 27).

Although 'nudges' are originally designed for 'improving decisions' (Thaler & Sunstein, 2008), BE' poor understanding of the non-behavioural dimensions prevents them to be effective over time and across different contexts. Originating from the intrinsic limitations of the behavioural approach, these issues are essentially methodological. Despite overcoming deductive model building by increasingly relying on laboratory and field experiments (Hamermesh, 2013; Angrist et al., 2017; see also Lewis, 2017), BE is *de facto* bounded by the same methodologically individualistic framework of traditional economic analysis (Servet & Tinel, 2020).

Third, behavioural policy is fostered by a rhetoric of scientific rigour that does not necessarily reflect into its implementations. Albeit claimed to be exclusively based upon experimental evidence and "sold" on these premises, behavioural practice gets 'lost in translation' when applied to concrete policy or business cases. While rebranded as 'BE' and legitimised in the name of empirical evidence, it ends up adopting the same theories, methods, and tools it originally discredited (Conte & Pellandini-Simányi, 2023). These include, for instance, the standard consumer behaviour models (Schiffman & Kanuk, 1978; Malhotra, 1993), QRMs, and sociocultural approaches. These will be outlined in the following section.

2.1.2. Sociological and cultural approaches

In parallel with the growth of the more positivist, behavioural, and experimental branch of consumer research (Sharp, 2012, 2017), the sociological and cultural approaches to consumer behaviour started developing from the 1980s (Arnould & Thompson, 2005) and affirmed themselves until the present times (Arnould et al., 2019). Extensively spread among sociologists, anthropologists, and marketers, orthodox economists do not investigate these aspects. Here, it is argued that they should rather do so, by accounting for the sociocultural and political factors (Keating, 2008; Fourcade, 2018) underlying economic phenomena. The next sub-sections are meant to reach this aim by outlining the main social sciences that best perform in this sense.

2.1.2.1. Economic sociology

One area interestingly complementing the economists' perspective is economic sociology,[45] defined as the sociological analysis of economic objects; including market, consumption, and organisational matters (for an account of economic sociology see Swedberg, 1990; see also Fourcade, 2007). This field contributes to those efforts in three different ways. First, due to its analytical framework, which is substantially different than that of economics. That is:

> The theory of action that comes with economists' analytical style is hardly compatible with the basic premise of much of the human sciences, namely that social processes shape individual preferences (rather than the other way around) (Fourcade et al., 2015, p. 93).

Far from the notions of 'economic rationality' informed by rational choice theory, the sociological theories of action are 'rooted in a fine-grained understanding of how necessity shapes choice and how relative social position shapes taste' (Fourcade, 2018, p. 1).

Whereas the former focuses on micro-level consumer choice-making, the latter inquiries into the meso- and macro-level institutional and structural causes determining the formation of consumer tastes, preferences, and habits (Veblen, 1899; Camic, 1986; Slater, 2002; Wood et al., 2002; Hodgson & Knudsen, 2004; Keating, 2008; Gordon, 2011; see also Chater & Loewenstein, 2023; Kreps, 2023).[46] In particular:

> Neo-classical utility theory, on the one hand, reduces demand to subjective preferences within the domain of market behaviour, but constantly assumes, implicitly or explicitly, that these preferences are ultimately explicable in terms of such things as basic needs or 'cultural influences' that it is the duty of non-economic disciplines like psychology, anthropology or sociology to investigate (Slater, 2002, p. 10).

Through the aid of 'interpretive' methods, historical accounts, and comparative material (Swedberg, 1990, p. 320), the sociological analysis of economic life[47] (Slater, 2002) does capture those elements – social networks, social positions, institutionalisation processes, performative techniques (Fourcade, 2007, p. 1) – that standard economic analysis of markets does not.[48]

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[45] To illustrate the difference with economics, American economist Gary Becker pointed out: 'I began to lose interest in economics during my senior (third) year because it did not seem to deal with important social problems. I contemplated transferring to sociology, but found that subject too difficult' (Becker, 1992, internet).

[46] Behavioural and economic policy should indeed consider both (Conte, 2023; Peters & Reisch, 2023).

[47] Economic life is defined by anthropologists as 'the activities and relationships through which people produce, circulate and consume things, the ways that people and societies secure their subsistence or provision themselves' (Carrier, 2022b, p. 4).

[48] For instance, the standard economic and behavioural approach to markets prevents marketing scholars to (1) see markets as complex social systems, (2) assess macro structures as more than contextual variables, and (3) evaluate the importance of longitudinal studies and dynamics (Giesler & Fischer, 2017, pp. 3-5).

For instance, the nature of social norms is much more complex than accounted for by most behavioural economists, as they include intangible factors that are not quantitatively measurable nor experimentally evaluable – yet play a pivot role in determining economic events,[49] since:

> What people want and choose to do depends on social norms, whose formation by social processes can be analysed. […] And social norms are not preferences because people may follow social norms even if they do not really want to. […] Social norms *both* define who we are and limit what we can choose (Himmelweit, 2018, p. 67, emphasis in original).

Economists willing to deal with these factors shall thus (1) recognise that habits and norms profoundly influence individual perceptions and choices, rather than the other way around (Hodgson, 2004; 2018, pp. 51-52), (2) differentiate between consumer attitudes, identities, and forms of behaviour (Akerlof & Kranton, 2000; Szostak, 2016), and (3) assess the key role of institutions,[50] ideologies, and cultures in framing individual preferences (North, 1990; Ostrom, 1990; see also Hodgson, 1998, 2000).

Second, the economic analysis of markets is complemented by sociologists' use of narratives and stories (Callahan & Elliott, 1996; Stern et al., 1998). A narrative is defined as:

> A contagious story that has the potential to change how people make economic decisions, such as the decision to hire a worker or to wait for better times, to stick one's neck out or to be cautious in business, to launch a business venture, or to invest in a volatile speculative asset (Shiller, 2019, p. 3).

> A very real, very palpable, very important mechanism for economic change, as well as a crucial element for economic forecasting [that lets] understand changes in the economy and in economic behavior (Shiller, 2019, p. xi).

Whether emerging from the qualitative description of quantitative data (Miles et al., 2014) or the narrative description of qualitative data (Tashakkori & Teddlie, 1998), narratives can change popular understandings of 'how the economy works' by shifting the perspectives and beliefs about economic reality and market trends, thus affecting economic behaviour (Shiller, 2019).

Contrary to most social scientists, however, economists do not recognise the importance of narratives (for a discussion see Shiller, 2019, pp. 12-17).[51] That is:

[49] Since 'there is positive feedback among norms, behaviour and policy, all three are path-dependent, and history matters in explaining where we are now' (Himmelweit, 2018, p. 68).
[50] While economists see institutions (to wit, prices, organisational structures) as objective and external factors, sociologists consider them as 'socially constructed' (Granovetter, 1992).
[51] In fact, 'most contemporary economists tend to think that public narratives are "not our field"' (Shiller, 2019, p. xiii).

> Economic research has not emphasized the stories that people tell to one another and to themselves about their economic lives. [It] misses any discernible meaning that appears in the form of narratives. By missing popular narratives, it also misses possibly valid explanations of major economic changes (Shiller, 2019, p. 276).

> Standard economics omits the role of narratives. [They] play a role in understanding the environment; focusing attention; predicting events; motivating action; assigning social roles and identities; defining power relations; and establishing and conveying social norms (Akerlof & Snower, 2016, pp. 1-2).

The thoughtful adoption of narrative analysis would allow economists to (1) explain empirical results and frame economic models (Gibbard & Varian, 1978; McCloskey, 1985; Morgan, 2001; Rosales, 2014; Morgan & Wise, 2017; Quack & Herfeld, 2023), (2) assess the role of 'animal spirits' and the hidden factors of human psychology driving markets (Akerlof & Shiller, 2010, 2015), and (3) build new theories of choice under uncertainty (Johnson et al., 2023).

Finally, the third feature differentiating economic sociology from economics is the degree of interdisciplinarity. In fact, the former builds upon the assumption that other social sciences can better provide the insights surrounding behavioural hypotheses (Akerlof in Swedberg, 1990, pp. 61-77). In Granovetter's (1990) words:

> [Economists] should not worry so much whether something can in fact be described within a purely economic framework, but rather pay attention to the phenomenon from whatever framework it can be described (Granovetter in Swedberg, 1990, pp. 109-111).

In this sense, economic sociologists[52] often stressed the need for more interaction between economics and sociology to avoid that 'social problems will be analysed as if they had no economic dimension, and economic problems will be analysed as if they had no social dimension' (Swedberg, 1990, p. 3).[53]

2.1.2.2. Consumer culture

When applied to the study of consumption, the sociological lens is extremely powerful (Slater, 1997; Sassatelli, 2001; Warde, 2015). Drawing on the seminal papers acknowledging the fundamental limits of psychological frameworks in examining consumer groups and societies (Nicosia & Mayer, 1976;

[52] Whereas so-called 'old economic sociology' was featured by industrial sociologists belonging to the 1950s structuralist-functionalist school, the 'new economic sociology' focuses on social norms, institutions, job markets, economic relations, and rationality (Swedberg, 1990, pp. 332-338). Contrary to the former, the latter offers concrete, alternative perspectives to standard economic theory; by directly inquiring onto the social processes of production, distribution, and consumption, and considering economic action as embedded in social networks (Granovetter in Swedberg, 1990, pp. 105-107).
[53] In his book, Richard Swedberg (1990) interviews scholars at the frontiers of economics and sociology; including Gary Becker, James Coleman, George Akerlof, Harrison White, Mark Granovetter, Oliver Williamson, Kenneth Arrow, Albert Hirschman, Mancur Olson, Thomas Schelling, and Neil Smelser.

Mayer, 1978), sociologists started to empirically study consumption (Warde, 1990; Campbell, 1995; Shove & Warde, 2002) and formed a separate academic field: the *sociology of consumption* (Slater, 2005; Stillerman, 2015). This area includes, for instance, studies on sustainable consumption (Shove & Warde, 2002; Soron, 2010), cultural consumption (for a review see Katz-Gerro, 2004; Rössel et al., 2017), inequality issues (Guidetti & Rehbein, 2017), political consumerism (Neilson, 2010; Stolle & Micheletti, 2013), and the organisation of everyday life (Sztompka, 2008; for a review see Kalekin-Fishman, 2013).

Similarly, the *anthropology of consumption* studies the cultural causes of consumer behaviour (Douglas & Isherwood, 1979/1996; see also Colloredo-Mansfeld, 2012). Conceiving social relations as 'material flows' (Sahlins, 1972) and assuming economic agents' and behaviour's 'embeddedness' in sociocultural settings (Granovetter, 1985; Polanyi, 1944/2001; for additional insights on economic anthropology see Applbaum, 2005; Bourdieu, 2005; Wilk & Cliggett, 1996/2007; Firth, 1967/2013; Hann, 1983/2018; Carrier, 2022a), economic anthropologists study reciprocity and the 'gift economy' (Carrier, 2005; see also Giesler, 2006), black market dynamics (Levitt & Venkatesh, 2000, 2001), and poor populations (Hartmann & Boyce, 1983), among others. Contrary to economists, they are 'reluctant to think in terms of social laws and universals'; their approach is 'fundamentally empirical and naturalistic', since 'it rests on the observation (empirical) of people's lives as they live them (naturalistic)' (Carrier, 2022b, pp. 2-3).[54]

Both sociological and anthropological theories have been informing the sub-field of *consumer culture*, that is the ensemble of sociocultural approaches to the study of consumption, which became increasingly influential over the last four decades.[55] In particular:

> Consumer Culture Theory (CCT) has emerged as a distinctive field of study that synthesizes diverse subjects such as anthropology, cultural studies, marketing, political theory and sociology to provide new insights into consumers' relationships to the marketplace and the influence of commercial action on culture (SAGE, 2024a, internet).

[54] These scholars do condemn theoretical individualism, proposing the adoption of phenomenology, social constructivism (see Berger & Luckmann, 1966/1991), structuralism, social accounting, or ethnomethodology (Garfinkel, 1967) to study economic phenomena (Douglas & Isherwood, 1979/1996, pp. 41-43).
[55] Critics define these approaches as 'ontologically antirealist' (Giannasi & Casarin, 2018, 2022), accusing them to foster a non-objective approach to resources, goods, and consumption.

Despite explicitly analysing production, consumption, and distribution phenomena,[56] and publishing in top-tier economics journals such as the *Journal of Consumer Research* or the *Journal of Marketing Research*,[57] the articles by authors specialised in this area are not at all influential to economists.

Contrary to many economists, these scholars do assume that 'institutional and social structures systematically influence consumption' (Arnould & Thompson, 2005, p. 874) and that:

> Personal understandings draw from complex cultural systems and are articulated within specific sociocultural fields, and, hence, inflected through the prism of social structures, power relations, and, last but not least, embeddedness in marketplace structures (Thompson et al., 2013, p. 159).

Consumer culture theorists do study 'the institutional, historical, ideological, and sociological shaping of consumption and the broader market and social systems' (Thompson et al., 2013, p. 152), which are institutionalised through the consumption practices and processes (Giesler & Thompson, 2016).

This field includes several sub-streams looking at a broad range of consumption-related topics (Arnould & Thompson, 2005; see also Warde, 2015; Arnould et al., 2019). These are grouped in three main areas. First, those studies investigating the influence of institutional and social structures exerted upon consumer identity (see for instance Schau et al., 2009; Luedicke et al., 2010; Arsel & Thompson, 2011; Press & Arnould, 2011; Moisio et al., 2013; Thompson & Üstüner, 2015). This area explores, among other things, consumers' self-conceptions (Thompson & Hirschman, 1995; Holt & Thompson, 2004) and their dependence on political discourses and power structures (Shankar et al., 2006; Zwick et al., 2008; see also Thompson & Kumar, 2021).

Second, another stream of consumer culture research looks at consumer subjectivities and the ways in which these are shaped: via advertising planning (Jacobi et al., 2015; Mason et al., 2015; see also Charitsis et al., 2018), brand management (Hartmann et al., 2016), public welfare (Bjerregaard et al., 2016), surveys (Law, 2009), neuromarketing (Schneider & Woolgar, 2012; Nemorin, 2017), neoliberal market policy (Varman et al., 2012),[58] marketplaces (Henry, 2005; Simon, 2011; Ulver-Sneistrup et al., 2011), and data production, collection, and analysis (Zwick & Denegri Knott, 2009; DuFault & Schouten, 2020).

[56] The themes tackled by *consumer culture* researchers include: consumer identity, marketplace cultures, the socio-historic patterning of consumption, mass-mediated ideologies, and consumers' interpretive strategies (Arnould et al., 2023).
[57] These journals, in fact, figure among the top 30 journals of the subject area 'Economics and Econometrics' according to Scimago (Scimago, 2024).
[58] Coupled with 'governmentality' considerations (Foucault, 1991), these studies explore the political factors, institutional procedures, and power dynamics promoting neoliberal subject positions (Harvey, 2005; Mudge, 2008; Slobodian, 2018; Cayla, 2021).

Third, the sub-field of political consumerism inquiries into those mechanisms through which consumers tackle the global and systemic issues having a political dimension.[59] Here, scholars study the dynamics of appropriation (Kjeldgaard & Askegaard, 2006) and acculturation (Askegaard et al., 2005; Üstüner & Holt, 2007; Luedicke, 2015; Veresiu & Giesler, 2018), ethnic consumer behaviour (Veresiu & Giesler, 2018), ethical consumption (Fuentes & Sörum, 2019), international development (Kipp & Hawkins, 2019), conscious pricing (Eckhardt & Dobscha, 2014), sustainable consumption (Gollnhofer & Kuruoglu, 2018; Gollnhofer et al., 2019), and consumer freedom (Yngfalk, 2016) and responsibilization (Giesler & Veresiu, 2014; Bajde & Rojas-Gaviria, 2021), among others.

2.1.2.3. Organisation studies

When sociocultural approaches are applied to firms, production, and organisational phenomena, the field of *organisation studies* emerges. As mentioned by the description of the homonymous journal,[60] this area of research:

> Promotes the understanding of organizations, organizing and the organized, and the societal relevance of that understanding. [It] prompts engagement with organizations and organizing as psychological, social, economic, cultural, political, historical and philosophical phenomena, and […] of how organizations and organizing shape and are shaped by societies (SAGE, 2024b, internet).

The main streams of study in this area include organisational identity (Brown, 2001; Hatch & Schultz, 2002; Alvesson et al., 2008; Schultz & Hernes, 2013), sensemaking (Maitlis & Christianson, 2014; Brown et al., 2015), culture (Hatch, 1993), change (Tsoukas & Chia, 2002; Senior et al., 1997/2020), and learning (Huber, 1991; Dodgson, 1993; Argote & Miron-Spektor, 2011).[61]

Although this literature looks at organisations and management-related questions, economists studying similar issues in the fields of *management science* and *industrial organisation* (IO) do not engage with that. Albeit interested in similar phenomena (that is, how organisations work, how firms behave), business scholars and practitioners adopt different perspectives, methods, and data than most economists (for an exception see Borenstein et al., 1998). The reason for this being that:

[59] According to Thompson and Kumar (2021), political consumerism 'encourages a placating, and ultimately misleading, belief that purchasing goods with socially redemptive meanings (to wit, green, sustainable, fair trade, etc.) is a sufficient response to the environmental degradation and socio-economic inequities posted by corporate capitalism and carbon-intensive consumer lifestyles' (p. 2).
[60] Other journals include *Organization Science*, *Organizational Behaviour*, and *Organization Theory*, each specialised in different aspects and approaches to organisational issues.
[61] A comprehensive account of these streams is found in Czarniawska (2016) and Langley and Tsoukas (2016); of research methods, in Bryman (1989/2003); of theories and issues, in Clegg et al. (2006).

> The intellectually respectable part of economics is microeconomics, and in the view of most business school people microeconomics has demonstrably nothing to do with observed business behaviour (White in Swedberg, 1990, p. 80).

Drawing upon qualitative insights from IO research (Cyert & March, 1963/1992; Sutton, 1996), only a few economists pursued the direct observation of business phenomena (Coase, 1937; Hall & Hitch, 1939; Lester, 1946, 1954; Duesenberry, 1958; Coase, 1987; March & Simon, 1993).

While classical economists like Smith, Marshall, and Pigou observed the industrial factories and processes of their times in order to develop economic theories of production (Burawoy & Lukacs, 1985; Helper, 2000; Basole & Ramnarain, 2016), the missing exploratory and observational fieldwork in contemporary economic research provoked key conceptual misunderstandings around fundamental assumptions. For instance:

> It is suggested that the use of the word "firm" in economics may be different from the use of the term by the "plain man." Since there is apparently a trend in economic theory towards starting analysis with the individual firm and not with the industry, it is all the more necessary not only that a clear definition of the word "firm" should be given but that its difference from a firm in the "real world," if it exists, should be made clear (Coase, 1937, p. 386).

An observational approach, a broader theoretical framework, and QRMs shall prevent economists to incur in such misconceptions, getting them closer to the empirical understanding of firm behaviour.

2.1.3. Political and geographical approaches

Besides the sociocultural studies on consumption and production, a third domain of approaches look at market phenomena through political and geographical lens. Since market analysis intertwines with forms of power and institutional and political orders, scholars from *economic geography* and *market studies* pursue interdisciplinary and critical research asking how economies and markets are designed, manufactured, and constructed (Zuidhof, 2012). The following sub-sections will indeed explore these two fields, focusing on neoliberalism and performativity, respectively.

2.1.3.1. Economic geography

Since the 1980s, economic geographers have been studying 'neoliberalism' and analysing neoliberal institutions.[62] Associated with the socio-political order characterising most Western countries (Manne & McKnight, 2010),[63] neoliberalism is mainly informed by the idea of self-regulating markets, where consumers are free to choose the allocation of goods (or services) maximising their material interests and satisfying their human aspirations (Crouch, 2011). It has been lately defined as a:

> Promiscuously pervasive, yet inconsistently defined, empirically imprecise and frequently contested […] chaotic conception rather than a rationally defined abstraction; […] a bundle of (favoured) policies, as a tendential process of institutional transformation, as an emergent form of subjectivity, as a reflection of realigned hegemonic interests, or as some combination of the latter (Brenner et al., 2010, pp. 183-184).

> Everything from a particular brand of free-market political philosophy and a wide variety of innovations in public management to patterns and processes found in and across diverse political spaces and territories around the globe (Dean, 2014, p. 150).

Today, this 'overblown notion' reflects into a multifaceted definition including a 'thought collective', a 'regime of government', and a 'militant movement' (Dean, 2014, pp. 1, 151).

These authors further stress the 'bewildering array of local trajectories, contingent forms, and hybrid assemblages' characterising neoliberalism (Peck et al., 2010, p. 96), implying that 'theoretical considerations and strategies to implement theory are not always and everywhere comprehensively successful' (Brand & Sekler, 2009, p. 6). In fact, its impacts on economic reality differ a lot: from the ones that do not significantly undermine the neoliberal tendencies to the ones that critically call it into question (Brenner et al., 2010). Due to its 'contingent sources, multiple forms, and heterogeneous and apparently contradictory elements', neoliberalism 'is irreducible to a simple and coherent philosophy or ideology', and should be tackled by 'a methodological framework that allows for contingency and dynamism, and seeks empirical analysis in local discourses and practices' (Dean, 2014, pp. 151-153).

Through the adoption of qualitative insights and open conceptual frameworks, the theories of 'post-neoliberalism' were built (Aalbers, 2013).[64] Contrary to most economic research, these studies acknowledge for:

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[62] Building upon the 'free market' ideological doctrine of Friedrich Hayek and Milton Friedman, the neoliberal order was initially operationalised by the economic policies of Pinochet, Reagan, and Thatcher, among others, who run 'a politically guided intensification of market rule and commodification' (Brenner et al., 2010, p. 184; see also Plehwe, 2018; Gautier Morin & Rossier, 2021).

[63] Despite representing the dominant model in Western countries for a long time, neoliberalism revealed its main fallacies during the 2008 global financial crisis (Brand & Sekler, 2009; Duménil & Lévy, 2013; Davies, 2014; for opposite views see Dean, 2014; Mirowski, 2014; Springer, 2015).

[64] This term indeed refers to the overcoming hegemony of market-disciplinary agendas (Altvater, 2009; Springer, 2015; for opposite views see Ötsch & Pühringer, 2017; Mckeown & Glenn, 2018).

> The path dependency, difference, and unevenness of neoliberalization, and the multiple, variegated, and unique mutations that arise as articulation with existing political economic contexts and geoinstitutional configurations occurs (Springer, 2015, p. 10).

Far from being just a model of economic deregulation promoting private initiative, 'neoliberalisation' empirically revealed as 'an historically specific, unevenly developed, hybrid, patterned tendency of market-disciplinary regulatory restructuring', namely 'a particular form of regulatory reorganization' (Brenner et al., 2013, p. 4) where marketisation and commodification processes are mediated by 'the systematic use of state power to impose (financial) market imperatives' (Saad-Filho & Johnston, 2005, p. 3).

2.1.3.2. Market studies

So-called 'market studies' approach markets with an interdisciplinary and critical perspective as well as sociological and political lens. Notable streams include *constructivist market studies* (Callon, 1998; Callon & Muniesa, 2005), *market system dynamics* (Giesler & Fischer, 2017), and *market shaping* (Nenonen et al., 2019; Storbacka et al., 2022). Furthermore, 'performativity' scholars especially ask how economic theories and economists themselves 'perform' economic reality, that is how they shape markets and real-world economies by designing economic reality according to economic principles.[65] As famously postulated by Keynes (1936):

> The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist (Keynes, 1936, p. 383).

Drawing upon the assumption that 'the behavior of men is not independent of the theories of human behavior that men adopt' (Eisenberg, 1972, p. 123), the former might thus (un)intentionally steer the same economic agents' behaviour that they intended to describe (MacKenzie & Millo, 2003; Ferraro et al., 2005; Callon, 2007; Garcia-Parpet, 2007; MacKenzie et al., 2007; Muniesa, 2014).

This happens through four different mechanisms. First, through the adoption of theories and formulas describing market actors' behaviour or market functioning. That is:

[65] Performativity theories also build upon the concept of 'self-fulfilling prophecies' (Merton, 1948; Eisenberg, 1972; see also the concept of 'double hermeneutics' by Giddens & Dallmayr, 1982, pp. 11-14).

> A theory can become true to the extent that people, acting on its ideas and underlying assumptions, introduce practices, routines, and organizational arrangements that create conditions favouring the predictions made in the theory. […] Theories can also become self-fulfilling by describing how people and organizations *ought* to behave (Ferraro et al., 2005, pp. 12-13, emphasis in original).

For instance, the Black and Scholes (1973) formula explaining stock market dynamics became the theory of reference for many practitioners in the field, ending up regulating the operations of the stock market itself (MacKenzie & Millo, 2003; MacKenzie, 2009).[66] In this sense, economic models are considered as performative practices that (1) assume their own interventions and (2) are the result of their ongoing application to reality (Mirowski & Nik-Khah, 2007; Nik-Khah & Mirowski, 2019).[67]

Second, through the impact of 'discourses'[68] around the notions of rationality (Callon, 2008; Boldyrev & Svetlova, 2016; see also Bäuerle, 2022), the figure of *homo economicus* (Callon, 2007, pp. 29-42; Fridman, 2010; Morgan, 2012, pp. 153-156; see also Raworth, 2017, pp. 81-110), and other economic assumptions (Ferraro et al., 2005; see also Langley & Leaver, 2012). In the name of utilitarianism, rationalisation, and quantification (McCloskey, 1982/1998, pp. 100-111), economic theory shapes the functioning of modern societies through the principles of efficiency, optimisation, and profit-maximisation, which 'becomes not merely a description of what *does* happen in a capitalist economy, but a template for what *should* happen' (Reed, 2018, internet, emphasis in original).

Third, economics performs through education and training (Frey & Eichenberger, 1993; for a discussion of graduate training programs in economics see Colander, 2008). That is:

> The particular techniques, tools, and habits of mind of economists do not appeal full-grown from the head of Zeus: rather they emerge imperfectly from the educational practices that inculcate certain habits of mind and techniques of craft (Weintraub, 2002, p. 270).

> It is very difficult to know what's wrong with economics until you've spent a lot of time learning it; by which time of course a lot of people are completely indoctrinated, so they can't think if there's anything wrong with it. It's sort of inevitable (Wolf, 2016, internet).

[66] Although this seem to partially justify the economists' incapability of predicting economic crises, and other catastrophic outcomes (Taleb, 2010b; see also Taleb, 2010a), the unsuccessful attempts of forecasting market trends and empirically estimating future stock prices fundamentally clash with the theoretical assumption of perfect information upon which NE is based (Sylos Labini, 2016, p. 73).

[67] Economic theory can perform individuals who are not even familiar with the subject, especially if the derived practices are the point of reference for their profession, or applied discipline.

[68] In Foucauldian terms, the scientific 'disciplines constitute a system of control in the production of discourse, fixing its limits through the action of an identity taking the form of a permanent reactivation of the rules' (Foucault, 1972, p. 224).

In fact, economics textbooks indoctrinate students' mindset (Caplan, 2001; Bäuerle, 2022),[69] steering their attitudes towards more competitive (Frank et al., 1993), corrupt (Frank & Schulze, 2000), selfish (Marwell & Ames, 1981), and less compassionate (Molinsky et al., 2012) forms of behaviour than others (for contrasting arguments see Frey & Meier, 2003; Bauman & Rose, 2011; for a discussion see Lelkes, 2021).

Fourth, through professional practice. Via 'a system of beliefs that infiltrate agents' minds and colonize them' (Callon, 2007, p. 15), economics 'performs' management (Ghoshal & Moran, 1996; D'Adderio & Pollock, 2014; Gond et al., 2016; Marti & Gond, 2018; D'Adderio et al., 2019; Marti & Gond, 2019) and marketing practices (Cochoy, 1998; Araujo, 2007; Andersson et al., 2008; Araujo et al., 2010; Jacobi et al., 2015; Mason et al., 2015). These contribute to shape markets by the adoption of not only descriptions and representations (Millerand & Bowker, 2009) but also norms, rules, tools (Zuboff, 2015), methods (Law, 2009), data (Zwick & Denegri Knott, 2009; Ball, 2017; Yeung, 2017; Cluley, 2018; Deighton, 2019; DuFault & Schouten, 2020) and measures, calculations or evaluations 'normalising' professional activities (Kjellberg & Helgesson, 2007).

Critics of performativity, however, stress the role of 'performative failures'[70] (Brisset, 2019), advocating for the inclusion of 'multiple theoretical influences' and the adoption of a 'practice-based framework' that overcomes performativity theory's narrow focus on financial economics (Kjellberg & Helgesson, 2006). Yet, performative approaches remain key to (1) understand the constructive and transformative power of economic theories, (2) move away 'from polarized discussions concerning whether this or that theory provides an unrealistic characterization of markets' by 'studying markets in the making, rather than markets as ready-made' (Kjellberg & Helgesson, 2007, pp. 140-141), and (3) shift the conception of markets from the economic relations between rational actors to institutions constituted in and through the 'social' (Schneider & Woolgar, 2012).

2.2. The missing qualitative research methods

The previous sections outlined different approaches to the analysis of economic phenomena. Besides offering alternative conceptual and theoretical frameworks explaining consumption, production, and market issues, those disciplinary perspectives share the adoption of QRMs as the primary, or at least

[69] In fact, 'the techniques and tools used by economists and their particular mental approaches do not emerge […] as ready-made: rather, they arise imperfectly, from the education systems that shape the mind-sets and techniques' (Weintraub in Parisi & Alacevich, 2009, pp. 293-294, author's translation).

[70] These occur 'when a theory fails to make the social world work according to the mechanisms it describes', because in principle 'any theory could perform a very malleable social world in the absence of social constraints'; artificially making 'the social world more plastic than it actually is' (Brisset, 2019, pp. 1-5).

complementary source of empirical evidence. Drawing upon the critiques addressed to the deductive methods of theory building and quantitative methods for theory evaluation (for a brief outline see Lee & Cronin, 2016, pp. 1-3), qualitative methodology initially emerged to contrast and counter-balance positivist tendencies within the social sciences (for an overview see Pickbourn & Ramnarain, 2016). This opposition between methodological traditions will be examined in the following sections, where an overview of the main features, strengths, and limits of QRMs of data collection and analysis will be presented.

2.2.1. Qualitative and quantitative research

QRMs are compromised by a perceived inferiority to quantitative research in terms of scientific value (Sandelowski, 2000; Cawthorne, 2001). This is the case since in different domains:

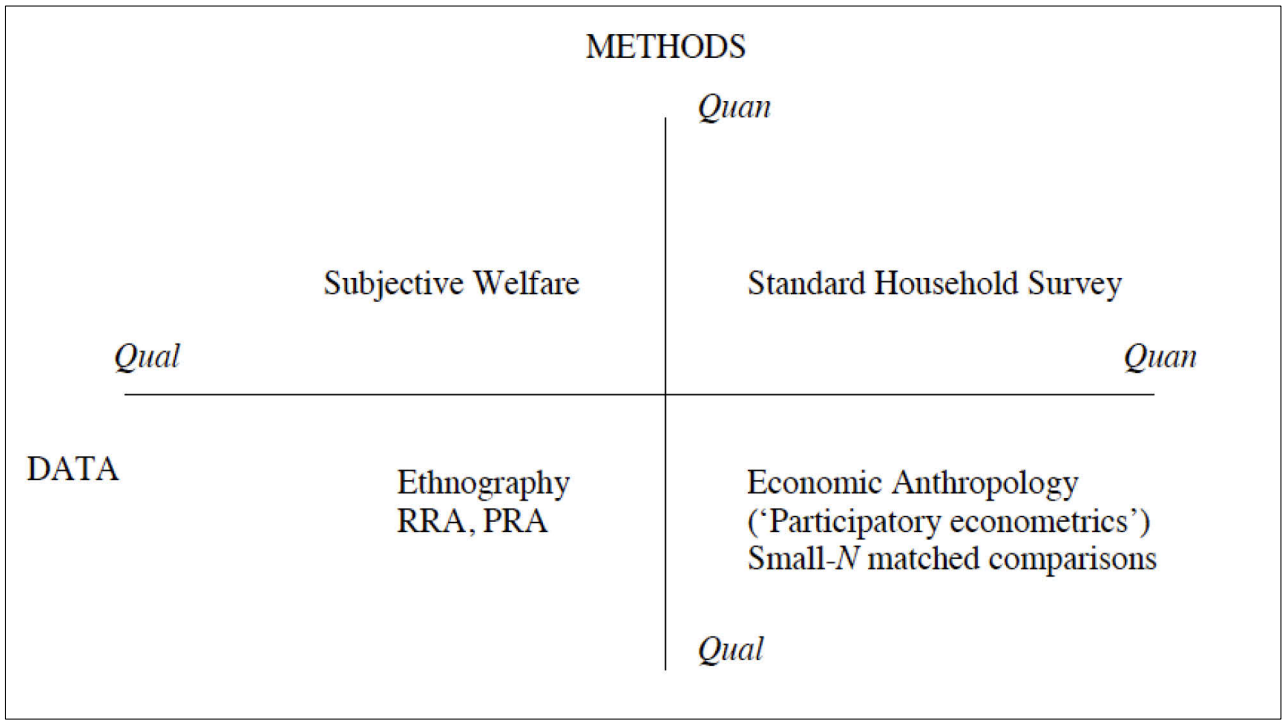
> We have fallen in love with the problem of finding out where God drew the boundary dividing scientific from nonscientific thinking. But there is no reason to believe that the term "scientific" occurred in God's blueprint of the universe (McCloskey, 1982/1998, p. 176).

In fact, QRMs are extensively used in disciplines adjacent to economics, with ground-breaking results (for an account of the advantages of QRMs see Rao & Woolcock, 2003; see also Jemna, 2016). Building upon this premise, the following paragraphs examine the differences between quantitative and qualitative research methodologies.

Albeit both belonging to the domain of empirical social sciences, quantitative and qualitative research withhold fundamental differences under multiple dimensions. First, in terms of the *type* of data. This is either qualitative (textual) or quantitative (numeric). Although the former can be tackled by quantitative means of analysis (Onwuegbuzie & Teddlie, 2003; Onwuegbuzie & Combs, 2010) and the latter treated with qualitative-exploratory methods (Boudoukh et al., 2013; Gentzkow et al., 2016; Kuziemko & Washington, 2018),[71] each of them is usually associated with its qualitative and quantitative methods, respectively (see Figure 3) (for other typologies see Kanbur, 2003, p. 647).

[71] Even though 'quantitative analysis inherently involves the use of numbers' (Mahoney & Goertz, 2006, p. 245), actually, every statistical analysis relies on interpretive efforts, and all data is originally *qualitative* in nature (Blaikie, 2003); at the same time, 'qualitative studies quite frequently employ numerical data', and 'require quantitative information' (Mahoney & Goertz, 2006, p. 245; see also Starr, 2014, p. 240).

Figure 3 – Data and methods



Source: Rao and Woolcock (2003).

In economics, nevertheless, every type of data is transformed into a numeric, or quantitative, form in order to be analysed through statistical, econometric, and experimental techniques; establishing 'pre-set [conceptual and operational] confines' and thus limiting 'what can be learned about the meanings participants give to events' (Sandelowski, 2000, p. 336).[72]

Second, in terms of the *source* of data. This can be either primary or secondary. Whereas the former is derived by methods that directly generate data (to wit, fieldwork, interviews, ethnographies, questionnaires), the latter is already produced by third parties like public institutions or organisations. Differently than other social scientists:

> For related practical and epistemological reasons, economists rarely collect their own data: quantitative data are typically very expensive to collect, and 'statistical' and 'empirical' seem synonymous (Hill & Meagher, 1999, p. 2).

That is, most economists only adopt secondary data that were produced by international organisations or national entities; and those who collect primary data do so through quantitative and experimental techniques, excluding QRMs (for a discussion see Rao & Woolcock, 2003).

[72] In fact, individual meanings can be especially useful for understanding certain economic phenomena (Piore, 2006, pp. 21-22).

Third, in terms of the *stage* of empirical work. This can be distinguished into data *collection* and data *analysis* (for a detailed overview see de Muijnck & Tieleman, 2022, p. 242). Quantitative methods of data collection include surveys and experiments, whereas qualitative ones are one-to-one interviews and observations, for example (for an overview of QRMs see Bickman & Rog, 2009; see also Bell et al., 2023).[73] Quantitative methods of data analysis include regression analysis and network analysis, while their qualitative counterparts are content analysis and discourse analysis, for example (Kanbur, 2003; for a typology of strengths and limitations of each method see Szostak, 2016).[74] If quantitative methods cover large samples of the population and do not require its active involvement, the opposite is true for qualitative ones, where:

> Relatively flexible discussions with research subjects are needed for gaining a full and complete set of insights into the phenomenon of interest (Starr, 2014, p. 240).

Coupled with a deep knowledge of the research context (Hill & Meagher, 1999, p. 4), this approach is key in qualitative data collection – whose main methods will be presented in the following section.

2.2.2. Qualitative data collection

Following from the distinctions outlined above, this section introduces the principal qualitative data *collection* methods. It focuses on (1) interviews and focus groups, (2) observations and ethnographies, and (3) case studies, respectively.

2.2.2.1. Interviews and focus groups

Interviews and focus groups are methods for collecting information directly from the participants of the study (Merton & Kendall, 1946). Qualitative interviews can be, first, structured, semi-structured, unstructured, or open-ended (Gillham, 2005), depending on the length of the questions, their solicited answers, and the structure of the interview guide. Whereas structured and semi-structured interviews are rigid sequences of pre-determined questions, with little difference in phrasing in order to ensure comparability across them, unstructured and open-ended interviews are rather guided conversations

[73] Albeit part of qualitative secondary data sources, historical methods, like document collection or archival research, are not addressed here (for an account see Coats, 1993; see also Golder, 2000; Yan & Hyman, 2018).
[74] If quantitative data *analysis* methods are the status quo in economics, quantitative data *collection* methods, instead, 'are rarely taught to economics students, despite the fact that students do learn how to analyse this data once it is collected' (de Muijnck & Tieleman, 2022, p. 238).

on a set of topics, with no pre-determined questions or control over the responses (Starr, 2014, p. 241; Basole & Ramnarain, 2016, pp. 144-146).

While the former can generate structured data about a phenomenon, by inquiring into actors' opinions and descriptions, the latter are used to understand the processes through which individuals take economic decisions, by exploring their underlying motivations (Piore, 1979, p. 560), or to revise conventional theory (Piore, 2006, pp. 20-21). In fact:

> What worked in interviews was letting the respondents tell their stories. […] One of the advantages of open-ended interviews is that the respondents often answer questions you would not have thought to ask (Piore, 2006, p. 18).

> They are means, in other words, of identifying the model of that portion of the socioeconomic world which the participants themselves use in making decisions. […] The responses grouped together, and taken as a whole, are clues to the mental processes of the economic participants (Piore, 1979, p. 566).

Through follow-ups, 'prompting' techniques, and 'probing' strategies, qualitative interviews thus let researchers access an unimaginable 'universe of possible responses' as well as the 'interior life that frames problems in particular ways, allowing people to articulate their strategies relative to their mental models of how the world works' (Chamlee-Wright, 2010b, pp. 325-326).

Second, interviews can be distinguished according to their scope. For instance, 'preliminary' key-informant interviews aim at the initial, exploratory understanding of phenomena's main features (Chamlee-Wright, 2010b), and 'in-depth' interviews are directed towards understanding respondents' experiences and perceptions (for an account of interview design see Hill & Meagher, 1999, pp. 5-6; see also Arsel, 2017). Contrary to interviews, surveys – a quantitative research method – (1) 'tend to reflect the preconceptions and biases of the researcher', with 'little opportunity to be "surprised" by new discoveries or unexpected findings' (Rao & Woolcock, 2003, p. 2), (2) are inevitably constrained 'by the variables that have been collected' (Levitt & Venkatesh, 2001, p. 79), and (3) provide 'flat and uninspiring' information lacking richness and diversity, thus preventing scattered and intangible 'nonquantifiable knowledge' to emerge (Emami & Olson, 2002, p. 143; for a comparison between interviews and surveys see Chamlee-Wright, 2010b).

Albeit less specific than qualitative interviews, so-called 'focus groups' are semi-structured group discussion sessions led by a facilitator, or mediator.[75] Complementary to the former, the latter originated in marketing with the aim to understand the rationale of consumer tastes and preferences.

[75] As well explained by Shiller (2019), the focus group leader 'facilitates talk about stimulus words related to the subject of the research and records the conversation. […] It is an art as well as a science, the art of getting people to think and talk about why they do certain things or hold particular beliefs' (pp. 282-283).

Focus groups are indeed adopted to: (1) examine the reasons behind group decisions and trends; (2) capture group dynamics like conflict and agreement; (3) 'bring out majority and minority perceptions, opinions, views' (Starr, 2014, p. 241); (4) acquire insights 'about processes and people's experiences and thoughts' (de Muijnck & Tieleman, 2022, p. 245); (5) explore their perspectives on a given issue (Basole & Ramnarain, 2016, p. 146); and (6) access the 'attitudes, beliefs, feelings, experiences and reactions of respondents' (Jemna, 2016, p. 161).

In economics, interviews and focus groups would allow, for instance, to: (1) inquire 'into how the subject arrived at his conclusions, or how a subject developed her strategies for action' (Chamlee-Wright, 2010b, p. 326); (2) access 'people's motives, the constraints they face, and how they go about achieving their objectives, given the constraints' (Bewley, 2002, p. 343); (3) gather 'unique insights into decision-making processes and hidden economic activities, suggest new theoretical hypotheses, [...] investigate complex causal interactions, and often suggest policy responses' (Szostak, 2016, p. 59); and (4) unveil the 'popular understandings and motivations, […] reveal how answers and stories changed through history', and 'elicit actual conversations about economic narratives' (Shiller, 2019, pp. 281-285). Despite their advantages and potential uses (for a discussion of interviews' usefulness in economics see Bewley, 2002), however, these methods are yet not adopted by economics scholars (for an exception see Logan, 2015).[76]

2.2.2.2. Observations and ethnographies

Representing a great portion of qualitative research, observational methods can be distinguished into 'participant' and 'non-participant' observations. Whereas the latter presupposes a detached, passive observer role of the researcher, the former sees her fully (or partially) inserted in the context of study. Entailing prolonged and extended fieldwork, participant observations and ethnographies (LeCompte & Schensul, 2010; see also Kozinets et al., 2018) are methods designed to observe the respondents in a specific place and time, outside interview situations (Jemna, 2016, p. 161). Being an *active* research process, ethnographic research allows users to 'characterize the norms, rules, conventions, habits and beliefs that govern patterns of behaviour' (Starr, 2014, p. 242), tackling 'different types of questions than are answered by quantitative or statistical analysis' (Emami & Olson, 2002, p. 143).

Under the assumption that this approach let scholars better capture the observed phenomena's nuances (Hammersley & Atkinson, 2019), ethnographies fundamentally depart from quantitative data collection methods such as experiments – where the focus is on cause-effect dynamics rather than the in-depth examination of contextual features. In fact:

[76] Although being a fundamental tool in marketing science and other disciplines, less than 0.05% of economics and finance scholars mention the term 'focus group' in their articles during the decade 2010–2019 (Shiller, 2019, pp. 282-284).

> Ethnography, used by sociologists and anthropologists, represents the polar opposite of the standard economic approach. An ethnographer integrates himself or herself into the community being analyzed, paying careful attention to the context in which the actors operate. […] The benefits to such an approach are that the researcher structures the analysis to answer precisely the desired question, and the depth of specific knowledge acquired by the sociologist allows for a richer understanding of the problem (Levitt & Venkatesh, 2001, p. 79).

Observational methods are indeed useful for: (1) outlining the main characteristics of a phenomenon, (2) identifying typologies and categories, (3) describing the meanings people attach to an experience, and (4) understanding the contexts in which decisions and actions occur (Ritchie et al., 2014; Basole & Ramnarain, 2016, p. 139).

Nonetheless, they have been systematically downplayed by economists (Basole & Ramnarain, 2016; Szostak, 2016) for similar reasons as for interviews and focus groups not being adopted. That is:

> The core of sociology and cultural anthropology is ethnography, whose goal is to uncover and interpret the stories that people are telling themselves. But the case-study, interpretive methodology of ethnography is considered soft (Akerlof, 2020, p. 413).

Yet, a few economists applied observational methods with successful results (Hart, 1973; Chin, 2001; Venkatesh, 2006) in the domains of (1) trust, social networks, and norms, (2) power relations across different genders, races, and ethnicities, (3) motivations and decision-making of economic actors, (4) identity and perceptions, and (5) labour relations and processes (for a full list see Starr, 2014, pp. 245-253; see also Basole & Ramnarain, 2016).

2.2.2.3. Case studies

Finally, case studies are a particular form of qualitative data collection that 'involves using a relatively small number of cases (countries, communities, companies or individuals, depending on the research purpose) to conduct an in-depth analysis of a given question of interest' (Starr, 2014, pp. 241-242). A case study is defined as:

> An in-depth, multifaceted investigation of a particular object or theme where the object or theme is ontologically real and gives it its unity. Thus, the case study approach is an exemplary method of data collection and comparison used to develop categories, structures, and causal mechanisms (Lee, 2016, p. 49).

Case studies are usually adopted to: (1) establish theoretical categories,[77] (2) develop the analytical narrative of a phenomenon by providing insights about its features, dynamics, and processes, (3) build theories of qualitative/narrative or quantitative/modelling form, and (4) 'identify the assumptions of conventional theory that seemed to be wrong and the alternative assumptions to replace them' (Piore, 2006, p. 20).

Extensively adopted in the fields of political science (Vennesson, 2008; Blatter et al., 2016), IO (Coase, 1937, 1987; see also Cockburn & Henderson, 1998; Lerner & Merges, 1998), as well as management (Eisenhardt, 1989; see also Hoorani et al., 2019, 2020), case studies (Bennett & Elman, 2006; Ylikoski & Zahle, 2019; Zahle, 2019) are not recognised as a 'valid' method by economists. Nevertheless:

> Case studies help us [economists] see what constitute good assumptions for our models, as they also help make the case for behavioral over classical models. Economists' current Friedman-type approach, which eschews testing models based on assumptions, keeps us away from case studies (Akerlof, 2020, p. 413).

By relying on 'the views of well-placed and intelligent observers' (Bewley, 1995, pp. 250-251), case studies are 'a useful approach to finding and describing essential information about an economy' (de Muijnck & Tieleman, 2022, p. 245) and arguably represent an essential tool of any economist.

2.2.3. Qualitative data analysis

This section outlines the main qualitative data *analysis* methods. It indeed focuses on (1) content and thematic analysis, (2) grounded theory, and (3) discourse analysis, respectively (for more qualitative data analysis methods see Leech & Onwuegbuzie, 2008).

2.2.3.1. Content and thematic analysis

Content analysis (Bauer, 2000; Mayring, 2004; Selvi, 2020) and thematic analysis (Braun & Clarke, 2006; see also Vaismoradi & Snelgrove, 2019; Ozuem et al., 2022) allow researchers to categorise qualitative data into organised portions by 'coding' its textual elements (Jemna, 2016).[78] In practice, this means classifying the transcripts of interviews and focus groups, or the fieldnotes of observations and ethnographies, into pieces of text that are deemed useful for answering the research questions of

[77] Whereas the scope of multiple case studies is usually to build categories and typologies, the aim of single case studies is to fully understand their dominating features (for an account of case studies see Vennesson, 2008).
[78] Qualitative data coding is usually pursued through the assistance of dedicated software such as NVivo, MaxQDA, and ATLAS.ti.

the project. Throughout multiple rounds of coding, the researcher can create more clusters, categories, and groups, reaching increasingly richer detail, wider typologies, and higher levels of analysis. Each category shall represent a different 'theme', which is a systematised version of the material emerged from the data initially collected.

Due to their flexibility, versatility, and customisability, these methods are considered the 'gold standard' for tackling qualitative data sources – whether primary or secondary. When the knowledge of the studied phenomenon is scarce, content and thematic analysis help making sense and giving a shape to its main features. In fact:

> Field work provides the qualitative researcher access to the local knowledge necessary for initial rounds of discovery and the coded transcripts and theme reports offer another opportunity for discovery that would otherwise be easily missed (Chamlee-Wright, 2010b, p. 330).

That is why they are often adopted before quantitative analysis, to select the themes worth of further exploration and direct additional statistical analysis, or design experiments targeting those variables and factors that are deemed relevant in the specific research context.

In the social sciences, content and thematic analysis[79] are adopted, among others, by consumer researchers (Kassarjian, 1977; Kolbe & Burnett, 1991), management scholars (Bowen et al., 2012), urban economists (Chaiechi & Eijdenberg, 2022), entrepreneurship studies (Eugine Tafadzwa et al., 2017), and production research (Sodhi & Tang, 2018). As for other QRMs presented here, they carry great potential for economics; calling for (1) the development of deeper accounts of economic facts, (2) the collection of qualitative insights from economic policy areas, (3) the systematic classification of economic domains, and (4) the content and theme-based analysis of economic events.

2.2.3.2. Grounded theory

Resulting from the philosophical developments of 'critical realism'[80] since the 1970s (see Lee, 2016; Morgan, 2016), the method of grounded theory 'is a process by which researchers create their theory "directly" from data' and 'in which data collection, theoretical analysis, and theory building proceed simultaneously' (Lee, 2016, p. 39). It thus represents the attempt to generate and build theories (for a discussion of grounded theory building see Shah & Corley, 2006) by letting insights emerge directly from the participants (Jemna, 2016, p. 161) and 'providing an explanation at a more general level of

[79] These are not to be confounded with *quantitative* content analysis methods, which draw on social network analysis and other quantitative techniques adopted in economics and finance (Jegadeesh & Wu, 2013; Baláž et al., 2022).
[80] Critical realism is an ontological approach observing social reality through the lens of agency, structure, and historical transformation, and considering economic phenomena as causally constituted (Lawson, 2003, pp. 63-76; Morgan, 2016).

a particular instance by grouping together and categorizing a number of instances which seem similar' (Finch, 2002, p. 214).

Initially crafted by sociologists (Glaser & Strauss, 1999; Corbin & Strauss, 2014), grounded theory is adopted to study social phenomena such as 'social relations, social networks, and intentional actions through acting persons' by building on qualitative data (to wit, fieldwork, case studies) as its primary source (Lee & Cronin, 2016, p. 1). Via categorisation, description, and explanation, grounded theory allows to (1) isolate categories, analytical concepts, features and (2) identify the relationships between them in order to build new frameworks and theories (for an account of grounded theory vis-à-vis other methods see Goulding, 1998; for details about the roles and uses of grounded theory see Finch, 2002; see also Bryant & Charmaz, 2007; Thornberg & Charmaz, 2014).

Extensively used in business, management, market research (see Langley, 1999; Locke, 2001; Goulding, 2002, 2005), and IO (Reid, 1993; Reid et al., 1993), only few economists adopted grounded theory (Lee & Downward, 1999; Finch, 2002; for a full list see Starr, 2014, pp. 245-253). However, possibly:

> Grounded theory provides a basis for economists to make effective use of case studies, and of qualitative and quantitative data in general, by connecting case studies together in order to generalize, and in so doing verify, emerging novel contributions to knowledge (Finch, 2002, p. 214).

Grounded theory is especially encouraged to provide economists the chances and capacities not only to adopt research methods of qualitative data collection and develop their analytical frameworks upon direct observation of economic phenomena, but also to foster empirically grounded economic theories (Helper, 2000; see also Rethinking Economics, 2020).

2.2.3.3. Discourse analysis

A 'discourse' is a form of representation that, beyond producing meaning through language, produces knowledge through a series of rules and norms, and 'governs the way that a topic can be meaningfully talked about, [...] how ideas are put into practice and used to regulate conduct of others' (Hall, 1997, p. 29).[81] Because 'all social practices entail meaning, all practices have a discursive aspect' (Hall, 1992/2019, p. 86) and discourses have concrete impact in terms of their real, social, and productive effect to what people believe to be true. Discourses can indeed be conceived as 'ways in which bodies of knowledge are produced, circulated and come to define our ways of knowing by objectifying power

[81] The concept overcomes the traditional distinction between language and practice, explaining what constructs the topic itself, by defining and producing its objects of knowledge.

relations'; generating, limiting, and defining what is knowable, and thus creating 'both producers and consumers within discourses of knowledge' (Shankar et al., 2006, p. 1016).

These forms of knowledge and discursive practices then work together in specific institutional settings to regulate the conduct of others, where power operates within an institutional apparatus and with the support of its technologies and techniques (Hall, 1997, pp. 32-35). As a result, discourses mould power relations and 'alignments among institutional structures and practices, subject positions, material conditions, and larger historical processes', operating through so-called 'technologies of the self' (Thompson, 2018, pp. 214-215). In this perspective, marketing discourses, for instance, 'can be conceived […] as both technologies of domination and technologies of self: at once disciplining and liberating' (Shankar et al., 2006, p. 1020).

Building upon this framework, the method of 'discourse analysis' (Gill, 2000) uncovers the discourses underlying qualitative data. Deeper than content or thematic analysis, it requires a different level of inquiry and the adoption of critical lens towards textual elements. Discourse analysis seeks for nuanced dimensions such as political assumptions, power-related issues, covered intentions, and hierarchical dynamics emerging from interview transcripts, fieldwork notes, or archival documents. Analysing discourse thus means to uncover power dynamics and knowledge hierarchies within text and talk by explicating actors' beliefs or hidden motivations. Differently than grounded theory, where texts are taken at face value, and content analysis, where data is categorised without accessing its second-level meanings, discourse analysis allows the researcher to read between the lines and unpack deeper levels of meaning (Brown & Yule, 1983; Potter, 2004).

One version of this method is named 'critical discourse analysis' (Kress, 1990; Blommaert & Bulcaen, 2000; van Leeuwen, 2009; van Dijk, 2015; Fairclough, 2023). Originally derived from the field of linguistics, it has been extensively adopted in political science, anthropology, sociology, and applied disciplines such as marketing (Shankar et al., 2006; Moufahim et al., 2007; Buchanan, 2008), consumer research (Caruana et al., 2008; de Burgh-Woodman & King, 2013), management (Phillips et al., 2008), and organisation studies (Chouliaraki & Fairclough, 2010). In economics, examples of discourse analysis are extremely rare, as they can only be found in some critical works (Klamer, 1984; Samuels, 1990) and single policy studies (Jermsittiparsert et al., 2014; Berglund et al., 2018).

3. Quantitative versus qualitative economics: an analysis

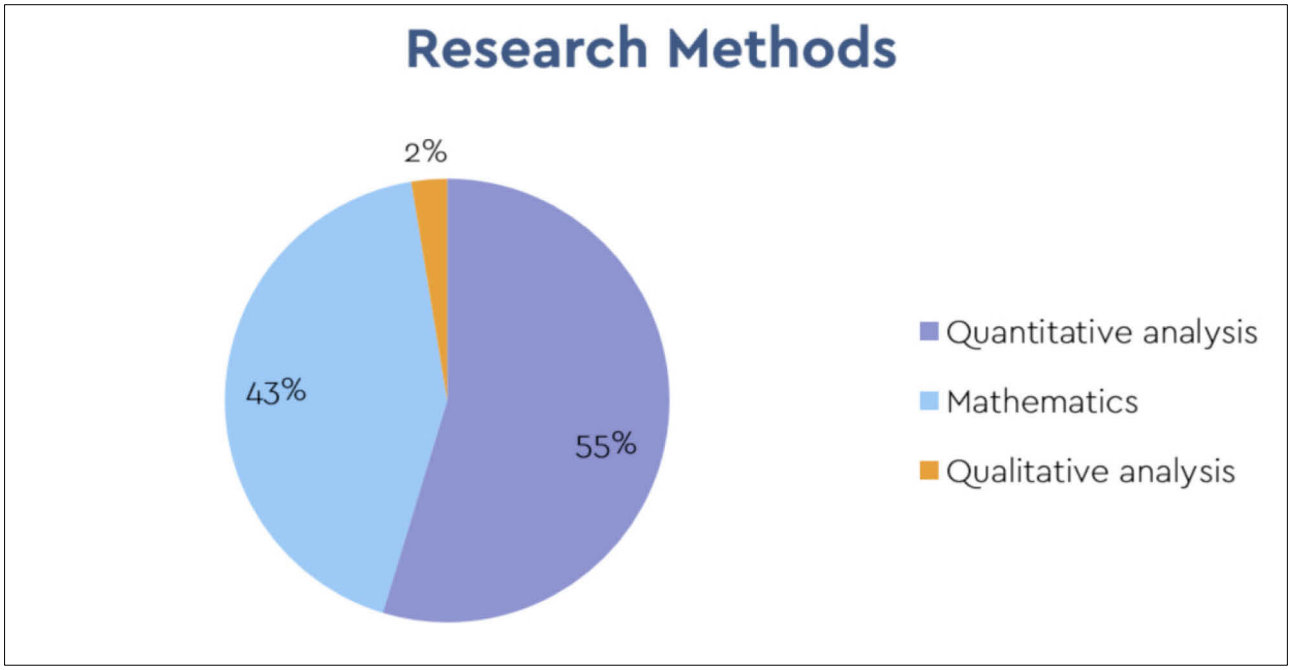
In the previous chapters, a review of the status quo of modern economics, on the one hand, and an account of the use of QRMs in the social sciences, on the other hand, were provided. In particular, Chapter 2 outlined the differences between quantitative and qualitative data collection and analysis. The dominant position of the former and the undermined role of the latter in economics were indeed emphasised (Lenger, 2019; de Muijnck & Tieleman, 2022). That is:

> Mainstream economics is heavily reliant on a narrow range of methods, and many economics departments do not teach philosophy and methodology as part of research training or introduce the postgraduate to a range of possible methods – particularly qualitative methods and more innovative ways of processing data. […] As such, they simply reproduce a focus on a narrow range of technical skills that then become the basis by which research is typically done, because researchers are unaware of alternatives or lack the competency in them (Morgan, 2016, p. 30).

In what seems like a vicious self-fulfilling cycle, economists systematically neglect QRMs under both the teaching and research dimensions.

At the teaching and training level, QRMs do not figure in economics doctoral programs (Starr, 2014, p. 238) neither are included at the undergraduate and graduate levels (Colander, 2008; Basole & Ramnarain, 2016) (see Figure 4). This prevents prospect students to enrol into economics programs and leads to massive rates of dropouts from economics faculties.

Figure 4 – Research methods in economics



Source: Economics Education (2024).

At the research and publications level, qualitative research occupies an extremely marginal position in economics journals (for a review see Basole & Ramnarain, 2016); including only some niches of HE (see Starr, 2014) and small fringes of adjacent fields. This avoids interested scholars from other disciplines approaching economics and incentivises them to discard those research problems that are not easily formalisable in quantitative terms, albeit theoretically or empirically relevant.

3.1. Philosophy of quantitative economics

Economic thinking was subject to philosophical inquiry since its beginnings. During the Classics' era, philosophers like Bacon, Descartes, Newton, and Hume were keen to 'establish a sound basis for the beliefs of their time', against the influence of theology and religion (Redman, 1997, p. 10). As a result, economic and social sciences started developing their own ontological, epistemological, and methodological premises (for an account of the classical economists' epistemological heritage see Redman, 1997; for an account of the different epistemological approaches in the social sciences see della Porta & Keating, 2008, pp. 19-39). These will be examined in this section, which dives into the

debates around economic methodology[82] and the philosophy of economics by exploring its scientific development, the influence of physics and the natural sciences, and the philosophical features of the economic method.

3.1.1. Scientific development

On the one hand, most narratives of economic theory development are linked to a notion of scientific progress (Boumans & Herfeld, 2022), and today's economists are:

> Whig historians who believe that the best of the discipline's knowledge and practices are contained in the current material of the discipline (Weintraub, 2002, p. 267).

> Each alternative methodology for economics would appear to have implicit winners and losers in economic work: the winning economic ideas, those that emerged from the community's work, are exemplars of the right methodology (Weintraub, 2002, p. 259).

Indeed, economists consider their discipline a 'cumulative' science (Boumans & Herfeld, 2022) that develops throughout time by getting progressively better at explaining its objects of analysis. In this perspective, economic theories would affirm themselves by discarding or rejecting the previous ones due to more generalisable results, explanatory power, or contradictory findings adding and extending existing knowledge (Katouzian, 1980; see also Caldwell, 1982/1994, pp. 68-96).[83]

On the other hand, the history of economic thought can be considered 'a tale of discontinuities' where different approaches alternated and established themselves across time as long as 'individual economists, with courage and tenacity, changed the nature of their work' (Weintraub in Parisi & Alacevich, 2009, pp. 282-283, author's translation). These changes were often driven by minoritarian groups of visionary dissidents who successfully developed a new theoretical paradigm by persuading their colleagues of its validity, and convincing them to consider it as 'established' knowledge (Sylos Labini, 2016, p. 11, author's translation).[84] In fact:

[82] Economic methodology does 'provide criteria for the acceptance and rejections of research programs, setting standards that will help us to discriminate between wheat and chaff' (Blaug, 1980/1992, p. 264).
[83] In this view, past economic thinking is either valid theory to be updated, and adjusted by more advanced techniques, or irrelevant frameworks that do not contribute to any research question and policy advancement (Sandmo, 2011, pp. 4-5).
[84] Whereas natural scientists are unlikely to gain much from the history of their disciplines, and the understanding of how their domain knowledge evolved, past ideas and theoretical controversies are of direct interest to economists (Hicks, 1976, p. 207).

> When the natural scientist has come to the frontier of knowledge, and is ready for new exploration, he is unlikely to have much to gain from a contemplation of the path by which his predecessors have come to the place where he now stands. Old ideas are worked out; old controversies are dead and buried. […] Our position in economics is different; we cannot escape in the same way from our own past (Hicks, 1976, p. 207).

Drawing on this assumption, the next sub-sections will explore the philosophy of economic sciences and the influence of the natural and physical sciences on economic thought.

3.1.1.1. Philosophy of science

Behind the different perspectives on economics' scientific development, numerous approaches to the philosophy of science[85] lie. First, one influential framework was formulated by Karl Popper (1934), who considered science as an incremental process of theories' falsification unveiling through a self-correcting cycle of refutation of 'false' conjectures. According to his principle of 'falsifiability', every theory that is not falsifiable is to be regarded as pseudo-scientific; despite not always being, however, metaphysical or useless (Pheby, 1988, pp. 22-23; Hausman, 1992a). In this view:

> Science proceeds by formulations of hypotheses and refutations, through which the boldest hypotheses are ruthlessly subjected to falsification tests (Weintraub in Parisi & Alacevich, 2009, p. 278, author's translation).

Therefore, Popper puts the practice of 'hypothesis testing' at the centre of any scientific discovery by rejecting inductivist approaches. In his perspective, theories can never be proven to be fully true but only shown to be false by a sequence of hypotheses formulation, consequences deduction, and logical predictions whose fulfilment discards (or not) theories' correctness (Redman, 1997, pp. 202-203).

The application of a strictly Popperian view in economics was fostered by those philosophers who developed rules and standards for assessing falsifiability (Klant, 1984) or more sophisticated and flexible approaches to 'falsificationism' (Blaug, 1980/1992).[86] Despite the obstacles of applying it to economics (Hutchison, 1977),[87] economists generally supported, adopted and extended the Popperian approach (de Marchi, 1988; Hausman, 1989, pp. 117-119; for a critique see McCloskey, 1982/1998, pp. 148-150; see also Guala, 2006, pp. 113-124);[88] including Milton Friedman, Tjalling Koopmans,

[85] The 'philosophy of science' seeks to 'reconstruct science and the development of scientific knowledge in a normative way' (Weintraub in Parisi & Alacevich, 2009, p. 273, author's translation).
[86] Discussions on the Popperian falsifiability of economic theories took much economic research astray from other more fundamental issues (Hausman, 1992c; Zamagni, 1994, pp. 7-8).
[87] Following the logical positivists' argument claiming that strict falsifiability criteria did not permit 'sentences expressing affirmative existential propositions into the domain of science', logical empiricists started supporting 'confirmationism' as a better alternative (Caldwell, 1982/1994, pp. 221-223, 231-243).
[88] According to them, without the Popperian view's influence, economics would have remained 'a melange of prescientific musings about social problems wrapped in the language of science, without any real science in evidence' (Weintraub, 2002, p. 262).

Terence Hutchison, Luigi Einaudi, and Fritz Machlup (Parisi & Alacevich, 2009, p. 172).[89] This led to the diffusion of the 'neopositivist' approach in economics, which considers science as 'neutral' to reality and experiments as the best available tool for showing the operational validity and verifiability of hypotheses.[90]

Second, differently from Popper, Thomas Kuhn (1962) sees science as a preconceived view of the world made of intellectual frameworks to which research constantly adapts. In this perspective, knowledge evolves throughout subsequent 'scientific revolutions' and 'paradigm shifts', preceded by 'pre-science' times of crisis where theoretical 'anomalies' let emerge the inability of the established 'normal science' to effectively explain real-world phenomena (Kuhn, 1962; see also Focardi, 2015). By competing between each other, alternative theories finally give rise to a new body of knowledge replacing the previous one (see Caldwell, 1982/1994, pp. 70-79), which provides more satisfactory answers to the anomalies emerged. The 'new paradigm' then establishes itself among the scholarly community as the best way to cope with pending empirical issues (see for instance Pheby, 1988, pp. 37-53), which are ultimately perceived as differently relevant by scientists of the field.[91] This cycle can endlessly repeat itself, underlining the relative dimension of scientific knowledge.

On the one hand, economics' development does not fit with the Kuhnian framework since the single neoclassical theory dominated the last 150 years of economic knowledge. On the other hand, most economics matches Kuhn's ideas on scientific evolution exactly because its research activities take place within the established paradigm and extend it without producing novel findings but simply solving puzzles by adopting anticipated solutions (Caldwell, 1982/1994, p. 71). Similarly, historians conceive the so-called 'marginal revolution', 'neoclassical revolution', and 'Keynesian revolution' in the Kuhnian sense (Blaug, 1972). A loosely Kuhnian vision applied to economic systems was also supported by Hirschman, whose theory of 'frustration cycles' depicted the evolution of the economy going through the cyclical dissatisfaction with current economic systems and the constant oscillation between private-oriented and public-oriented solutions to economic issues (Hirschman, 1982/2002).

Third, Paul Feyerabend was a strong opposer of Popperian philosophy of science. Although his view was criticised for being tautological and unproductive, he had an interesting perspective on scientific development. According to him, facts are essentially theory-dependent, and thus 'the key to scientific advancement is the proliferation of theories' as well as 'the proliferation of hypotheses

[89] Until the 1970s, most economists were positivists, either confirmationists or falsificationists, and implicitly believed in the unity-of-science thesis (Caldwell, 1982/1994, p. 216; for an account of the question of unity see Schurz, 2013, pp. 16-58).

[90] This was criticised by philosopher of science Willard Van Orman Quine, who explained how any statement cannot be true based on its meaning, or simply because a fact corresponds to a phenomenon, an event, a process of reality to which theory refers (Quine, 1951).

[91] They possibly end up regarding the old questions and methods characterising the field as not interesting anymore, and 'incommensurable' with the new paradigm (Guala, 2006, p. 144; see Weintraub in Parisi & Alacevich, 2009, p. 281).

whose results contradict well-confirmed theories' (Caldwell, 1982/1994, pp. 79-85). In this view, in principle, 'anything goes' for the sake of scientific progress (Feyerabend, 1975, p. 28). This extreme and almost anarchist approach actually justifies theoretical pluralism and the need for having multiple theoretical paradigms; a perspective that is increasingly supported by philosophers of economics and advocates of 'pluralist economics' (see for instance Reardon, 2009; Fischer et al., 2018).

Fourth, Imre Lakatos' approach emerges from a critique to Popper and Kuhn's philosophies, representing a synthesis of both (see Blaug, 1975). He did not believe paradigms could be compared between each other and overcame this view by focusing on sets of theories rather than single theories (Lakatos, 1978).[92] By analysing the circumstances for which it is worth to consider them as valuable tools to understand reality (Pheby, 1988, pp. 54-67; Weintraub, 2002, pp. 258-259), Lakatos critically responded to Kuhn and further extended Popper's arguments of ongoing linear scientific development through the so-called 'methodology of the scientific research program' (Lakatos, 1978). A scientific research program is defined as:

> A set of propositions held to be true and irrefutable by those working in the program, associated rules for constructing theories based on those central premises, and rules for excluding, as uninteresting or irrelevant, material outside the purview of the program (Weintraub, 2002, p. 262).

In this perspective, science progress is based upon the advent of alternative research programs having an increasing ability to explain novel facts and excess empirical content (Chase, 1989, p. 1152; see also Backhouse, 1998).[93]

In economics, the 'neoclassical revolution' in Kuhn's term would be seen as the 'neoclassical research program' in Lakatos' perspective. In this framework, economics' hard-core propositions are its founding notions and concepts: namely, the scarcity principle and the criteria for allocating scarce resources, the optimisation and maximisation operations, the perfect competition assumption, and the *homo economicus*' rationality features. Besides constituting the building blocks of economic theory and influencing much economic policy since its beginnings, these resisted almost intact until today, making the neoclassical theory extremely influential for economists' education and training, research work, academic careers, and professional practice (for a discussion of the *homo economicus* see Mäki, 2021).

[92] His approach is best described as 'sophisticated methodological falsificationism' (see Lakatos, 1978), recognising that there is no 'instant rationality' in judging a theory's suitability, and that 'theories do not exist in isolation [but] are part of a larger and dynamic system [within which] hypotheses are added, revised, or deleted in accordance with: the range of problems the research tradition is meant to cover, its success in doing so, the relation of the present body of theories with the evidence, and so forth' (Caldwell, 1982/1994, p. 86).

[93] Hard core knowledge – that is, the irrefutable part of each research program – is accompanied by a 'refutable protective belt', whose alterations can determine the success, or failure, of the research program itself (Caldwell, 1982/1994, pp. 85-89).

Finally, other philosophers of science in the XX century include Pearson, Wittgenstein, Frege, Moore, and Laudan (for an account of the role of modern philosophy in economics see Roy, 1991).[94] Also supported by their theories, economics developed as 'a story of increased content, and increased facility by economists and their allies (demographers, statisticians, etc.) in providing accounts of the world that are useful for description and control' (Weintraub, 2002, pp. 260-261; see also van Staveren, 2015, pp. 420-431).[95] In this process, however, some ideas were progressively lost. It is the case, for instance, of Marxian economic theories, that have been forgotten and relegated to the dustbin of economic thinking by most following economists.[96] Others have been misunderstood and got 'lost in translation' when being transferred from one domain to another, or from theory to practice.[97] Most, however, initiated as smaller ideas before becoming well established notions: it is the case of Paretian utility and the Smithian 'invisible hand', that only appear in short extracts of their respective authors' major works, yet represented the foundational concepts of modern economic theory.

3.1.1.2. Natural and physical sciences

The scientific development of economics was strongly affected by the natural and physical sciences, under both the conceptual and methodological dimensions. Since the classical era, economists have plundered key notions from physics by translating them into mathematical terms (Maris, 2005; for an account of the influence of physics in economics see Raworth, 2017, pp. 111-116),[98] and thus tackled socioeconomic phenomena alike the natural sciences treated physical ones (Redman, 1997, pp. 358-359). Moved by the natural sciences' 'tyranny' (Hayek, 1952/1979) and 'physics envy' (Malinvaud, 1997), economists wanted to make economics a true 'science', despite its 'social' nature (Friedman, 1953, p. 4). Drawing upon their fascination towards methodological rigour (Guerrien, 1997; Gillies, 2012; Sylos Labini, 2016, p. 94), indeed, they dogmatically imitated the natural and physical sciences' techniques and tools (Mirowski, 1989, pp. 354-395; Zamagni, 1994, p. 6).

[94] They have also been informing those conceptual frameworks that were developed by economists Wesley Clair Mitchell, Arthur Burns, Anna Schwartz, Simon Kuznets, James Meade, Colin Clark, Edward Denison, Moses Abramovitz, Trygve Haavelmo, Lawrence R. Klein, Herman Wold, Abraham Wald, and Tjalling Koopmans, for instance.
[95] A key role in this sense was played by national and international organisations such as the National Bureau of Economic Research, Rockefeller Foundation, Cowles Commission, Bureau of Labour Statistics, International Labour Organisation, and Organisation for Economic Cooperation and Development.
[96] Despite being based upon Ricardo's and Smith's ideas and most classical political economy, Marx's theories have been refuted without a proper assessment of its premises (for a discussion see Saad-Filho, 2001).
[97] Scholars studied how new ideas and practices go through important changes, in terms of their original meanings (Star & Griesemer, 1989; Ravin & Leacock, 2000; Rakova, 2003), when being adapted from one disciplinary context to another (Sahlin-Andersson & Sevón, 2003; Czarniawska-Joerges & Sevón, 2005), or transferred from theory to practice (Morris & Lancaster, 2006; McCabe & Russell, 2017).
[98] In fact, reformulating economics in mathematical terms was a necessity that especially developed from the marginalist outlook towards the natural sciences.

Arguably 'the importation of physical metaphors into the economic sphere has been relentless, remorseless, and unremitting', and caused the 'impasse of neoclassical economic theory' (Mirowski, 1989, p. 395). Therefore:

> [Economists'] propensity to imitate as closely as possible the procedure of the brilliantly successful physical sciences […] may lead to outright error. It is an approach which has come to be described as the 'scientific' attitude – an attitude which […] is decidedly unscientific in the true sense of the word, since it involves a mechanical and uncritical application of habits of thought to fields different from those in which they have been formed (Hayek, 1989, p. 3).

> The subject matter of economics, a *social* science, is intrinsically different from the subject matter of physics, a *physical* science. […] The physical sciences are, relatively speaking, straightforward endeavours. They escape the murky intellectual problems associated with subjective evaluation by simply assuming they do not exist. […] The straightforward application of *physical* scientific techniques to social concerns can lead to egregious errors (McKenzie, 1983, p. 3, emphasis in original).

Furthermore, economics studies human actions and invokes the reasons and motives of human agents (Blaug, 1980/1992), who – unlike physical objects – 'are endowed with freedom of choice and the ability to interpret reality according to their own ends' (Guala, 2006, p. 204, author's translation).

The process of importation from physics to economics made the latter (1) paradoxically more abstract and detached from the real, 'physical' world (for a discussion see Lantner, 1997; Pilkington, 2016, pp. 281-321), (2) increasingly separate from the social sciences (Sandmo, 2011, p. 93), and (3) professionally less reputed than its natural and physical counterparts (Maris, 2005).[99] However, this tendency was not homogenous; with some concepts and methods being more influential than others. First, Newtonian physics and particularly the Newtonian method (Newton, 1729) had been already adopted by Smith (Blaug, 1980/1992, p. 52), and informed the framework on which most economic and social sciences' problem-solving is currently based (Redman, 1997, pp. 135, 207-258).

Second, the thermodynamics' energy model influenced neoclassical economic theory through the concept of 'equilibrium' (see Mirowski, 1989, pp. 193-275). Building upon the notions of balance and stability derived from the Enlightenment's order of society[100] (Redman, 1997, pp. 141-142) and rational mechanics (see Weintraub in Parisi & Alacevich, 2009, pp. 275-276), this notion ultimately made economists study markets and actors much alike physicists study fluids and particles (Ackerman

[99] Since contemporary economists' educational background is deeply rooted in physics' heritage, they anachronistically believe in economic determinism, causality, and natural stability; moreover, they are seen as 'immigrants trying to make their fortunes with economic doctrine after having been expelled from the field of physics or other disciplines' (Maris, 2005, p. 31, author's translation).

[100] Its introduction was initially aimed at keeping an 'equilibrium' among social classes, and thus limit the threat of social upheavals by the working poor (Tyrrell, 1969; Wise & Smith, 1989).

et al., 2004; Boland, 2017; see also Sharpe, 2023, pp. 92-94). In fact, Walras' (1874/2010) GET does equate celestial bodies and universal gravitation with economic agents and market exchange forces, respectively (p. 374; Scott, 2018, pp. 524-525); and Fisher (1892) takes analogies from the objects of thermodynamics (particles, space, energy) to describe economic systems (individuals, commodities, utility) (pp. 85-86).

Third, utility theory possibly originated from the physical law of 'inverse proportionality' and the concept of 'potential energy' in classical mechanics (Mirowski, 2002). Grounded upon Bentham's 'utilitarianism', the concept of 'utility' draws from economists' attempts to assess individual feelings and motives. That is, Jevons (1871/1879), Pareto (1909), and Edgeworth (1881) all drew on physics' measurements of energy and heat as a reference point for economics, where:

> A unit of pleasure or of pain is difficult even to conceive; but it is the amount of these feelings which is continually prompting us to buying and selling, borrowing and lending, labouring and resting, producing and consuming; and *it is from the quantitative effects of the feelings that we must estimate their comparative amounts* (Jevons, 1871/1879, p. 12, emphasis in original).

> We cannot count the golden sands of life; we cannot number the "innumerable smile" of seas of love; but we seem to be capable of observing that there is here a greater, there a less, multitude of pleasure-units, mass of happiness; and that is enough (Edgeworth, 1881, pp. 8-9).

The idea of 'ordinal utility' (see Beckerman, 2011, pp. 52-57; Moscati, 2019, pp. 49-68) allowed to quantify the individual needs by assuming the capacity of economic actors to compare and rank their preferences for different commodities (Scott, 2018, p. 524; Moscati, 2019, pp. 69-117).[101]

Further elaborated by Walras (1909), the concept of 'subjective utility'[102] ended up underlying microeconomic theory and became:

> The basic factor explaining prices, consumer behaviour, the demand for commodities, market equilibria, bilateral exchanges, and […] a key variable in the evaluation of the efficiency of the economic allocation of goods (Moscati, 2019, p. 1).

Its mathematical formulation triggered a methodological escalation, among economists, to measure 'psychico-mathematical facts' (Walras, 1909, pp. 330-341) and thus 'objectively' quantify consumer

[101] The idea of 'diminishing utility' was formulated by Bernoulli's solution to the so-called 'St. Petersburg paradox', and it forms the basis of today's consumption theory in economics (Moscati, 2019).
[102] Although physics apparently does not have issues of subjective measurement, some physicists speculate that 'after all, rocks, mountains, and electrical currents may […] have a subjective capacity' (McKenzie, 1983, p. 3).

satisfaction (see Moscati, 2019, pp. 15-24).[103] Despite Hicks (1939) had claimed the independence of standard value theory from the measurability of utility, the latter soon became the only scope to which economists were devoted (Frisch, 1932; for an account of the quantification of economics see Koyré, 1968; see also Porter, 2001; Moscati, 2019, pp. 117-138);[104] and the established theory of value still relies upon the 'emulation of physical explanation and their resonance with the primal metaphors of body/motion/value' (Mirowski, 1989, p. 396).

Fourth, economists' obsession towards quantitative measures is another feature that has been inherited from mechanical physics (Hossenfelder, 2018).[105] The 'necessity to mould concepts in such a way as to be able to introduce measurement' (Volterra, 1901, p. 442, author's translation), in fact, contributed to economics being increasingly prone to 'accurate measurements and observations and modelling strategies' (Weintraub, 2002, p. 38). However, the theoretical neglect of any problem that cannot be dealt with in mathematical terms led economists astray. Either mistranslated or not detected at all by quantitative techniques, some qualitative factors simply do not find place within the process of economic analysis – the formulation of laws, the deduction of logical relationships, the derivation of policy implications, and their comparison with initial conditions (Scott, 2018, p. 518).

Nevertheless, an important distinction underlies the uses of mathematical language made by physicists and economists. While the former correctly adopt mathematical and statistical outputs as 'theorems about mathematical objects and statistical tests' rather than scientific findings *per se*, the latter mistakenly take over 'their theorem-proving intellectual values' (McCloskey, 1982/1998, p. 189). When blindly applied without reflecting upon their fundamental limitations and philosophical implications, quantitative methods can easily lead to the point where even poor analytical arguments become indisputable because expressed in algebraic vest (Zamagni, 1994; for the rhetorical analysis of economics see McCloskey, 1982/1998, pp. 3-19). Without a solid theoretical framework, these risk steering economists towards unscientific findings 'that are in fact determined by *a priori* assumptions (or by an ideological bias) which, more or less explicitly, have been adopted in the analysis' (Sylos Labini, 2016, p. 59, author's translation, emphasis in original).

Fifth, quantum mechanics also influenced economic thinking. The so-called 'chaos theory' (Stewart, 1989) explains the behaviour of gravitational bodies as being 'deterministically chaotic': that is, 'a small change in the initial conditions produces a large change in position and velocity when

[103] This was originally made possible by Walras' concept of the *numéraire*, the numerical value of objects that introduced a form of dimensionality in economic theory (for a discussion see Schmitt, 1986).
[104] Today, the sub-fields of *happiness economics* and *economics of wellbeing* are entirely devoted to measure some forms of subjective utility, in order to inform welfare policies.
[105] Under the belief that 'Mother Nature was elegant, simple, and kind', theoretical physicists soon fell into the trap of the mathematical beauty and aesthetical judgment (Hossenfelder, 2018, p. xi).

the system evolved for a sufficiently long time' (Sylos Labini, 2016, p. 21, author's translation).[106] Later echoed by the 'Copenhagen interpretation', quantum physics informed (1) economic modelling and forecasting techniques (Hicks, 1986; see also Buchanan, 2013), (2) the need to study processes in traditional equilibrium analysis (Zamagni, 1994, pp. 9-14), and (3) the use of probability theory and 'fractals' in stock market fluctuations to detect patterns in seemingly irregular structures, such as share prices' trends (Black & Scholes, 1973; Mandelbrot, 1982; see Maris, 2005, p. 55; Sylos Labini, 2016, p. 103).[107]

Finally, the natural sciences equally affected the economic theory development. For instance, evolutionary economics draws on the biology's notions of 'adaptivity' and 'survival modes' in order to study market actors' behaviour and economic systems' transformation (Boulding, 1991; Hodgson, 1996).[108] Similarly, complexity studies conceive economic systems as complex entities whose agent-based behaviour is analysed by computational models inherited from the biological sciences (Focardi, 2015, pp. 8-9). Lately, new streams of research in other HE schools have been studying market change dynamics without relying upon 'stable equilibrium' mechanisms (Carter, 2011; Fagiolo & Roventini, 2012; Cogliano & Jiang, 2016; Nikiforos & Zezza, 2017; Proctor, 2023; see also Sharpe, 2023).

3.1.1.3. Economic sciences

Until the XVII century, science and philosophy were jointly seen as allies in the 'search for universal laws of nature that remained true over all of time and space' (Wallerstein, 1996, p. 3). Towards the end of the XVIII century, however, the natural sciences imposed themselves in controlling knowledge about natural phenomena; yet, there was no consensus on whether arts, philosophy, or the humanities were meant to represent the rest of human wisdom.[109] In this dynamic terrain, the social sciences were born as:

> The attempt, full-blown since the sixteenth century, and a part and parcel of the construction of our modern world, to develop systematic, secular knowledge about reality that is somehow validated empirically (Wallerstein, 1996, p. 2).

[106] Named the 'butterfly effect', the deterministic amplification of initial uncertainty on the systems' evolution over time postulated the limited capacity to predict future events, regardless of the precision of initial measurements (Lorenz, 1969a, 1969b), and fostered the adoption of probability in the study of physical phenomena (Pilkington, 2016, pp. 281-321; Sylos Labini, 2016).

[107] As a result, Fourier's 'heat equation', describing thermodynamic equilibrium, influenced economics across all its main developments: it started off the theory of equilibria by Walras, led to the results of Arrow and Debreu, and finally returned in the formula of Black and Scholes at the end of the last century.

[108] A key concept in this sense is that of 'punctuated equilibria': namely, long periods of time separated by relatively short and sudden change points (Mokyr, 1990).

[109] Since there was no distinction between the philosophy of the natural sciences and the philosophy of the social sciences, the philosophy of science that economists know 'was written with the natural sciences, and particularly physics, in mind', and 'few economists keep up with developments in the philosophy of science' (Caldwell, 1982/1994, pp. 3-4).

In the XIX century, knowledge was increasingly divided into *certain* and *imaginary*, and sub-domains of human inquiry emerged: history, sociology, political science, anthropology, and economics. Albeit institutionally part of other faculties, namely philosophy and law, the field of 'political economy' was then naturalised and universalised.

Specific criteria defining 'science' and 'pseudo-science' eventually developed. Albeit without an unanimous definition of the former, there was enough consensus on how to distinguish it from the latter. First, logical consistency represents a key premise to evaluate any scientific method,[110] which arguably 'concerns a branch of applied logic' and 'has as its object the nature of the logical processes appropriate for the study of a given discipline' (Mirante & Baranzini, 2013, p. 5, author's translation). Although the use of mathematics may donate a veil of rigour to scientific claims, the former is neither necessary nor sufficient to achieve the latter: namely, logics does not require mathematics to express scientific ideas,[111] and vice versa, using mathematical language does not imply logical consistency.[112] Nonetheless, economists consider mathematics as a means to show, prove, and legitimise their claims beyond philosophical speculation (Benetti & Cartelier, 1997), and they believe that 'economic theory is mathematical analysis' while 'everything else is just pictures and talk' (Lucas, 2009, internet).[113]

Second, real and observable phenomena upon which to build empirical relationships shall be found. That is, scientific laws must be formulated in empirically verifiable form implying a degree of reliability (Sylos Labini, 2016, p. 4). If some stressed economics' empirical nature (Hutchison, 1956; for a discussion of the empiricist program in economics see Guala, 2006), others noticed the absence of 'unambiguously interpretable' tests (Blaug, 1980/1992). In fact, economists are detached from the real world, often providing 'a diaphanous fairytale portrait of economic life' (Clower & Howitt, 1997, p. 30; see also McCloskey, 1982/1998; Krugman, 2009). Based on unrealistic theoretical assumptions and mathematically sophisticated techniques, economic models 'have tended to become more and more remote from the reality of the economic world in which we live' (Kirman, 2018, p. 104), and are indeed 'difficult to use when confronting real-world data' (Larsen, 2014, p. 64).[114] In fact, 'the

[110] However, logics alone is not enough. For instance, so-called 'scholasticism' was a totally logical discourse, that is no longer accepted in scientific communities, and 'hydrodynamics' was built through perfectly deductive propositions, albeit without any empirical relationship with real phenomena (Maris, 2005).
[111] Whereas logics is a branch of philosophy, mathematics is not a science itself, but rather a formal discipline that serves as a language for expressing relationships between the variables characterising real phenomena.
[112] Any argument can be logical, robust, and scientific, albeit not expressed in mathematical form; as a result, the level of 'mathematisation' of a discipline is not necessarily linked to its scientific nature, and the 'scientific quality' of economic arguments is independent from its formalisation (Maris, 2005, p. 26, author's translation).
[113] Despite its key role in providing scientific arguments, logics was underestimated by economists, and displaced by the blind use of mathematical and statistical techniques. To date, only post-Keynesian approaches are still grounded upon the logical analysis of economic systems (see for instance Bailly et al., 2017; Cencini, 2023).
[114] The standard econometric approach often leads to the wrong interpretation of statistical data for economic policy (for a critique of statistical significance see McCloskey, 1982/1998, pp. 112-138; see also Ziliak & McCloskey, 2008).

mathematisation of the discipline was perhaps the crucial turning point when economics began to become something entirely other to the study of the actual economy' (Pilkington, 2016, pp. 3-4).

Third, any science should be able to formulate general propositions about the properties of its phenomena and the relationships among their key variables (Hicks, 1986). However, the existence of economic propositions that are comparable to scientific 'laws' is debated. In fact:

> Any hypothesis is subject to other things being held constant and these other things are numerous and not always well specified; there are no well-attested, universal laws in economics and what general laws there are turn out to be statistical laws or tendencies lacking universal constants; to test a theory we must construct a model of the theory and, unfortunately, the same theory may be represented by a variety of models (Blaug, 1980/1992, p. xiv).

> In physics and engineering people are interested in how a theory matters in the world, and they have good ways of finding out, chiefly observation and simulation (not statistical significance). By contrast, nothing scientific comes from the theorems from the departments of Mathematics or Statistics or Economics, for the good reasons that (1) the set of theorems is practically unbounded and (2) *statistical* significance has practically nothing to do with *scientific* significance (McCloskey, 1982/1998, p. 189, emphasis added).

Whereas physical theory building is a linear process entailing the formulation of hypotheses and laws to be then tested via experimental evidence (Feynman et al., 2011), in the social sciences generalising empirical observations is a more complicated task.

Once these basic conditions are met, more specific and technical criteria are meant to evaluate scientific standards. In particular, 'external validity' assesses the applicability of research findings in other contexts, 'internal validity' measures the robustness of cause-effect relationships, and 'construct validity' gauges the capacity of the conceptual framework to capture what is not directly measurable (Shadish et al., 2002).[115] For historical, political, and philosophical reasons, most economists have been prioritising the former against the latter (Helper, 2000). That is:

> The ability to identify trends over time and make cross-sectional comparisons; the potential for identifying correlations that may identify associations among critical variables and that raise questions of causality and covariant changes; the potential for estimating prevalence and distributions within population areas; and the credibility of numbers in influencing policy-makers (Pickbourn & Ramnarain, 2016, p. 75).

Until the advent of experimental economics, economists have thus emphasised 'representativeness' and 'replicability' over other scientific criteria.

[115] Indeed, construct validity serves as a background for evaluating the translation of intangible factors into numeric form, for quantitative analysis.

Following the aforementioned 'empirical turn' (Angrist & Pischke, 2010; Hamermesh, 2013), economics faced a 'causal identification revolution' where the increasing availability of quantitative data led scholars looking for causal inference through the use of experimental techniques (Héritier, 2008; Jiménez-Buedo & Russo, 2021).[116] The 'experimenting' society was born, with experiments conceived as an objectivist solution to the ultimate problem of adjudicating contentious causal claims (Campbell, 1991) in order to inform 'evidence-based' policy making. Although critics warned against the incautious use of experimental evidence, highlighting the need for solid theoretical backgrounds and stressing the obstacles and limits deriving from measurability issues (Jiménez-Buedo & Russo, 2021), economists blindly spoused the religion of causality, generalisability, and policy relevance.

Finally, two additional and opposite views complement the debate on the scientific status of economics (for a discussion see for instance Duménil & Lévy, 1997). On the one hand, some post-Keynesian economists consider it an exact science[117] governed by precise laws not to be derived from other disciplines (Cencini, 2015, p. 8),[118] and thus valid regardless of economic theories themselves (Weintraub in Parisi & Alacevich, 2009, p. 295). That is:

> Absolute truth is not experimental, but aprioristic and beyond contradiction. So the laws of motion and production do not derive from the observation of facts; on the contrary, they are imposed on facts and govern them. In classical science, laws are framed not through the operation of men's free will, but by virtue of the scientist's faculty of discovering, spontaneously, through the exercise of abstract thought, the hidden laws of the physical and economic worlds (Schmitt, 1986, p. 122).

In this sense, standard economics' attempts to explain human behaviour or predict future trends are seen as time-wasting and useless conjectures, leading economists astray from the sound formulation of production laws (Schmitt, 1986).[119]

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[116] A 'conceptual overload' and major inconsistencies in the language of validity among social scientists were highlighted (Jiménez-Buedo & Russo, 2021), to overcome the standard trade-off and dyad between internal and external validity that replaced the importance of construct validity, for instance, when designing experiments (Jiménez-Buedo & Miller, 2010; Nagatsu & Favereau, 2020; Diener et al., 2022; Esterling et al., 2023).

[117] In fact, 'the reasons for assimilating political economy to a hard science [...] have less to do with the *formal rigour* or degree of elaboration of the propositions upheld than with the *nature of the approach characterizing the theory of prices and value*, [...] that lies at the origin of the mathematization of economics, and not the reverse' (Benetti & Cartelier, 1997, p. 204, emphasis in original).

[118] A valid example is the accounting principle of 'double-entry bookkeeping', adopted when registering stocks and flows: despite being a governing principle of both micro- and macro-economic activities (Maris, 2005, p. 69; Cencini, 2015, pp. 6-7), standard economics does not deal with it.

[119] In this view, even quantum mechanics would be considered a non-exact science, due to its overreliance on probability calculus and inferential statistics (Prosperi, 1971, p. 55; see also Pilkington, 2016, pp. 281-321; for an account of quantum mechanics see Hossenfelder, 2018, pp. 119-137).

On the other hand, adjacent fields such as *science and technology studies*[120] see the economics discipline as:

> A human activity in which many individuals are engaged in a complex, locally situated, and contingent conversation, where the rules for community membership are fluid and conventions of discourse are communally well-understood (Weintraub, 2002, pp. 268-269).

Along these lines, many believe that:

> The retention of the neoclassical core and the continued insistence on its mastery as the prerequisite for being considered competent in this field means that aside from driving away many of the brightest young minds, economics can never hope to become a science (Eichner, 1983, p. 518).

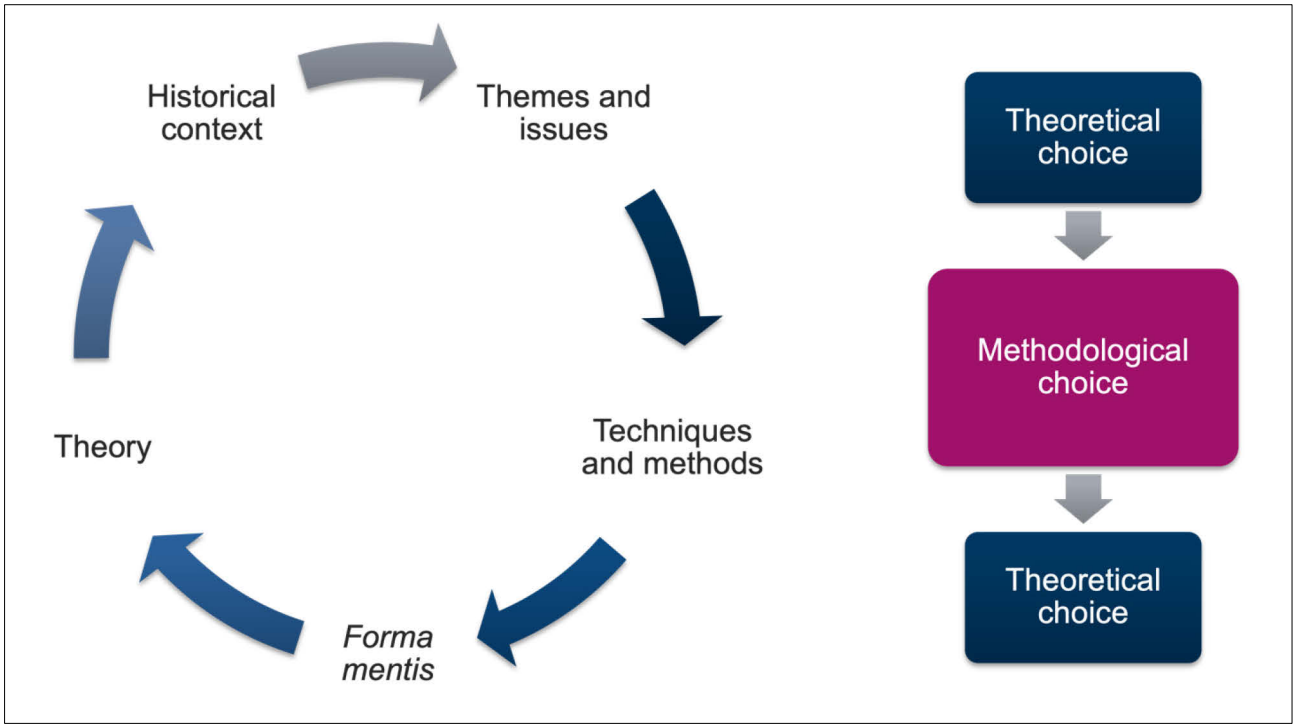
In the following section, this argument is further developed by looking at the philosophical premises of the standard economic method.

3.1.2. Economic method

Economic theory is strongly linked with economic method; namely, the development of the former depends upon the choice of the latter, and vice versa (see Figure 5).[121] On the one hand, most methods are *prescriptive*, limiting the range of acceptable theories (Caldwell, 1982/1994) and restricting that of empirical questions to be posed (Basole & Ramnarain, 2016). That is, 'advances in knowledge that are too strongly rooted in what we already know delimit what we can know' (Gioia et al., 2013, p. 16). On the other hand, methods influence theoretical frameworks by affecting the type of data and variables to be included in models themselves (Szostak, 2016).[122]

[120] Looking at economics' practices, communities, and interconnections with other disciplines, this field emphasises the diffusion, promotion, and transformation of economic ideas, as operated by academic or professional economists (see for instance Bellas & Kosnik, 2019; Fontana et al., 2019).
[121] The reasons underpinning methodological choice include: the problem addressed, the research objective, the type of research question, and the advantages of the method itself (Jemna, 2016).
[122] Arguably, it is 'in the methodological choice [that] stands the ultimate reason for the devastating marginalisation from neoclassical economics of all those issues – cultural, historical, legal, of social justice – that in the motion of the planets find no counterpart' (Ventura, 2016, internet, author's translation).

Figure 5 – Methodological choice



Source: author's elaboration.

This double-sided relationship is mediated by the fact that 'the way economists think about economic processes, the kinds of questions they worry about […] are all strongly shaped by their social and intellectual trajectory, and by the national context in which they operate' (Fourcade, 2018, p. 6). And vice versa:

> Economics cannot have a useful existence separate from philosophy. For better or for worse, the ideas of economists have always had [...] a considerable influence on the course of historical events. It is for this fundamental reason that the economist must again come to terms with the philosophical dimension of his object and method of study (Zamagni, 1994, p. 3, author's translation).

Since this affects the chosen method, the researcher's mindset in approaching phenomena, and theory building itself, methodology should always comply with the object of research (Jemna, 2016, p. 156), its historical context, and relevant questions.[123]

However, the study of economic method 'has little place in the training of modern economists' (Blaug, 1980/1992, p. xxvii). Notably:

[123] For instance, the chosen method prevents asking those research questions that are of marginal concern to data collecting agencies (Basole & Ramnarain, 2016).

> While scholars in other disciplines […] have been traveling an arduous road on which epistemological and methodological concerns are addressed, economists, particularly "mainstream" academics in the United States, do not often engage in such discussions. Instead, most discussions within economics about appropriate research techniques have surrounded issues of robust statistical results, econometric specifications, etc. (Emami & Olson, 2002, p. 142).

Each research method having its own philosophical assumptions (Bryman, 1984) and specific scope of scientific endeavour (Zamagni, 1994, pp. 2-3), the methodological choice should be reflexive. This presumes a degree of awareness over (1) the ontological and epistemological assumptions underlying methodological choice (Bryman, 1984; see also Pickbourn & Ramnarain, 2016), (2) the main features of research approaches and outlooks, and (3) the currents of thought surrounding a research question or a method of analysis. The following sub-sections aim at filling this gap.

3.1.2.1. Methodology and powers

Methods of scientific inquiry can be distinguished, first, into 'rationalist' or 'hypothetico-deductive' on the one hand, and 'empiricist' or 'inductive' on the other hand (Caldwell, 1982/1994). Whereas the former considers knowledge acquisition as a deductive, value-free, and generalisable process, the latter sees it as an inductive, value-laden, and context-dependent effort. Drawing particular statements from a general one, the deductive approach to science building is about 'framing a hypothesis about the character of a law; deducing consequences from the law; and observing whether the consequences agree with the facts' (Redman, 1997, pp. 199-200). The inductive process, instead, is about 'reasoning from the particular to the general or with the inference of laws from observations' (Redman, 1997, p. 160). Similarly to other empiricist approaches, it also stresses the role of *a posteriori* knowledge and the verifiability of hypotheses.[124]

Indeed, deduction 'is based on premises from which the conclusions then necessarily follow', induction 'is based on premises that are then exceeded by the conclusions, but where the conclusions are not stated as an explanation from the premises', and 'abduction' is:

> A form in which the conclusions also exceed the premises, but where an inference is also made to the best explanation of the situation under scrutiny. [It] is less 'rigorous' in the formal sense of a logical construct and in the range of possible ways one might distinguish between explanations. It is, however, a closer fit with the complexity of an open system, since it embraces the possibility of irregularity and of many forms of potential evidence, and thus also the use of many different methods, as deemed appropriate (Morgan, 2016, p. 30).

[124] Being closely related with some form of realism and 'positive economics', these are often associated with middle- and low-range theories rather than grand-theories of the economy.

Underlying the critical realist approaches and supporting a relativist epistemology, abduction informs much HE (for an account of abduction see Schurz, 2013, pp. 49-58). Moreover, it is consistent with 'the view that knowledge of economic events is historically contingent' and 'always in the process of being created, even for past events' (Lee, 2016, p. 38); as 'the contingencies of time, and place, and experience' are 'not independent of the ideas that are expressed in time, in place, and in experience' (Weintraub, 2002, p. 270).

Although the discussions on methodological issues represented an important part of classical economists' scientific work (for a review of classical economics' methodology see Redman, 1997),[125] neoclassical economists unreflexively followed the same hypothetico-deductive method. Through the aid of 'unrealistic but useful' mathematical modelling,[126] they build 'a first approximation' of reality (Guala, 2006, p. 9, author's translation; see also Pilkington, 2016, pp. 95-102); formulating an abstract representation of the phenomenon (Corti, 1989; Guala, 2006, pp. 57-68) and isolating its main factors to establish the causal relationships determining its fundamental laws (for an account of causality in the social sciences see Héritier, 2008; see also Schurz, 2013, pp. 382-406).[127]

Lately, an empiricist tendency triggered the adoption of experiments in economics, affirming the benefits of inductive methodology. Despite suffering from a 'strong "objectivist bias" against the qualitative/interpretive aspects of research in favour of the quantitative/predictive aspects' (Lavoie, 2011, p. 93), economists increasingly embraced empirical evidence (Angrist & Pischke, 2010). Being confirmationists, instrumentalists, or falsificationists, most economists foster an econo-centric culture where quantitative techniques are considered the 'gold standard' of economic research, and represent the dominant, if not sole language of the profession.[128]

Second, research methods can also be characterised by their power in explaining or predicting their object of analysis (Bryman, 1984). While 'explanatory power' is defined as the extent to which theories explain past and current phenomena (Caldwell, 1982/1994, p. 175), 'predictive power' is the extent to which theories can predict future events based on their patterns over time (see for instance Buchanan, 2013). Whereas classical economics' and Keynesian theories' focus was the former (for an account of classical economists' philosophy of science see Redman, 1997), the marginalists were

[125] Many of the methodological problems debated by classical economists are still present today: questions of scope, the realism of assumptions, the role and limits of history, mathematics, and statistics, semantics, testing, the conflict between facts and theory, and problems of causation and generalisation (Redman, 1997, p. 5).
[126] Constituting the 'theory' of the phenomenon, models offer formal representations of the notions about a phenomenon, and aim at simplifying complex reality into a set of assumptions about its essential elements in order 'to understand what will happen in particular situations and to focus on the most important mechanisms of the system under consideration' (Mirante & Baranzini, 2013, p. 52, author's translation).
[127] Whereas in classical and Keynesian economics the relationship between model variables were represented by *causal* chains of economic events, the marginalist theories focused on *simultaneous* relationships between variables (Mirante & Baranzini, 2013, pp. 13-18).
[128] Nonetheless, mathematical modelling entails conceptual simplifications leading to theories that do not capture complex phenomena and structural forces (for an account of the use of mathematics in economics see Sandmo, 2011, pp. 447-450).

rather devoted to the latter, due to their positivist orientation assuming that 'knowing' is intrinsically associated with 'foreseeing' (Parisi & Alacevich, 2009, p. 169, author's translation; for an account of explanatory and predictive power in economics see Rodrik, 2015).

Although in ancient times predictions were naively adopted by religion to look forward fruitful agricultural seasons (Sylos Labini, 2016, p. 16), since the XX century they represented a key objective of theory validation (Blaug, 1980/1992; for a critique of predictions in economics see McCloskey, 1982/1998, pp. 150-151; see also Guala, 2006, p. 9). That is, economists started considering economic forecasting as the only aim worth of scientific effort, regardless of theoretical assumptions' realism (Friedman, 1953; Pheby, 1988, pp. 81-94; see also Guala, 2006, pp. 69-82). In this view, so-called 'critical assumptions' play a significant role in building informative models, despite their unrealistic background (Varian, 1997; see also Rodrik, 2015, pp. 26-29);[129] and economic theories are, at best, 'adequate' to predict certain consequences (Caldwell, 1982/1994, pp. 178-179).[130]

However, this emphasis on predictive power eventually outgrew the actual understanding of economic actors' behaviour (for a critique of financial models' predictive power see Gürkaynak & Tille, 2017)[131] and restricted the set of methods adopted by economists.[132] Today:

> Economists defend this retreat into extreme abstraction by saying they do it for the sake of "simplicity". I understand that sometimes it is necessary to simplify in order to see things clearly. But when "simplification" means ignoring essentials, it goes too far (Yunus, 1998/2009, p. 55).

To avoid that, heterodox economists shifted their focus back to explanatory power (for a discussion of explanatory power in economics see Lawson, 2003, pp. 79-109), thus accepting the complexities of economic reality without reducing it 'to neat mathematical models and mathematically calculable market equilibriums' but taking 'a more realistic view of both human behaviour and social processes and structures' (van Staveren, 2015, p. 7).

Finally, some argued that economics does not have neither explanatory nor predictive powers (Samuelson, 1947). Since economic phenomena are connected to changes in knowledge that are by default unpredictable due to human factors such as expectations, uncertainty, and ignorance (Pheby, 1988, pp. 127-128; Shackle, 1972; see also Focardi, 2015), economics would at best detain *descriptive* power in outlining valid and faithful pictures of the economy. Based on this debated idea, Samuelson

[129] However, realistic assumptions are needed to explain economic phenomena truly and fully, without neglecting actors' motivations in the first place (Basole & Ramnarain, 2016, pp. 138-139; for a discussion see Sharpe, 2023, pp. 95-98).
[130] An 'economic theory' is defined as 'a set of hypotheses about the functioning of parts or the whole of the economic system' (Sandmo, 2011, p. 9).
[131] The focus upon explanatory or predictive power is also a political and ideological argument: although economic policy often requires forecasting, there is no reason why economists should consider it as the best rationale of economic research.
[132] Modern economics rests on a set of precise hypotheses and assumptions, leading to theses and policy conclusions that are mathematically sound and internally consistent, yet not always logically coherent or empirically meaningful.

(1947) extended Bridgman's (1927) perspective, that considered concepts as nothing more than sets of operations, and highlighted the role of 'operationally meaningful theorems' for economic analysis (Samuelson, 1947, pp. 3-4).

3.1.2.2. Ontology and epistemology

Behind every methodological approach, specific ontological and epistemological backgrounds do lie. To understand economic method it is thus important to examine its ontological and epistemological premises, and shared definitions of the key terms explaining these differences shall be outlined. First, ontology is the study of 'being' and what exists in the human world. It is defined as:

> The study of the nature of the world. It asks questions such as: is there a world 'out there' that we can study objectively, or do we actively construct reality? Does the world consist of individual parts that relate to one another, or is it a systemic whole? It also questions whether the economic world fundamentally differs from the natural world (de Muijnck & Tieleman, 2022, p. 240).

Ontological questions concern what is 'real' and what is the target object of study. In economics, they look like: What economists shall find out? What is their core object of analysis? What is economics, and what makes something an 'economic' issue? If economists study the economy, then: What parts an economy consists of? What are the actors in an economy? Which is the nature of their relationships and the driving forces of their behaviour? Which are the mechanisms and dynamics at play? Are they universal or path dependent?

The answers to these questions, in turn, represent the 'ontological statements', or 'ontological presuppositions' (Mäki, 2001). These are:

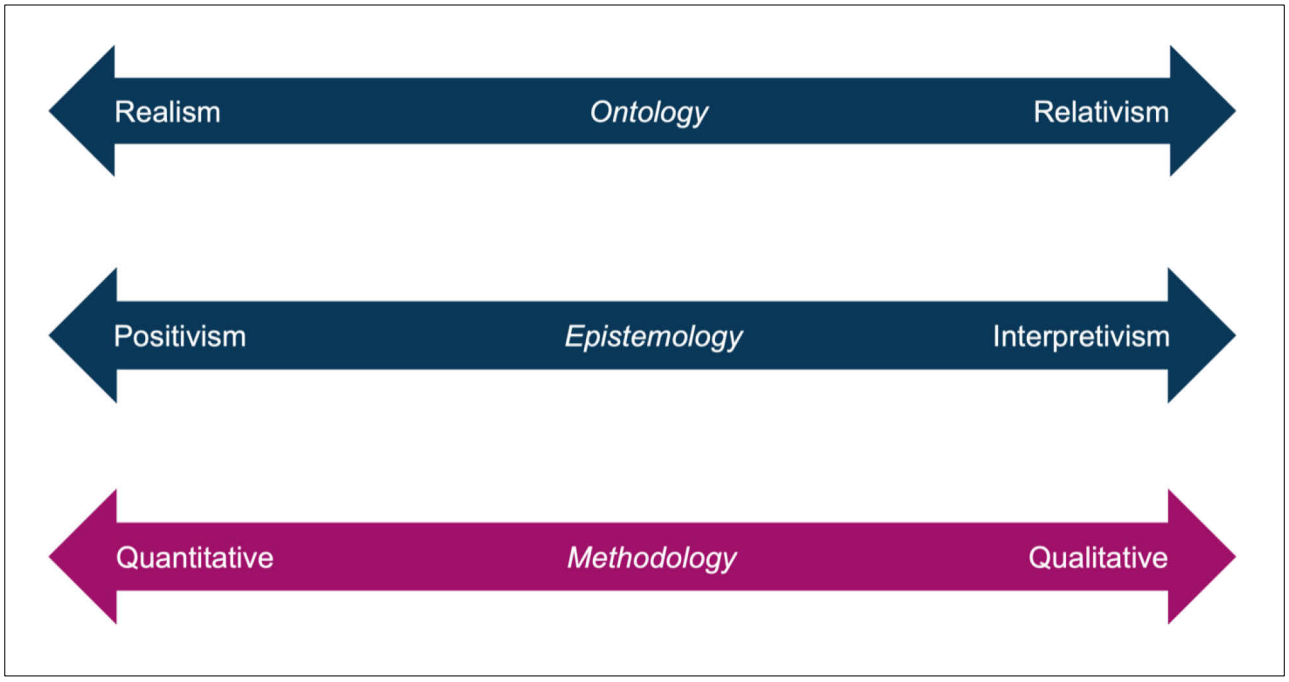
> Answers to questions about whether or not something fundamentally exists (e.g. numbers, institutions, or causal relations) [that are] often determined prior to empirical research. They therefore represent a set of beliefs about the nature of the world and so to a certain extent they influence the questions researchers ask as well as the ways in which they practice science (Exploring Economics, 2024, internet).

A set of ontological statements forms an ontological approach, that is a 'world view' (for an account of the 'economic world view' see Mäki, 2001). For instance, scientific realism[133] represents one hand of the ontological continuum (see Figure 6): it assumes one single reality and considers theories as

[133] Ontological realism is 'a philosophical thesis that deals with two questions: What exists? What is existence? […] What is there in the world? What is the furniture of the world? What is the world made of? What is its structure? What is the case? What is the way the world is? What is the way the world works?' (Mäki, 2018, p. 12029).

standing independently of the human mind.[134] On the other hand of the spectrum, scientific relativism presumes the existence of multiple realities and conceives all theories as valid within the context of reference.[135] Relativists, indeed, refuse any notion of 'cumulative' science (Sandmo, 2011, pp. 8-9), looking at the 'structures' of knowledge advancement rather than its 'objective' moments (Zamagni, 1994, p. 8).

Figure 6 – Philosophy of science continuum



Source: author's elaboration.

The established economic method presupposes 'a realist ontology […] in which the reality is single, external, observable, and measurable' (Pickbourn & Ramnarain, 2016, p. 75). Yet, economics arguably violates these conditions, since its theories (1) invoke mental and social entities directly, not being mind-independent, (2) deal with observational and common-sense entities (to wit, goods, rates, prices, money), and (3) cannot always be experimentally manipulable[136] or evaluated based on their 'technological success' (Mäki, 1996, pp. 427-428; see also Hausman, 1998). This pushes economists towards a more relativist approach to science and calls for adjusting their methodology accordingly, by accounting for the contribution of qualitative insights to their object of study.

[134] Different currents of scientific realism exist, with different degree of certainty: from the naïve to structural and critical realism (Moon & Blackman, 2014).
[135] Currents of scientific relativism include bounded and non-bounded relativism (Moon & Blackman, 2014), and critical relativism (Anderson, 1986).
[136] If economists strongly rely on the close relationship between science and experiments, and lacks, at least partially, the 'ground under his feet', this is not the case in the natural sciences (Mirante & Baranzini, 2013, p. 27, author's translation).

Second, epistemology is defined as the study of knowledge itself. Epistemological issues thus gravitate around its main question: What is knowledge? Epistemology is indeed:

> About how we can or cannot know things. It asks whether we can objectively observe reality, or whether "knowledge" is always the result of our own interpretation and experience. It also considers the different ways in which we can or should acquire knowledge. For example, should we start from empirical observations or from logic? (de Muijnck & Tieleman, 2022, p. 240).

Different epistemological traditions answer these questions in different ways. If 'objectivist' currents of thought see the objects of analysis as existing *independently* of the subject who inquiries into them, 'subjectivists' believe that meanings either exist *within* the subject, who imposes them on the object itself (Moon & Blackman, 2014), or are created via the interplay between the subject and the object.

On the one hand of the spectrum, positivist approaches (see Comte, 1851-1854) stress the role of logical analysis and empirical material to develop verifiable statements and solid hypotheses about the analysed phenomena. Referred to as 'logical positivism' and 'logical empiricism' at the beginning of the XX century (see Caldwell, 1982/1994, pp. 11-67; for an overview of the main philosophical approaches in the history of science see Schurz, 2013, pp. 1-14), lately:

> Positivists became dogmatic in their refusal to allow any subjective, qualitative elements to enter into their rational reconstructions of science [and] missed the rich and complex diversity of patterns of explanation and theorizing in science (Caldwell, 1982/1994, pp. 89-90).

On the other hand, interpretivist perspectives[137] rather consider knowledge as inevitably based upon the researcher's subjective interpretations; that are, in turn, culturally derived and historically situated (see Geertz, 1956).

For interpretivists, the research practice is strongly influenced by the personal characteristics, inclinations, and actions of the researcher who collects and analyses the results. In this view:

> All inquiry entails description, and all description entails interpretation. […] Descriptions always depend on the perceptions, inclinations, sensitivities, and sensibilities of the describer. […] Researchers seeking to describe an experience or event select what they will describe and, in the process of featuring certain aspects of it, begin to transform that experience or event (Sandelowski, 2000, p. 335).

[137] These, however, are not to be confounded with 'logical interpretation', an epistemological approach originating in the XIX century, and supported by Russell, Wittgenstein, Moore, and Carnap. Based on the principle of 'rational belief', they extended deduction to inductive logic, arguing that evidence partially entails hypotheses to a certain degree of probability (Redman, 1997, p. 201).

Interpretivist approaches are usually defined as 'post-structuralist' or 'post-modernist', including conceptual and methodological frameworks derived from the philosophical traditions of hermeneutics (Kinsella, 2006), phenomenology[138] (Arnold & Fischer, 1994; Thompson, 1997; Denzin & Lincoln, 2011), social constructivism[139] (Holstein & Gubrium, 2011), and critical theory[140] (Honneth, 2008).

Generally inclined towards eliminating the gap between the object of analysis and the analysis itself, economists take theoretical results as a form of 'absolute' knowledge of reality (Zamagni, 1994, p. 8).[141] This approach responds to an:

> Empiricist epistemology […] in which the knower and the known are separate and independent, so that the truth is not defined by the research context, or by the value of the researcher or the researched. […] Knowledge produced within this framework must be objective (that is, true regardless of the subject's individual biases), verifiable through empirical evidence, and replicable (Pickbourn & Ramnarain, 2016, p. 75).

In this view, knowledge shall be 'scientific' if and only if it is 'unbiased' (Starr, 2014). This is aligned with economists' positivist outlook, fostering the use of natural sciences' methodologies for the sake of predicting social phenomena alike particles' behaviour in physics or cells' dynamics in biology.[142]

3.2. Philosophy of qualitative economics

Since the role of QRMs in the social sciences is multifaceted, their integration into economics cannot simply be reached by imitating other disciplines but presupposes different philosophical assumptions. This section examines the required changes in economic methodology for letting qualitative research enter economic science, and provides an account of its ontological, epistemological, methodological, and axiological[143] premises by offering an outline of the shifts needed in economic research objectives and scientific criteria to allow for qualitative insights.

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[138] Phenomenological approaches were applied to consumer research (Thompson et al., 1989), marketing (Wilson, 2012), and economics (Léonard & Arnsperger, 2009), among others.
[139] Social constructivists see sensemaking as an activity of the human mind, and conceive reality as 'socially constructed': that is, the result of an implicit process of shared knowledge building (Holstein & Gubrium, 2011).
[140] With a focus on power relations and social actors, critical theory considers research and theory as tools to change and deconstruct reality through unveiling language, discourses, and truth claims (Moon & Blackman, 2014).
[141] Although structuralist frameworks, which examine the formal structure of language as informing sources of meaning, do exist in HE, most economists do not share non-objectivist views (for an account of the epistemology of economics see Focardi, 2015, pp. 2-6); and conceive scientific 'truth' as independent from the research context, the researcher's values, and the object researched (Pickbourn & Ramnarain, 2016).
[142] Besides the actual success in doing so, economists might arguably never reach the level of scientific rigour of physicists or biologists, not being able to develop sound empirical laws (Caldwell, 1982/1994, pp. 99-103).
[143] Originally addressing the nature of ethical behaviour and value judgements, in the scientific realm, the term 'axiology' 'refers to what the researcher believes is valuable and ethical', guiding her research approach (Killam, 2013, p. 6).

3.2.1. Qualitative research methodology

Scholars advocating for 'methodological pluralism' (Dow, 1997, 2002) in economics argue that this shall be reached not only by integrating different research methods but also by 'rethinking' economic methodology, epistemology, and ontology (Dow, 2004a; see also Dow, 2009) (see Table 3).

Table 3 – Monism and pluralism

	Monism (neoclassical economics)	**Pluralism (regarding ontology)**
Ontology	Economy is a closed system, behaviour is law-like, deviations from laws are random "shocks"	Economy is an open system, economy does evolve, variety of ways and contexts
Epistemology	Form theory around laws, seek confirmation in empirical evidence of event regularities, one paradigm	Variety of approaches to building knowledge, many paradigms
Methodology	Form laws to explain human behaviour, "Goal": One universal theory that explains everything	Range of approaches, different theories and models seen as partial explanations, reflective of reality
Methods	Mathematical methods	Variety of methods

Source: Dow (2009).

In what follows, this is attempted by suggesting the basis for a new ontological, epistemological, and methodological background supporting QE: namely, the economic sciences adopting QRMs for the study of economic behaviour, the analysis of economic systems, and the inquiry of economic reality.

3.2.1.1. A new philosophy of science

Contrary to the established ontological perspective, the economy should be seen as an open system, calling for a variety of approaches, paradigms, theories, and methods (Dow, 1997, 2004a, 2009; see also van Staveren, 2015, pp. 251-276). In this sense, some scholars advocate for an 'ontological turn' (Lawson, 2003, pp. 28-62) that HE already experienced. For instance:

> [Marxian economics] is systemic (holistic), identifying economy-wide structures, processes, agents and relations and classes as opposed to individuals simply related through market supply and demand (Stockhammer, 2018, p. 21).

Similarly, ecological economists criticise the view of 'the economy as a price-making market system' that converts all economic entities (to wit, human, social, cultural, and natural capital) to objects, and foster the need 'to relate to the *qualities* of the actual objects of study (i.e., humans, society, culture, and nature)' (Spash & Asara, 2018, p. 121).[144]

Furthermore, at the epistemological level:

> The logic of qualitative research takes a different epistemological approach with regard to reality and the processes of perception than the deductive and nomothetic paradigm: whereas the latter focuses on a fundamental objectivist understanding, qualitative research is based on an interactionist understanding of the construction of social reality. […] The operational logic and the goals of the qualitative research process do not rest on a concept which has been theoretically formulated a priori [but] are based on […] the analytical reconstruction of the original concepts of the responding (economic) subjects (Lenger, 2019, pp. 950-951).

This raises the need for economists to (1) refute the objectivist perspective, (2) assume that detached and neutral knowledge is impossible to get and not useful to have (Matta, 2015, 2020; Zahle, 2021),[145] and (3) embrace an interpretivist approach to economic reality.[146] In this perspective, a 'practice turn' as experienced by post-modern social sciences (Cetina et al., 2001) and an 'interpretive turn' similar to that seen in marketing and consumer research during the 1980s (Tadajewski, 2004, 2009; see also Tadajewski, 2014) would eventually 'save this wonderful discipline from the indignities of boredom and irrelevance' (Chamlee-Wright, 2011, p. 169).

In the realm of methodology, economists need to overcome the 'methodological separatism' – that is, the dualism between positivist and interpretative traditions (Matta, 2019) –, finding shared epistemological principles (Johnson et al., 2007; Repko & Szostak, 2020) that would allow to reach an 'epistemic parity between quantitative and qualitative disciplines' (Newfield et al., 2022, p. 18). Nonetheless:

> Not all regression analyses are more persuasive than all moral arguments; not all controlled experiments are more persuasive than all introspections. People should not discriminate against propositions on the basis of epistemological origin. There are some subjective, soft, vague propositions that are more persuasive than some objective, hard, precise propositions. […] There is no need to choose between the qualitative and the quantitative evidence: an intelligent rhetoric of economic history would give privilege to neither (McCloskey, 1982/1998, pp. 177-178).

[144] Other ways to overcome the dichotomy between objectivism and relativism were proposed by Chamlee-Wright (2011) and Lavoie (2011), for instance.
[145] Objectivity in the research process is indeed (1) not possible, due to the inextricable link between the knower's human beliefs, values, intentions and the known, and (2) not desirable, as long as 'empathic understanding between the researcher and the researched is key to discovering knowledge' (Pickbourn & Ramnarain, 2016, p. 76).
[146] Albeit spread among sociologists and anthropologists, in economics, these are rather neglected or contested, due to the absence of critical assessment over methodological contents and research paradigms (Caldwell, 1982/1994, pp. 244-250).

> Were economists to give up their quaint modernism and open themselves officially to a wider range of discourse, they would not need to abandon data or mathematics or precision. They would merely agree to examine their language in action and converse more politely with others in the conversations of humanity (McCloskey, 1982/1998, p. 35).

Nevertheless, the adoption of 'a middle-ground attitude toward reality' and the 'recognition of the interconnectedness of all phenomena' (Szostak, 2016, pp. 65-67) call for practices of 'triangulation' across different types of empirical evidence (Risjord et al., 2002; see also Rao & Woolcock, 2003).

Economists are demanded to appreciate methodological pluralism (Boland, 1969, 1982; Dow, 1997; Salanti & Screpanti, 1997; Dow, 2004b; della Porta & Keating, 2008; King, 2008; Keating & della Porta, 2010; Dow, 2012; King, 2013): namely, the use of multiple sources of data and analytical methods to ensure a rich palette of insights and theories explaining a given phenomenon.[147] Indeed:

> Insofar as scholars are conversant in the language of the other tradition and interested in exploring a peaceful and respectful dialogue, they can productively communicate with one another (Mahoney & Goertz, 2006, p. 246).

> The theoretical and empirical accomplishments of modern economics, obtained with hard standards for the conduct of research, should be rightly celebrated. But such standards should not be uniformly applied to all economic problems. […] Different terrains call for different vehicles. A sailboat is useless in crossing a (riverless) desert; a camel is useless in crossing a sea (Akerlof, 2020, p. 416).

Methodological dogmatism should leave space for a complementary, collaborative, and instrumental attitude towards different research methods (for a discussion of the interaction between quantitative and qualitative methods see Newman & Benz, 1998; for an account of the benefits of coupling them see Shah & Corley, 2006), allowing for unconditionally exploring new contexts (Goldschmidt et al., 2016) and practices (Mahoney & Goertz, 2006; Brady & Collier, 2010).

Besides borrowing methods from different social sciences, methodological pluralism entails drawing on the full range of schools of economic thought (see for instance Pheby, 1988, pp. 95-126) to build informative and empirically grounded economic theories (Pickbourn & Ramnarain, 2016). Arguably, 'the quest for a single, universal, prescriptive scientific methodology is quixotic', since 'no universally applicable, logically compelling method of theory appraisal exists' (Caldwell, 1982/1994, pp. 244-245). Nonetheless:

[147] This can be achieved, for instance, 'by bringing together different sources of primary information, such as transcripts of open-ended interviews, company reports and case studies' (Finch, 2002, p. 213).

> Methodological pluralism need not and *must not* be equated with an *absence* of criticism. […] It would, in any case, save the proponents of methodological falsificationism in economics from the embarrassing dilemma of having to dismiss as unscientific the analyses of Austrians, Marxists, Institutionalists, and the like because they pay no heed to methodological falsificationism, while at the same time having to sheepishly admit that their ideal has not been tried within standard economic theory, either (Caldwell, 1982/1994, p. 128, emphasis in original).

Rather than substitutes, economic methods should be conceived as complements to 'integrate across the insights generated from all types of research' (Szostak, 2016, pp. 67-68). Each method would thus be problem-dependent and applied according to several factors, including the context of application, the required methodological function, and the specificity of the study.

Finally, economists should restart discussing issues and theories of value, and:

> Bring back value theory as a hotly debated area, relevant to the turbulent economic times in which we find ourselves. […] To create a fairer economy, one where prosperity is more broadly shared and is therefore more sustainable, we need to reinvigorate a serious discussion about the nature and origin of value (Mazzucato, 2018, p. 19).

This shall help overcome the prevailing view, where:

> Prices are set by supply and demand, and any deviation from what is considered the competitive price (based on marginal revenues) must be due to some imperfection which, if removed, will produce the correct distribution of income between actors. […] Indeed, for economists there is no longer any story other than that of the subjective theory of value, with the market driven by supply and demand (Mazzucato, 2018, pp. 11-13).

In fact, modern economics (1) evaluates policies based upon their quantitative rather than qualitative effects, (2) is not able to differentiate between productive activities, *creating* value, and unproductive activities, merely *extracting* it (for a discussion see Mazzucato, 2018, pp. 8-11), and (3) undervalues the public sector's role in requalifying economic activities (Mazzucato, 2018, pp. 270-274).

3.2.1.2. Axiology of qualitative research

Despite the established view among economists, the role of science is neither strictly limited to theory building for the sake of scientific progress nor exclusively devoted to evidence-based policy making. Knowledge and scientific insights can serve other aims, and emerge from research methods that entail different priorities. Rather than relying on explanatory and predictive power, for instance, qualitative research is characterised by an exploratory and descriptive capacity to examine complex phenomena, unknown contexts, and undefined dynamics (Chamlee-Wright, 2010b). If QRMs' *exploratory* power is meant to gather initial insights paving the way for further work, their *descriptive* power is aimed at

offering a reliable picture of the observed phenomena and thus gauge empirical support for existing theories (Starr, 2014, p. 257).

Contrary to quantitative research scholars,[148] qualitative researchers 'interpret portions of data in terms of one or more theoretical constructs' and provide 'qualitative descriptions […] of properties and features, rather than magnitudes' (Matta, 2019, p. 387) in order 'to understand how individuals interpret a certain experience' (Larsen, 2014, p. 7; Merriam & Tisdell, 2015). Indeed:

> Experiments can identify *how likely* it is that a particular decision is made in a particular circumstance. But interviews may be necessary to comprehend *why* certain agents made certain decisions. Likewise surveys can identify common attitudes but interviews can find out *why* these attitudes are held and observation can explore *how* these are applied in practice (Szostak, 2016, p. 65, emphasis added).

> There is much to be gained in economic analysis by asking inherently qualitative questions. […] We may learn little about cause-and-effect or whether the predictions of one model or another hold, but we learn more, much more, about the human experience (Logan, 2015, p. 21).

Whereas quantitative methods are adopted to '*estimate* average causal effects for large populations' (Pickbourn & Ramnarain, 2016, p. 84, emphasis added) and quantify objects of analysis by answering the questions *how much* and *how many*, qualitative research is better equipped to capture the *how* and the *why* of social phenomena, patterns, and changes (Swann, 2006; Chamlee-Wright, 2010b, pp. 325-330).

Qualitative methods not being applied in economic research, their aforementioned exploratory role is undeservedly neglected by economists. Yet, the former potentially offers important benefits to the research questions of the latter in all those cases where fieldwork and primary data collection are deemed useful (see Helper, 2000), such as:

> (a) when very little is known about the topic, so that broad exploratory research is needed to identify its basic characteristics; (b) when there has already been a lot of quantitative research on the subject, but key questions remain unresolved; (c) when back-and-forth with an interviewer is thought to be needed to help elicit full and accurate information; (d) when the topic under investigation has some inherent complexities the researcher wants to be able to capture; and/or (e) when respondents' own views of their own situations are of inherent interest (Starr, 2014, pp. 238-241).

Representing the main scopes of qualitative research, these will be further systematised, outlined, and explained in detail throughout the following paragraphs.

[148] Quantitative researchers 'make use of equations in order to manipulate the data', which 'tends to be numeric – often collected from surveys, tests, or experimental designs – and usually seeks to produce generalizable results that uncover correlational or causal relationships' (Matta, 2019, p. 387).

First, QRMs allow for an *in-depth* analysis of phenomena, revealing facts and interpretations (Hill & Meagher, 1999, pp. 10-12) and unveiling processes[149] (Giesler & Thompson, 2016) simply via 'genuine field observation' (White in Swedberg, 1990, p. 91). That is, 'just by watching' (Helper, 2000, p. 1; see also Rethinking Economics, 2020) or 'listening' (Callahan & Elliott, 1996), and thus 'learning by asking those who are doing' (Blinder, 1990, p. 1; see also Sandelowski, 2000). Indeed:

> We might be able to learn something more if we opened our eyes and ears and listened a little more to the subjects who populate the economies we study, the people who actually *do* the things we *theorize* about (Blinder, 1990, p. 297, emphasis in original).

> We can learn things of interest by asking actual decision makers to tell us about their behavior. […] I would be the last to argue that other more conventional modes of economic inquiry should be abandoned. But the law of diminishing returns suggests that learning by asking, the most underutilized of all economic research tools, may now offer high returns (Blinder, 1994, p. 148).

This is eventually achieved by approaching 'the phenomenological—that is, the thorough and multi-faceted—representation of complex social realities, which are then reconstructed hermeneutically and comprehensively portrayed as patterns' (Lenger, 2019, p. 949).

Second, qualitative research is especially suitable whenever official statistics is not available (to wit, black market, illegal activities, least developed countries, informal economy) (see for example Levitt & Venkatesh, 2000, 2001) or the target object of study is not known enough to either formulate precise survey questions or correctly design a controlled experiment.

> In quantitative studies, researchers gather or use data with the expectation that they know in advance a fixed set of dimensions along which the data should be characterized. […] In qualitative studies, researchers 'proceed to the field' with clear and detailed guidelines as to what issues they want to investigate and how, but expecting their *interaction* with research subjects and/or their broad review of relevant data to provide the basis for constructing a sound characterization of the phenomena of interest (Starr, 2014, p. 239).

If the aim is to understand unexplored contexts with nondeterministic and uncertain dynamics, then qualitative methods might reveal more successful than quantitative research in explaining particular outcomes (Chamlee-Wright, 2010b; Pickbourn & Ramnarain, 2016).

Third, QRMs offer the possibility to tackle multiple topics (Berik, 1997) and also build a more accurate as well as broader set of theories (for a discussion see Alba, 2011), due to 'a much greater

[149] A 'process' is defined as the ensemble of mechanisms by which a particular intervention instigates a series of events, that ultimately result in the observed impact (Rao & Woolcock, 2003, p. 2).

level of openness and flexibility in the research process' allowing to 'establish important findings and to formulate more realistic models' (Lenger, 2019, pp. 949-952). That is:

> The key distinction between qualitative and quantitative research is not words versus number per se [but] open- vs. closed-end approaches to gathering data. […] In qualitative studies, the approach to information gathering assumes that relatively flexible discussions with research subjects [that] are needed for gaining a full and complete set of insights into the phenomenon of interest (Starr, 2014, pp. 239-241).

This methodological flexibility indeed reflects into the theory building process (Szostak, 2016, p. 65). Albeit better at providing answers, economists' rigorous approach often simplifies, constraints, and narrows the empirical analysis in a way that 'the broader-thinking sociologists, anthropologists, and perhaps psychologists' do not when identifying research issues (Lazear, 2000, p. 103).

Finally, qualitative research arguably 'brings to light information that would otherwise not be readily apparent, and which might not be captured by any measurement scale or multivariate methods' (Pickbourn & Ramnarain, 2016, p. 76). Since not all empirical evidence is 'objective', 'experimental', 'positive', and 'observable' (McCloskey, 1982/1998, p. 158), the value of QRMs lies 'in the use of alternative techniques designed to access data that cannot be captured, contained, or communicated in a linear numerical framework' (Hill & Meagher, 1999, p. 17). In fact:

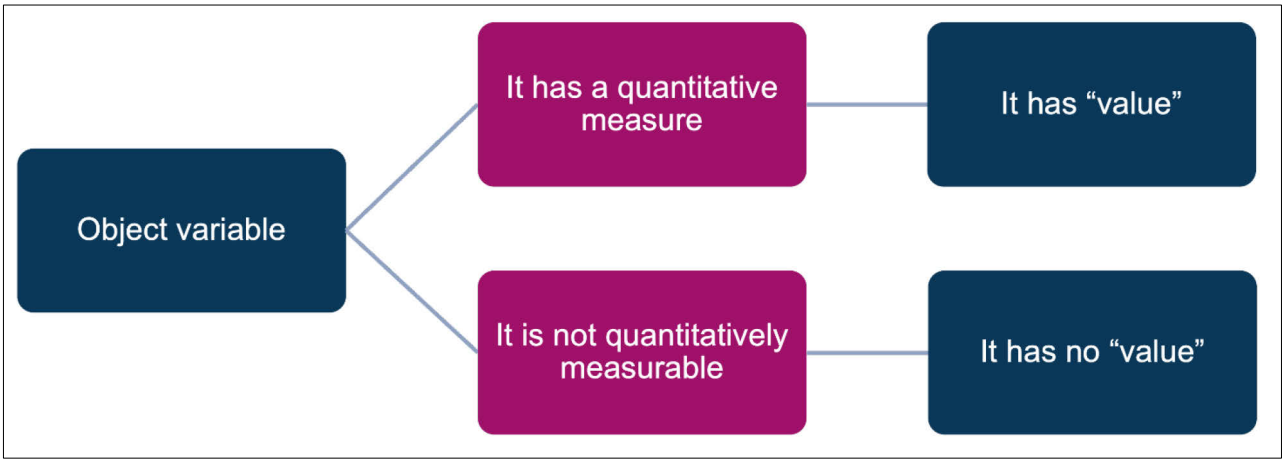
> There are phenomena and processes of social or behavioural nature that cannot be measured from a quantitative point of view (Jemna, 2016, p. 159).

Because these might represent 'non-quantifiable elements that play absolutely key roles in how the economy works' (Pilkington, 2016, p. 4), economists should adopt QRMs to gain 'useful empirical and theoretical insights often unavailable with conventional "quantitative" sources and tools' (Hill & Meagher, 1999, p. 2), and thus 'measure the unmeasurable' (for an example see Beckerman, 2011, pp. 208-225).

In fact, economists are obsessed with measuring phenomena's variables (Boumans, 2004) and neglect those not quantitatively measurable (for an outline of the limits of quantification see Martin, 2004). Deriving from economics' positivist and modernist nature (see Friedman, 1953, p. 31), which considers the knowledge expressed in numbers as superior to any other,[150] this approach suggests to discard from empirical analysis all those elements that do not have a relative quantitative value (see Figure 7).[151]

[150] Albeit not supported by most philosophers nowadays, the so-called 'Kelvin dictum' can be found in the Social Science Research building at the University of Chicago (Knight, 1940, p. 166; McCloskey, 1982/1998, pp. 143-144).
[151] In Cameron's (1963) words: 'not everything that can be counted counts, and not everything that counts can be counted' (p. 13).

Figure 7 – Quantitative measure and value



Source: author's elaboration.

The missing intangible variables end up in the 'error term' of regression analyses,[152] albeit containing key information for explaining the observed phenomena (see Sterman, 2002).[153]

Reinforced by an 'hardness bias' much characterising the profession, the undesirable tendency of asking '*only* the kind of questions to which sophisticated econometric tools can be applied' (Lavoie & Chamlee-Wright, 2000, p. 21) leads economists to select phenomena of interest according to their measurability rather than scientific relevance (Hayek, 1952/1979, p. 89; see also Akerlof, 2020). That is:

> Economics, as a discipline, gives rewards that are biased in favor of the "hard" and against the "soft." This bias leads to "sins of omission" in which economic research ignores important topics and problems when they are difficult to approach in a "hard" way (Akerlof, 2020, p. 1).

> It is demanded that our theories must be formulated in such terms that they refer only to measurable magnitudes. It can hardly be denied that such a demand quite arbitrarily limits the facts which are to be admitted as possible causes of the events which occur in the real world (Hayek, 1989, p. 3).

Nonetheless, this attitude erroneously 'conflates measurement with understanding' (Chamlee-Wright, 2011, p. 164), making economists neglect all 'kind of empirical work that is highly regarded outside of economics, ethnography and archival-historical research, which involves very close-up studies of

[152] That is, the error term 'might indeed contain a number of variables that qualitative researchers regard as significant for individual cases' (Pickbourn & Ramnarain, 2016, p. 80).
[153] As brilliantly explained by Sterman (2002), 'the most important assumptions of a model are not in the equations, but what's not in them; not in the documentation, but unstated; not in the variables on the computer screen, but in the blank spaces around them' (p. 513).

the complex details in their specific contexts' (Lavoie & Chamlee-Wright, 2000, p. 21; for an example see Emami & Olson, 2002, pp. 145-148).

3.2.1.3. Scientific criteria

Not surprisingly, the scientific criteria adopted to evaluate quantitative research do not equally apply to qualitative research. Although 'each stream emphasized the advantages of their approach over the weaknesses of the other' (Cronin, 2016, p. 287),[154] QRMs are criticised for (1) the sampling strategies adopted, (2) the quality of the data collected and self-reported information, (3) the standards of quality evaluation, and (4) the generalisability, definitiveness, and stableness of the findings (see Pickbourn & Ramnarain, 2016, pp. 80-84). These indeed form the basis for evaluating the scientific standing of qualitative research.

The first factor to be considered for assessing the scientific value of qualitative research is the sampling strategies adopted. Quite intuitively:

> Both 'good' and 'bad' research qualities occur in both types of research; for example, econometric analysis of data from a casually drawn 'convenience' sample and subject to a lot of measurement error may or may not permit better inferences than systematic analysis of carefully recorded and coded 'verbal' data drawn from a well-constructed purposive sample. […] Purposive sampling covers a wide variety of practices referring to the construction of the sample in some way that facilitates satisfaction of the research objectives (Starr, 2014, pp. 240-243).

While convenience sampling, such as the 'snowball' method, prioritises the availability of qualitative data, purposive and theoretical sampling recall the standards of the case selection techniques adopted in quantitative research. Albeit also focusing on the features and structure of the population (Glaser & Strauss, 1999; Patton, 2015), these strategies respond to different criteria.[155]

Second, qualitative research is criticised for the quality of self-reported information. In fact, economists assume that (a) theory already tells what people think (Bertrand & Mullainathan, 2001) and that (b) people do not behave as they say they do (Ferrier, 2020),[156] considering individuals as 'unreliable witnesses' of their own behaviour (Gordon, 2011, p. 9).[157] However:

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[154] While qualitative research is criticised for its 'limited generalizability, limited rigour and vulnerability to researchers' subjective biases', quantitative research is rather scrutinised for its 'reductionism, formalism and insufficient attention to subjective interpretation' (Cronin, 2016, p. 287).

[155] In qualitative research, structural consistency, and accurate representation in sampling and case selection, are achieved through the principle of 'contrastability' (Flyvbjerg, 2011).

[156] For instance, people may have incentives to neglect key information, misinterpret requests and questions, underreport, or overreport their behaviour; similarly, respondents may not know themselves the reasons for their actions, either being unaware, unable to explain, or just lying about their motivations and preferences (see Machlup, 1946).

[157] These unsupported beliefs are 'unreasonably blocking off sensible Bayesian-style approaches to making sense of data' (Starr, 2014, p. 243).

> In the other social sciences, the notion that you can learn things by asking people would hardly be revolutionary message. […] Asking people is a fundamental tool of inquiry in anthropology, sociology, psychology, and even, to some extent, political science. Yet is something that economists not only rarely do, but often actually sneer at. […] Physicists and chemists do not ask their subjects why they behave as they do, so we shouldn't either – or so we think. But is that a scientific attitude? If molecules could talk, would chemists refuse to listen? (Blinder, 1990, p. 297).

> It is often asserted that peoples claims about their own motives may be misleading, so that motives can be discovered only from behavior. […] The only feasible approach seems to be to ask key decision-makers or people who observe them about their activities and motives (Bewley, 1995, p. 250).

When treated with accurate research design and methodology (Starr, 2014, pp. 256-257), informants' responses reveal key insights on the phenomena under study (Chamlee-Wright, 2010b). Yet, 'letting respondents tell their story does not mean taking everything they say at face value; one should be as skeptical of their statements (and as appreciative of them) as of any other data' (Helper, 2000, p. 230).

Nevertheless, 'quantitative data collection is equally prone to problems of interpretation and validation' since the 'respondents to formal quantitative surveys often misunderstand the meaning of questions, or for reasons of their own choose to provide incorrect responses' (Hill & Meagher, 1999, p. 13). In the context of surveys aimed at measuring individuals' willingness-to-pay, for instance:

> Responses to such questions are hard to trust: they are sensitive to changes in question wording and order, they show odd properties (as when respondents assign the same monetary value to options yielding markedly different material benefits) (Starr, 2014, p. 254).

Despite economists' attempts to identify the psychological mechanisms lying behind questionnaires and improve participants' consistency in answering surveys (Schaeffer & Presser, 2003; Bradburn et al., 2004; Oh, 2023), it is exactly the rationale of qualitative research to elicit individual preferences and beliefs (Desaigues, 2001; Chilton & Hutchinson, 2003; Svedsäter, 2003; Baker et al., 2008; for a discussion see Beckerman, 2011, pp. 221-223).

Third, the standards of quality evaluation in qualitative research are very different from those of quantitative research (Lincoln & Guba, 1985; see also Maxwell, 1992). That is:

> Qualitative descriptive studies offer a comprehensive summary of an event in the everyday terms of those events. Researchers conducting such studies seek *descriptive* validity, or an accurate accounting of events that most people (including researchers and participants) observing the same event would agree is accurate, and *interpretive* validity, or an accurate accounting of the meanings participants attributed to those events that those participants would agree is accurate (Sandelowski, 2000, p. 336, emphasis added).

> While quantitative methods assess inferred relationships against disciplinary evidential standards, such as norms for acceptable statistical probability, qualitative inferences are assessed in terms of *credibility* to participants and users of the research (Cronin, 2016, p. 296, emphasis added).

Internal validity in qualitative research means to enhance inference quality and interpretive rigour by choosing the appropriate method for each research question (Tashakkori & Teddlie, 1998; Creswell & Creswell, 2022).[158] Indeed, creativity and novelty in concept development *can* match with 'rigour' in qualitative theory building (for examples of qualitative inference see Piore, 1979, pp. 566-569; see also Shah & Corley, 2006; Burgelman, 2009; Gioia et al., 2013).[159]

Finally, qualitative findings are by default not supposed to be 'generalisable' (for a discussion see Lenger, 2019, pp. 949-951), yet they may allow for representativeness and 'transferability'[160] (see Table 4).

Table 4 – Quantitative and qualitative research

	Quantitative research	**Qualitative research**
Objective	Quantification and causality	Exploration and description
Data	Quantitatively measurable and analysable	Qualitatively collected and analysable
Power	Uncovering patterns, trends, and likelihood	Unveiling motives, beliefs, and taste
Application	Analysing choice making	Eliciting individual preferences
Priority	Methodological rigour and precision	Real-world accuracy and detail
Emphasis	Generalisability	In-depth understanding
Criteria	External and internal validity	Transferability and triangulation

Source: author's elaboration.

[158] Among the strategies to ensure credibility, 'triangulation' plays a key role: by collecting multiple sources of qualitative data and confronting the empirical evidence across them, the qualitative equivalent of 'internal validity' increases (for an example see Hill & Meagher, 1999, pp. 11-12; for a discussion of triangulation see Cronin, 2016).
[159] Some *institutional economics* works are an illustrative example in this sense (Ménard, 2001; Ostrom, 2005; Schlüter, 2010; Spranz et al., 2012).
[160] In some cases, qualitative insights can be transferred to other domains and contexts, yet maintaining a similar degree of validity.

However, the latest tendencies in economic research are shifting the focus away from external validity and towards internal or construct validity.[161] Although evidence-based policy remains grounded upon the role of generalisability, the rising adoption of 'natural experiments' in economics (see The Royal Swedish Academy of Sciences, 2021) implicitly revaluates the potential contribution of fieldwork for economic theory building (Helper, 2000)[162] and the scientific relevance of single case studies (Rao & Woolcock, 2003).[163] For instance, so-called 'extreme cases' unveil rare insights from unique samples to explain those features that are not found elsewhere; instead of being seen as 'outliers' of the normal distribution, their scientific value lies precisely on their uniqueness (Gibbert et al., 2021).[164]

[161] It is the case of the field of IO, where internal validity plays a primary role over external validity (Schmal, 2023).
[162] Vice versa, economic theory can inform qualitative analysis by: providing a narrower focus to the study, understanding better its contributions, illuminating additional content, organising longitudinal data, offering alternative interpretation of results, refining a theory, and improving researchers' reflexivity and positionality (Larsen, 2014, pp. 61-62).
[163] As 'in-depth understanding of a few cases may be appropriate' for theory building, 'the solution to the generalizability problem is to do more field research' (Helper, 2000, p. 231).
[164] Differently than quantitative research, case studies' rationale is not to statistically compare *n* cases (to wit, panel data analysis), or measure their patterns over time (to wit, time series analysis), but rather to extrapolate exemplary information from a small sample of carefully selected cases (for an account of case selection in qualitative research see Gibbert et al., 2008; Hoorani et al., 2020).

4. Qualitative economics: a discussion

In this chapter, three questions – inherently qualitative – will be discussed by drawing on the analysis carried out throughout this thesis. Building upon the documented scarce use of qualitative research in economics (Starr, 2014; Lenger, 2019), the first question asks *why* this is the case; namely, which are the reasons for economics not to embrace qualitative insights. These are grouped into three categories: historical and political, cultural and institutional, and philosophical and epistemological. To provide satisfactory answers to this question, the history of economic methods outlined in Chapter 1 and the philosophy of science of modern economics examined in Chapter 3 are especially useful.

The second question asks *how* economics can embrace qualitative inquiry; that is, which steps and strategies are needed to make economics 'qualitative'. In answering this question, three different routes are outlined: shifting the philosophical assumptions of standard economic research, developing existing fields either already using qualitative methodologies or calling for the need to, and integrating different research methods. This part draws on Chapter 2 by referring to those social sciences that do adopt qualitative insights, and Chapter 3 by exploring the philosophy of science underlying QE.

Lastly, the third question asks *what* economics can address by including QRMs to their toolset; or which topics, issues, and questions could economists tackle by acknowledging qualitative inquiry and adopting qualitative research when approaching them. These include, among others, the areas of environment and climate change, markets and financial crises, and poverty and inequality. Albeit not limited to those three domains, they are chosen as the case studies supporting the thesis of this work; namely, the added value and potential contribution of qualitative inquiry in economics as opposed to, or in complementarity with, standard quantitative methods for analysing similar issues (Mahoney & Goertz, 2006).

4.1. *Why* economics is not qualitative?

Economics exclusively relies on three methods: mathematical modelling, statistical analysis (Szostak, 2016), and laboratory or field experiments. Although scholars studied why other social sciences were influenced by these (Hirsch et al., 1987; Lazear, 2000; see also Fourcade et al., 2015; Fourcade, 2018; Cedrini & Dagnes, 2022), they did not ask why economics was *not* influenced by the QRMs used in other disciplines. Here, this question will be addressed, explaining the reasons for the methodological status quo of modern economics. These include historical and political, cultural and institutional, and philosophical and epistemological factors that will be outlined in the next three sections, respectively.

4.1.1. Historical and political reasons

The first group of reasons explaining the lack of qualitative inquiry in economics concerns historical and political factors. As shown in Chapter 1, the discipline's evolution significantly depended on the historical developments of mathematical and statistical techniques in the social sciences (Weintraub in Parisi & Alacevich, 2009; see also Stapleford, 2009). If until the end of the XIX century economists were 'chastely' using mathematics (Fisher, 1892; Marshall, 1890/2009), at the beginning of the XX century the birth of econometrics shifted economic methodology from being a hypothetico-deductive effort based on the application of modelling techniques to an inductive work focused on establishing causal relationships between empirical variables (Morgan, 1990; see also Scott, 2018). The increasing availability of statistical data as well as the obstacles to designing scientific experiments progressively made econometrics the 'gold standard' of economic research.

In this process, the natural sciences and their quest for measuring physical phenomena played a key role (Mirowski, 1989, 1991). Driven by a sort of 'physics envy' (Malinvaud, 1997), economists started adopting the quantitative methods of the natural and physical sciences, believing that it would have turned economics into a 'true' science (Hayek, 1978; Mirowski, 1989; Zamagni, 1994). In fact, mathematical economists mastered more formal mathematics than theoretical physicists themselves (McCloskey, 1982/1998, p. 167), ignoring the problematic effects of the blind faith in mathematical language, which physics already experienced (Hossenfelder, 2018). Drawing on the presumption that the economic world must be simply, beautifully, and elegantly described by scientific laws expressed in mathematical form (and formulas), economists neglected the complexity of economic reality and compromised the explanatory power of their theories.

Besides the methods, economists often imitated physical concepts, importing and translating them into economic terms. The building blocks of NE, from utility theory to GET, derive from notions which were previously established in mechanical and classical physics. This process made economics focus solely on quantitatively measurable phenomena and discard those variables that are not, such as sociocultural factors – well detected by qualitative research. Despite (1) the influence of quantum physics and its non-mechanical elements (Sylos Labini, 2016), (2) the latest 'empirical turn' (Angrist & Pischke, 2010), and (3) the increasing employ of experiments (Guala, 2010), economics' dominant methodological framework remains of quantitative nature (Lenger, 2019).

This has been interestingly explained in political terms. For instance, the use of mathematics and statistics in the social sciences was especially promoted by the American block during the Cold War. That is:

> The dramatic rise of economics' engagement with mathematics and statistics in the post-World War II period […] coincides with the low point of engagement with the other social sciences (such as political science and sociology), as well as with practical enterprises, such as law and, with a slight delay, business. […] Notwithstanding the foundations' and government's efforts to promote interdisciplinary ventures under the "behavioral sciences" label in the 1950s, the social sciences became clearly more estranged from one another in the 1960s–70s (Fourcade et al., 2015, p. 102).

The war profoundly influenced economics and applied sub-fields, so much so that the massive employ of quantitative methods in Western academic settings during that time was in fact triggered by United States' politics – directed against the Soviet Union. In fostering the so-called 'behavioural sciences', the former advocated for the removal, from the Continental social sciences, of any 'social' dimension that recalled the socialist values promoted by the latter and possibly represented a political threat to the American establishment (Tadajewski, 2006).

As a result, the incoming decades marked the beginning of the 'behavioural' era in economics. The discipline increasingly closed-off, interdisciplinary knowledge was progressively discarded, and non-quantitative methodologies were generally unwelcomed. Indeed:

> Gradually in the 1960s and overwhelmingly in the 1970s, the profession abandoned the notion that understanding is to be expanded either by modifying the basic behavioral assumptions or by an exploration of the nature of the constraints, and has returned to the first approach, i.e., an attempt to explore in a deeper and more meaningful way the basic maximizing model (Piore, 1979, p. 565).

Although accessing the 'deeper' and 'meaningful' dimensions of economic behaviour is precisely the scope of qualitative research, since the 1970s economists significantly boosted their efforts towards economic models' technicalities, thus neglecting the realism of their behavioural assumptions.

Despite the considerations around the issues of uncertainty and information raised during the 1980s and 1990s (see for instance Akerlof, 1970), economic theory still undermined the potentials of abstracting information from actors' experience and gave for granted their knowledge, tastes, beliefs, motives, and preferences. In the last 40 years, empirical tendencies in economics kept not considering the role of qualitative insights. Albeit establishing as the cutting-edge method in applied economics, experimental practices forsake any qualitative work. In those rare cases when this is pursued, no trace of its intended use is found in published articles, and economists have 'to truncate description of their fieldwork' (Helper, 2000, p. 231).

This is linked to the policy dimension inherently featuring the economics discipline. That is, the political need to evaluate policy proposals and their effects 'in the field' made economists adopt scalable techniques whose scope is to detect causality relations. Reinforced by the role of economics as the 'language of public policy' (Michaels, 2011; Raworth, 2017) and a vaguely neoliberal 'market

fundamentalism' (Montecinos & Markoff, 2009; Ötsch & Pühringer, 2017; Plehwe, 2018), these methods finally established as those capable of offering numerical accounts of economic issues and delivering precise, quantitative estimations of the costs, benefits, and impacts of economic policies; thus measuring their effectiveness (see Chatterjee, 2022; Newfield, 2022).[165] Whereas econometric and experimental work became the most legitimate method to reach this purpose, qualitative research grew its reputation as 'non-scientific' enough to be part of policy briefs.

4.1.2. Cultural and institutional reasons

Cultural and institutional factors also explain why QRMs did not enter economics. They are related to economists' professional context, and include several aspects. First, the 'separatist culture' which entails the quantitative and qualitative traditions, as seen in academic departments among researchers and reflected by their values, beliefs, and norms (Beck, 2006; Mahoney & Goertz, 2006). The general professionalisation of social sciences and the hyper-specialisation of the job market well fitted this distinction and further widened it. Indeed:

> [Research] tends to be heavily polarized along quantitative and qualitative methodological lines. This is largely because researchers are recruited, trained, socialized, evaluated, and rewarded by single disciplines (and their peers and superiors within them) that have clear preferences for one research tradition over another. This ensures intellectual coherence and "quality control", but comes at the expense of discouraging innovation and losing any potential gains that could be derived from integrating different approaches (Rao & Woolcock, 2003, p. 3).

Despite many failed attempts to foster the opposite trend (Ragin, 2007; King et al., 1994/2021), the 'hard' evidence (to wit, mathematical modelling and experimental work) prevailed over the 'soft' humanities (to wit, sociological, historical, and cultural studies) (Akerlof, 2020; for a discussion see Newfield et al., 2022). Moreover, the success of the former prevented prospect economists to adopt the latter (see Basole & Ramnarain, 2016, pp. 159-160).

In particular, the view that descriptive insights are essentially 'inferior' to other types of social sciences' knowledge (Sandelowski, 2000; Cawthorne, 2001) and that qualitative data is of 'anecdotal' nature (Piore, 1979, p. 563) contributed to this unbalance. If qualitative evidence was stereotypically treated as arguable opinions, quantitative information was by default seen as precise, value-free, and objective facts. This 'hardness bias' reflected into the institutionalisation of economics by fostering

[165] Allegedly perceived as the foundation of scientific knowledge, quantitative economics ultimately created a society of 'quantification' in a broad range of areas: from health (John, 2022) to education (Steffen, 2022) and environmental science (Lusk, 2022).

hierarchical promotion dynamics, a more 'concentrated' publishing market (Akerlof, 2020, pp. 406-408; for an account of economics professors' network dynamics see Rossier & Benz, 2022), and the reputational and prestige-based rules governing economists' professional career (Card & DellaVigna, 2013; Fourcade et al., 2015; see also Maesse, 2017; Schulze-Cleven et al., 2017).

Second, an implicit and subtle indoctrination process features the whole career of any prospect economist from undergraduate education until professional and academic positions. According to this view, 'students learning the principles of economics are actually […] being shaped by a specific and objectivist conception of reality' (Lenger, 2019, p. 959). Indeed:

> [Economists] find it very hard to think in terms of social relations, either because they are preselected into the economic profession just because they are reluctant to see things that way or because they have been trained not to do it (Granovetter in Swedberg, 1990, pp. 109-111).

> The profession over the past 50 or so years has structured itself in such a way that it only attracts identity thinkers, organization men who fall in love with Eternal Truths and who hide their ignorance behind a typically haughty and arrogant attitude. Those with a taste for contingency and human complexity are incentivised to choose a different discipline (Pilkington, 2016, p. 340).

Because they 'hold on to their worldview and put much effort into protecting their vested interests as academics, policy advisors, and teachers based on the skills they have acquired and invested in' (van Staveren, 2015, p. 6), economists end up being locked in the 'marginalist Church' (Pilkington, 2016, p. 340).

Inevitably, 'the discipline's emphasis on mastering quantitative reasoning (widely interpreted as a sign of higher intellectual capabilities)' became a strong signal of 'superiority' (Fourcade et al., 2015, p. 90; see also Akerlof, 2020), fostering the profession's 'pretence of knowledge' (Hayek, 1989; Caballero, 2010; Fourcade, 2018). This is reflected by a 'fix culture' (Mitchell, 1998) drawing on the economists' advisory role (Fourcade et al., 2015, p. 110) across public and private spheres (Markoff & Montecinos, 1993; Lebaron, 2001; Mata & Medema, 2013a; Hirschman & Berman, 2014; Maesse, 2015),[166] their acknowledged power of 'fortune tellers' (Friedman, 2014) in policy settings (Fourcade et al., 2015; Newfield, 2022; for a critique see Sharpe, 2023, pp. 114-124), and their reputation as the 'scientists' and 'intellectuals' of modern society (Gross & Simmons, 2007; see also Mata & Medema, 2013b; Plehwe, 2018).

Third, the use of quantitative methods in economics was influenced by institutional dynamics, including social norms and group thinking. Drawing upon the sociology of science and *social studies*

[166] However, 'policy is not just about 'intervening' [but rather] about shaping a different future: co-creating markets and value, not just 'fixing' markets or redistributing value' (Mazzucato, 2018, p. 20).

of economics, this view considers economics a form of the 'marketing of ideas' (Peter & Olson, 1983) where the employ of scientific approaches is determined by scholars' habits (Bloor, 1991; Fortunato et al., 2018; see also Wang & Barabási, 2021); namely, a social practice (Piore, 2006) influenced by specific institutions (Korom, 2022), rhetorical skills (McCloskey, 1982/1998, pp. 162-166), and viral powers (see Shiller, 2019, pp. 24-28, 53-68). Paradoxically:

> Although some economists consider qualitative research methods to be applicable to their research object, they forgo the use of qualitative methods—as a result of hierarchies specific to the field (the dominance of the quantitative research paradigm, socialization processes in economics) and of individual strategic calculations (difficulties getting published, their reputation in their field, career considerations) (Lenger, 2019, p. 960).

The belief, shared by most economists, that the discipline was going through an 'inexorable progress of superior and decontextualized scientificity' (Fourcade-Gourinchas, 2002, p. 23) heavily promoted a culture that disincentivised qualitative research (Frey & Eichenberger, 1993; Fourcade, 2009).

4.1.3. Philosophical and epistemological reasons

Finally, philosophical and epistemological assumptions profoundly determine the methods chosen by economists and underlie the rationale at the basis of quantitative methods' monopoly. The first factor explaining this supremacy is indeed called 'methodological monism' (Fischer et al., 2018; de Muijnck & Tieleman, 2022), limiting the interpretation of qualitative data and insights (Piore, 2006, p. 19) in economics. Despite the increasingly recognised role of empirical evidence, the discipline is still:

> Based on the conception of quantitative methods which determines the methodological canon in modern economics [and] a strictly quantitative understanding of things like standardized methods and inferential statistics (Lenger, 2019, p. 947).

> We [economists] regularly treat quantitative data as decisive. We underinvest in modes of qualitative interpretation, though these are often difficult and complex. We do not design institutions to put qualitative understanding on the same plane as the quantitative. We do not create nonbinary attitudes that can bring quantitative and qualitative knowledge together (Newfield et al., 2022, pp. 2-3).

As showed in Chapter 3, this 'closed-ended' approach (Starr, 2014, p. 255) cuts off economic actors' beliefs, motives, preferences, and tastes, as well as meso- and macro- market entities.

This leads to the establishment of a 'nomothetic world view' (Lenger, 2019, p. 946) dominated by the neoclassical approach (Dobusch & Kapeller, 2009), that treats economic agents as *quantitative*

functions (Wilkinson, 2005) within the atomistic and 'micro-founded' framework of 'rational choice theory'. Led by 'a desire for clarification and definition, as well as a need for structuring, all intended to reduce uncertainty and facilitate greater control' (Lenger, 2019, p. 958), this single way of looking at economic phenomena (Rommel & Kasperan, 2022) imperialistically 'colonised' other disciplines (Lazear, 2000), and possibly limited the adoption of QRMs not only within the economics profession but also across those branches of social sciences that were invaded.

Second, the indisputable dominion of 'predictive power' in economics (Friedman, 1953) made economists disregard theory testing that is directed at evaluating the *quality* of models' assumptions or implications and neglect case studies and other forms of detailed evidence (Akerlof, 2020, p. 408) at their support.[167] Although qualitative work is precisely meant to identify, among other things, the problematic assumptions of theoretical frameworks and then formulate valid alternatives (Emami & Olson, 2002, pp. 141-143; Piore, 2006, p. 19), the 'deficiency' of economists' scientific vocabulary prevents this to happen (Piore, 2006). Their inability of distinguishing 'between information and the framework in which the information is processed and understood', underlying the distinction between data (observation) and models (structural) in econometrics, is inadequately transferred to the domain of qualitative research (Piore, 2006, p. 22).

Captured by the obsessive tendency to 'control' for every factor possibly disturbing a causal relationship,[168] economists end up: (1) decontextualising economic variables from the space and time dimensions, (2) undermining the role of contextual elements (Goldschmidt et al., 2016), (3) believing that individual preferences shape social processes, rather than vice versa (see Fourcade et al., 2015), and (4) isolating those aspects which are deemed crucial by 'qualitative' social scientists. Due to this 'causality bias', only research questions that are formulated in causal terms (to wit, how X causes Y, which is the effect of A over B) are considered as such and every economic issue is thus shaped to be treated this way. However:

> Well-done qualitative work can provide scientifically valuable and intellectually helpful ways of adding to the stock of economic knowledge, especially when applied to research questions for which they are well suited (Starr, 2014, p. 238).

[167] Instead, any failure to explain a phenomenon is addressed either by (1) developing a different model, (2) changing its constraints, or (3) hypothetically adjusting its assumptions.
[168] Here, only those variables that meet a specific range of 'p-value' are considered 'statistically significant': an exercise that is 'concerned with inferring quantitative estimates for the parameters of behavioral models on the basis of individual observations' (Piore, 1979, p. 563).

Albeit not fitted for the same purpose, QRMs can be used as rigorously as quantitative methodologies 'without sacrificing our commitment to sound scholarship and systematic analysis' (Shiller, 2019, p. 287).

Third, the supposed value neutrality of economic sciences arguably contributed to economists' preference towards quantitative lens. That is:

> Because many professional economists try to remain nonpartisan, they tend to rely on quantitative, rather than qualitative, observations (Shiller, 2019, p. 279).

They needed models' assumptions to be very simplistic for mathematical reasons, reducing economic problems to mere issues of choice between multiple options.[169] This conceptual poverty (Hirschmann in Swedberg, 1990; see also Cencini, 2015) made non-quantitative dimensions irrelevant, to the eyes of economists, for explaining economic phenomena. Under the belief that 'value is determined by the dynamics of price, […] the debate about different theories of value and the dynamics of value creation virtually vanished from economics departments' (Mazzucato, 2018, pp. 8, 11-14).

4.2. *How* can economics become qualitative?

As shown in Chapter 1, plenty of social sciences' research adopts qualitative methods for the inquiry of economic events, phenomena, and processes. This includes both disciplines adjacent to economics (to wit, sociology, anthropology, and political science) and applied fields whose object of analysis is consumption, markets, or production (to wit, consumer research, marketing, and management). Here, the necessary steps for economics to embrace qualitative research are outlined: shifting philosophical assumptions, developing existing fields, and integrating research methods. These strategies represent viable paths towards QE and are explored more in detail in the following three sections, respectively.

4.2.1. Shifting philosophical assumptions

As shown in the previous sections, the current economics profession standards do not leave space for qualitative inquiry, and non-quantitative insights become difficult to communicate to an economists'

[169] Economic agents are presumed to maximise a certain variable under a given constraint: an exercise that 'is concerned with the outcome of this maximizing process and with the interaction of economic units behaving this way' (Piore, 1979, pp. 563-564).

audience (Lenger, 2019, p. 959). One main reason for that is the different philosophical assumptions that qualitative research entails when compared to quantitative research. That is:

> The qualitative methods that underpin the work of many interpretive social scientists often do not square well with economists' formal aspirations, with their views on causality, or with their predilection for methodological and theoretical precision over real-world accuracy (Fourcade et al., 2015, p. 93).

In fact, these are 'differences in assumptions about what reality is and whether or not it is measurable' (Newman & Benz, 1998, p. 2); namely, fundamental differences in the ontological, epistemological, and methodological frameworks underpinning the two research traditions.

To overcome them, an increased degree of 'reflexivity' over methodological, epistemological, and ontological assumptions is required. Since economists 'do too much uncritical empirical work' and 'deceive themselves with the refinements of their methods' (Solow in Swedberg, 1990, p. 273), they should better assess their positionality over their own values and assumptions (Finlay & Gough, 2003; for a discussion of reflexivity in economics see Basole & Ramnarain, 2016, pp. 143-144; Rao, 2023)[170] in order 'to attenuate potential problems or issues of bias' (Starr, 2014, p. 256) and 'reduce the distance between the investigator and the subject under investigation' (Chamlee-Wright, 2011, p. 159). Only by acknowledging their purpose of inquiry, causality considerations, treatment of outliers, sample selection practices, and validity assumptions (Pickbourn & Ramnarain, 2016), economists can truly grasp the potential contribution of qualitative research. Drawing upon Chapter 1 and Chapter 3, this section discusses the shifts in philosophy of science needed for economists to embrace qualitative inquiry and appreciate its scientific role.

First, the required shift in ontological terms concerns economics' object of analysis. It entails moving away from the neoclassical definition of economics, as strictly focused on the study of human behaviour, towards a broader account of what economics is. Namely:

> The study of how human beings interact for the provisioning of their livelihoods in markets, the state, and communities. […] It is both abstract and moral, both quantitative and qualitative, and concerned both with human means and ends as well as with material processes and money flows (van Staveren, 2015, pp. 11-13).

Surrounding this shift, a new conception of the economy as an open, evolving system (Lawson, 2003; Dow, 2004a, 2009) shall be useful. Like for Marxist, ecological, and feminist economists, this calls for critical realist (Lee, 2016) and relativist (Anderson, 1986) approaches (for a discussion of critical realism and empirical methods see Downward et al., 2002) to be adopted.

[170] Inevitably subjected to selection and valuation biases, the researcher can overcome them through the use of qualitative methods (O'Hara, 1999).

Second, the epistemological premises of economics should also be modified to accommodate qualitative inquiry. This entails a shift from the positivist paradigms underlying quantitative methods to those philosophical frameworks supporting qualitative research: phenomenological, constructivist, interpretivist, and post-modernist traditions (Flick et al., 2004; Jemna, 2016). Rather than looking for neutral, objective, verifiable, and replicable knowledge, the scholars embracing these epistemological positions gather insights from within the object of analysis itself. This implies getting *deeper* into the individual level by exploring actors' beliefs, motives, and preferences (Askegaard & Linnet, 2011) and *higher* towards meso- and macro-levels of analysis including broader contextual elements, social structures, power and gender relations (van Staveren, 2015, p. 8).

Third, methodological frameworks should also change. From hypothetico-deductive (to wit, mathematical models) and structured, inductive methods (to wit, surveys, experiments) based upon explanatory and predictive powers, to less structured tools (to wit, interviews, observations), 'creative induction' (Hill & Meagher, 1999, p. 16), or abductive methods meant 'simply to acknowledge that an if-then statement can be valuable even if the intervening causal link has not or cannot be identified' (Alba, 2011, p. 985). This 'informal kind of Bayesian logic' (Ragin et al., 2004, p. 49) supports most of qualitative theory building, including grounded theory (Piore, 2006), field theory (Lebaron, 2000, 2001; Schmidt-Wellenburg & Lebaron, 2018), and discourse analysis (Maesse, 2022).

Fourth, a shift in axiological terms is required. This entails modifying the scope of economic research from measuring variables, testing hypotheses, or spotting causality for generalising findings across contexts and detecting patterns over time, to describing in detail, providing complex accounts, generating hypotheses (Bewley, 2002), and building theories (Piore, 2006) to 'establish new insights and to reveal subjective associations of meaning' (Lenger, 2019, p. 950). That is because:

> Discovery requires a genuine openness in intellectual posture. And at the same time, discovery is always channeled through our theoretic lenses. There is an iterative give and take between what we learn in the field and what we know or think we know from our training. But it is in the clash between what our theory leads us to expect and what we see on the ground and in the discovery of what is behind the dissonance that scholarship is born (Chamlee-Wright, 2010b, p. 330).

This also implies the need for economic researchers to overcome their uneasiness when confronting the disadvantages of QRMs, including the possibility of sampling errors, the difficulties of mastering interpretive techniques, the risk of finding unexpected results, and the subjective nature of data (Berik, 1997; Pickbourn & Ramnarain, 2016).

Lastly, criteria for assessing economics' scientific contributions shall be adapted according to the previous points. Therefore, qualitative research should not be evaluated by the same standards of quantitative research and econometric evidence (Piore, 1979, pp. 563-564); with that, the concepts of

external validity, generalisability, representativeness, verifiability, and falsifiability must be adjusted for qualitative findings. In doing so, the equivalent scientific criteria of transferability, contrastability (Flyvbjerg, 2011), and 'verification' (Jemna, 2016, pp. 158-160) shall indeed be used. Similarly, the application of QRMs shall build upon the re-assessment of internal and construct validity in economic research (see for instance Jiménez-Buedo & Russo, 2021).

4.2.2. Developing existing fields

Besides shifting the philosophical assumptions, an additional – necessary but not sufficient – strategy to adopt QRMs in economics is to develop existing fields that already did that successfully. Although qualitative inquiry is *de facto* non-existing in standard economic research, a few examples reveal their potential contribution. This section will list those studies that inquire on economic matters yet are not published by economics journals nor taught in economics classes. These include research works from both economics itself and adjacent social sciences, representing relevant points of entry for qualitative research into economic studies.

4.2.2.1. Qualitative economic research

Originally, qualitative research in economics was not so scarce. Classical economists, in fact, directly observed their object of study (to wit, industries, production processes) through 'pin factory' or 'shop floor' visits (Starr, 2014, p. 242). Until then, a lot of fundamental economic theory was informed by the implicit or explicit adoption of qualitative methodologies (see for instance Borenstein et al., 1998; Helper, 2000; Bewley, 2002; Piore, 2006; Bergmann, 2007; see also Leech & Onwuegbuzie, 2008; Flick, 2014; Miles et al., 2014). However, the increasing supremacy of quantitative, econometric, and experimental techniques caused the extinction of QRMs among the modern species of economists.[171] As a result, contemporary qualitative studies in economics are the exception rather than the rule.

Today, a few attempts to shift economics towards qualitative accounts emphasise one or more aspects of qualitative research that would benefit the discipline. These include, for instance: (1) 'main street economics', allowing 'economists independently to examine economic life from close up, [and] like experimental economics, may be thought of as part of behavioral economics' (Bewley, 2002, p. 352); (2) 'real-world economics' (Davis, 2006; Fullbrook, 2006), which stresses the need to account for real world facts in economic studies; (3) 'contextual economics' (Goldschmidt et al., 2016), which

[171] Exceptions from the XX century include qualitative studies on price formation (Hall & Hitch, 1939), labour markets (Lester, 1946; Myers & Shultz, 1951; Reynolds, 1951), and investment decisions (Duesenberry, 1958).

highlights the role of context in economic works; (4) 'cultural economics' (Beugelsdijk & Maseland, 2011; Sum & Jessop, 2013), particularly emphasising cultural aspects in economic analysis; and (5) the 'economics of meaning' (Lavoie & Storr, 2011), which makes economists recognise 'the essential connection between individual purpose, plan formation, expectations, action, and learning, on the one hand, and widespread social patterns on the other' (Chamlee-Wright, 2011, p. 165).

Besides these minor fields, the intentional use of QRMs in economic domains is found in three areas. First, in applied works, including: (1) finance studies (Scheibl & Wood, 2005; Burton, 2007; Gezici, 2016; Muñoz, 2016) on banks' money creation (Werner, 2014), the 'Wall Street culture' (Ho, 2009), and household micro-financial behaviour (Stum, 2001; Jefferson, 2007; Dema-Moreno, 2009); (2) health research (Lincoln, 1992; Sandelowski, 2000; McMillan et al., 2007; Weiner et al., 2011) and health economics studies (Coast, 1999; Coast et al., 2004; Obermann et al., 2013)[172] on wellbeing (Hiswåls et al., 2017); (3) development studies (White, 2002; Rao & Woolcock, 2003; Colin, 2008; Rao, 2008; Lyon & Porter, 2009; Deere & Catanzarite, 2016; Pickbourn, 2016); and (4) labour studies (Bewley, 1995, 1999) on wage and price rigidity (Blinder, 1990, 1991, 1994; Blinder et al., 1998),[173] informal and domestic work (Meagher, 1997; Hill & Meagher, 1999), childcare (Strober et al., 1995), workers' attitudes towards unions (Cregan, 2005), and middle working class life (Roberson, 1998).

Second, HE proposes different methodological approaches including qualitative research (for a discussion of HE' approaches see Lawson, 2003; Basole & Ramnarain, 2016; Lee & Cronin, 2016). Here, feminist economists (see for instance Dema-Moreno, 2009; Hesse-Biber, 2010) especially stand out, with studies on power and preference formation (Olmsted, 1997; Emami & Olson, 2002), quality of life (O'Hara, 1999), and survey research (Berik, 1997; Kim, 1997; see also Schwartz-Shea, 2021). Similarly, Austrian economists show how qualitative evidence, such as ethnographic field interviews, is key to understand social learning and order (Chamlee-Wright, 1997; Storr, 2004; Chamlee-Wright, 2010a).

Third, the latest evolutions of BE show promising avenues for qualitative economic research (Gordon, 2011; Starr, 2014; see also Shiller, 2019, pp. 277-279). Drawing on the limits of behavioural policy outlined in Chapter 2, scholars recently recognised the need to embed sociological insights (to wit, Bourdieu's approach and social practice theory[174]) (Peters & Reisch, 2023), evolutionary biology (Schimmelpfennig & Muthukrishna, 2023), and anthropology and hermeneutics (Piore, 2006, pp. 22-

[172] In fact, 'narrow behaviorism has led to an over-simplification of the health care discussion. […] There should be room for a much richer, more humanistic approach taking into account human finitude' (Léonard & Arnsperger, 2009, p. 128; for a discussion of the use of numbers in health policy see John, 2022).
[173] Whereas in traditional labour economics it is usually assumed that wages are rigid during recessions since employers do not want to risk losing employees by reducing their salaries, evidence from qualitative interviews of business managers showed that 'wage rigidity stems from a desire to encourage loyalty' (Bewley, 1999, p. 1; see also Bewley, 2002).
[174] Practice theory is extensively adopted in applied disciplines including consumer research, for instance (see Halkier et al., 2011; Altman et al., 2023).

23) into BE. This would let economists (1) access 'the underlying causes for the attitudes, preferences, beliefs, ideologies and subsequent behaviours' (Schimmelpfennig & Muthukrishna, 2023, p. 14), (2) assess context and path dependence for the behavioural interventions' effectiveness (for a discussion see Akerlof, 2020, pp. 412-413; see also Chater & Loewenstein, 2023), and (3) combine econometrics and experimental evidence with interviews and ethnographies (Piore, 2006).

Nonetheless, this is coherent with the principle of EBM, requiring policy and business to draw upon empirical evidence. In this context, it was found that the 'behaviourally informed organizations' (Soman & Yeung, 2020), albeit legitimising their practices by promoting the use of experimentation, in fact adopt traditional market research and qualitative insights (Conte & Pellandini-Simányi, 2023). Economists, including experimentalists, should rather treat qualitative data 'as inputs into the revision of theory' and thus consider it as 'essentially equivalent to the products of the laboratory experiments conducted within the emergent subfield of behavior economics'[175] (Piore, 2006, p. 22).

4.2.2.2. Adjacent disciplines

A key source of inspiration for applying QRMs to economics is represented by adjacent fields, which include economic sociology, economic anthropology, and economic geography, among others. These draw upon other social sciences (1) applying a broader range of empirical techniques, (2) accounting for higher levels of analysis, and (3) offering more critical perspectives to economic issues compared to economics itself. Indeed, they allow to analyse neoliberal markets, financial crises, performativity, policy discourses, human factors of organisations, and sociocultural aspects of consumption besides behavioural elements.

As shown in Chapter 2, these areas of research transfer their theoretical and methodological frameworks into applied and interdisciplinary work to analyse consumers, organisations, and markets (for an account of how they analyse markets see Slater, 2002; for an account of how they use QRMs to study economic issues see Jemna, 2016). First, in consumer research, QRMs are employed to study: (1) consumer choice (Allen, 2002; Karababa & Ger, 2011), taste (Arsel & Bean, 2013; Thompson et al., 2018), trends (Sandikci & Ger, 2010), status (Üstüner & Holt, 2010; Saatcioglu & Ozanne, 2013), lifestyle (Bernthal et al., 2005), engagement (Cetină et al., 2014), attitude (Hoek et al., 2013), pleasure (Goulding et al., 2009), pain (Scott et al., 2017), and desire (Kozinets et al., 2017); (2) value creation and transformation (Bardhi et al., 2012; Scaraboto, 2015; Figueiredo & Scaraboto, 2016; Scaraboto & Figueiredo, 2022); and (3) consumption practices (Thompson & Coskuner-Balli, 2007; Kozinets, 2008; Varman & Belk, 2009; Humphreys, 2010; Coskuner-Balli, 2020).

[175] In fact, March and Simon's (1958/1993) theory of organisations derives from qualitative interviews, and Duesenberry's (1949) consumption theory is based upon psychoanalytic theory (Piore, 1979, p. 564), for instance.

Second, in organisation and business studies QRMs are adopted for exploring organisational identity, behaviour, and change (Reid, 1993; Sutton, 1996; see also Eggers & Kraus, 2011; Fast & Clark, 2012; Symon & Cassell, 2012; Schor, 2017). IO scholars, for instance, applied them to study product design (Lester & Piore, 2004), open source software (Lerner & Tirole, 2005), the 'industrial divide' (Piore & Sabel, 1984), the automotive industry's supply chain (Helper, 1995), control rights in biotechnology (Lerner & Merges, 1998), steel plants' human resources practices (Ichniowski et al., 1995), and innovation in the pharma industry (Cockburn & Henderson, 1998) and digital banking (Autor et al., 2002).[176] Moreover, *corporate governance* studies (Marris, 1964; Galbraith, 1967/2007) examined leadership styles (Pihlak & Alas, 2012), pension funds (Tilba & McNulty, 2013), human resource management (Kaudela-Baum & Endrissat, 2009), and board tasks' evolution (Machold & Farquhar, 2013), among others.

Finally, economic issues have also been tackled by legal scholars. The interdisciplinary field of 'law and economics', for instance, crosses economic research and legal issues by adopting a fruitful mix of both qualitative and quantitative methods. While economists are traditionally oriented towards 'positivist' analyses of markets, law experts offer 'normative' analyses of economic phenomena that provide non-standard perspectives and unexpected conclusions. For instance, they formulated: (1) the economic value of 'choice of law' (Michaels, 2008), (2) the quality of 'rule of laws' and institutions, which impacts freedom and economic prosperity (Zywicki, 2003; Carothers, 2009), and (3) the legal origins, traditions, and rules affecting socioeconomic and financial development (Mahoney, 2001; La Porta et al., 2008).

4.2.3. Integrating research methods

Qualitative and quantitative research methods share the same pitfalls (Herring, 2003), methodological risks (White, 2002), type of data produced (Hentschel, 2003), and evidential reasoning (Matta, 2019). Yet, the 'qualitative-quantitative dichotomy'[177] formed methodological tribes across the behavioural and social sciences so that, more often than not, 'anthropology is as closely identified with qualitative, ethnographic approaches, as economics is with quantitative, statistical ones' (Basole & Ramnarain, 2016, p. 135). Albeit some scepticism towards the integration of qualitative and quantitative methods (Smith & Heshusius, 1986; Sayer, 1992/2010; for the difficulties concerning the review process see

[176] Many of these works used so-called 'insider econometrics', combining qualitative investigation of business processes with quantitative analysis (Ichniowski et al., 1995; see also Starr, 2014, p. 253).
[177] Derived from the distinction between the natural and the social sciences' methods (Matta, 2015, 2020), in some applied branches, the qualitative-quantitative separation is insignificant; simply depending on the research question, and the topic of interest (Starr, 2014).

Szostak, 2016), scholars believe that they can be successfully merged (Fiorito & Samuels, 2000; Starr, 2014; Basole & Ramnarain, 2016; Cronin, 2016; see also Pickbourn, 2016; Pickbourn & Ramnarain, 2016) despite their different philosophical foundations (Tashakkori & Teddlie, 2003; Shah & Corley, 2006; Yin, 2006).[178]

So-called 'mixed methods' research proposes concrete integration strategies to feasibly bridge the gap between the two methodological traditions (Howe, 1988; Lin, 1998; Sale et al., 2002; White, 2002; Hentschel, 2003; Johnson & Turner, 2003; Brewer & Hunter, 2006; Mahoney & Goertz, 2006; see also Shah & Corley, 2006; Johnson et al., 2007; Starr, 2014; Lee, 2016; Morgan, 2016). That is:

> Methods that test a theory can be combined with inductive methods that suggest new hypotheses. Methods that identify the results of a process can be combined with methods that follow agents through time and space. And methods that generalize can be combined with methods that study individual cases (Szostak, 2016, p. 65).

More systematically, this presupposes different research uses (that is, triangulation, complementarity, initiation, development, and expansion)[179] as well as research designs (that is, concurrent/convergent, sequential, and multilevel/transformative)[180] (Greene et al., 1989; Morse, 1991; Caracelli & Greene, 1993; Tashakkori & Teddlie, 1998; Morse, 2003; Tashakkori & Creswell, 2007; see also Cronin et al., 2008; Cronin, 2016; Creswell & Creswell, 2022).

Indeed, QRMs can be adopted at different times (see Table 5): (1) *ex ante*, with an explorative aim directed at defining the context, assumptions, and hypotheses, (2) *in itinere*, to check for internal validity issues, and/or (3) *ex post*, to interpret quantitative results (Coast, 1999).

[178] In this sense, the dichotomy shall be seen as a 'methodological continuum' (Newman & Benz, 1998; Benz & Newman, 2008).
[179] These can be also distinguished into: data transformation (that is, transforming quantitative to qualitative data and vice versa), data consolidation (that is, comparing qualitative with quantitative data, or vice versa), typology development (that is, deriving categories from quantitative data and using them to analyse qualitative data, or vice versa), and extreme-case analysis (that is, adopting qualitative data for identifying contrasting cases and quantitative testing, or vice versa) (Cronin, 2016, p. 294).
[180] In particular, concurrent/convergent research designs use comparative analysis of quantitative and qualitative outputs for triangulation purposes, sequential research designs use qualitative data to develop quantitative analysis (or vice versa) for exploratory and explanatory scopes, and multilevel research designs use different methods at different analytical levels (Cronin, 2016, p. 291).

Table 5 – Mixed methods

Timeline	Scope				
Ex ante	Exploring the context and providing primary data	Generating hypotheses and building theories	Designing surveys and experiments	Brainstorming on possible causality effects	Detecting significant factors at play
In itinere	Sense-making and interpreting data together	Checking for construct and internal validity issues	Complementing non-observable data	Enriching quantitative findings	Identifying externalities of policy interventions
Ex post	Confirming or contradicting quantitative findings	Unveiling endogeneity issues	Solving measurement errors	Crosschecking and replicating quantitative studies	Understanding the failures of experiments

Source: author's elaboration.

Some examples include the following strategies:

> (a) Conducting a first exploratory, qualitative phase, which is used to design a second quantitative phase intended to generalize results to the population; (b) first administering a large-scale survey, then following up with in-depth interviews or focus groups to round out and enrich the findings; and/or (c) fielding the two types of projects concurrently and analyzing and interpreting the data together (Starr, 2014, pp. 242-243).

These are adopted differently in different fields, yet economists might equally benefit from each of them in a broad range of applications.

Albeit mostly by heterodox economists, several works adopt mixed methods for the study of economic phenomena (see for instance Chester, 2016a; Davidson, 2016; Muñoz, 2016). Illustrative examples include the use of qualitative interviews combined with quantitative analysis to understand investors' (Gezici, 2016) and landholders' behaviour (Meurs, 2016), as well as the use of quantitative surveys together with qualitative data sources to examine low-income households (Chester, 2016b), care workers' employment decisions (Jefferson et al., 2016), remittance flows (Pickbourn, 2016), and intra-household wealth distribution (Deere & Catanzarite, 2016).[181] In all these cases, 'multiple and

[181] Mixed methods research also includes 'studies designing or gauging the effects of social programs, especially among lower income groups; studies of willingness to pay for environmental interventions; studies related to poverty and capabilities sponsored by the World Bank; case-study research into innovation, R&D, and technological diffusion; and feminist-economics research into the "lived experiences" of women's economic lives' (Starr, 2014, p. 238).

mixed methods research offers a much richer toolkit to examine economic problems from a variety of perspectives with custom methods suited for the particular task' (Cronin, 2016, p. 286).

Finally, QRMs may complement experimental fieldwork by formulating hypotheses on causal effects, detecting causality directions, brainstorming about instrumental or control variables, looking for endogenous correlations, facilitating crosschecking and replication, improving the measurement of outcomes, unveiling the nature of bias and measurement errors, assessing unobservable variables, interpreting quantitative findings, and identifying externalities of interventions (Piore, 1979; Bewley, 2002; Rao & Woolcock, 2003; see also Piore, 2006).[182] For instance:

> Qualitative methods can also help in circumstances where a quantitative survey may be difficult to administer. Certain marginalized communities, for example, are small in number (the disabled, widows) and/or difficult for outsiders to access (sex workers, victims of domestic abuse), rendering them unlikely subjects for study via a large representative survey (Rao & Woolcock, 2003, p. 2).

In rare cases, QRMs can also be adopted to understand the causes of success (or explain the failures) of field experiments (Starr, 2014, p. 257)[183] and to draft causal claims or identify causal relationships (for a discussion see Beck, 2006; see also Mahoney & Goertz, 2006).

4.3. *What* could qualitative economics do?

Albeit valid examples of the potential contributions of qualitative methodology for economic studies, the literature presented above did not establish routes of qualitative economic research. In fact, those studies represent the exception that proves the rule of QRMs' chronic absence in economists' work. The scope of this section is indeed to provide use cases for their fruitful application to both economic theory and policy, and shed light on their concrete benefits in the context of specific economic subject matters.[184] These are either unsolved theoretical issues or policy challenges where qualitative insights can best contribute. While the fields of 'qualitative' microeconomics and macroeconomics are coined to address the former, the areas of environment and climate change, markets and financial crises, and poverty and inequality represent the latter.

[182] Similarly, qualitative research can help better using quantitative methods, by confirming or rationalising quantitative claims, eventually improving numerical procedures (Badano, 2022; Junghans, 2022; Mandell, 2022; Steffen, 2022).
[183] For instance, when there is a limited number of cases that do not (1) coherently deliver the same theoretical information (Mahoney & Goertz, 2006) or (2) provide sound and robust conclusions, qualitative analysis might be useful (Mark & Shotland, 1987).
[184] The *Journal of Economic Literature* classification codes give an overview of all objects of study defining economics (American Economic Association, 2024a).

4.3.1. Economic theory

Being the 'sins of omissions' (Akerlof, 2020) of the economics discipline, the peculiarities of QRMs can be applied both in micro- and macro-economic domains of analysis. At the microeconomic level:

> The economics discipline's excessive reliance on formal theoretical models and quantitative empirical methods have inhibited the discovery that would otherwise unfold. […] This is where ethnographic field work, archival research, and in-depth case analysis […] allow us to gain access to not only the actions of others, but also the mental templates shaping their action (Chamlee-Wright, 2011, pp. 159-166).

> It is not at all clear how the actors acquire the knowledge that economists attribute to them; if that knowledge could in fact be abstracted from their own experience and, if not, how their experience would in fact lead them to conceptualize the decision-making problems which they face. […] Open-ended interviews and participant observation may be interpreted as instruments for answering these types of questions (Piore, 1979, p. 566).

Economists' introspection exercises (Machlup, 1946) through 'self-interviews' (Piore, 1979, p. 569) are not enough.[185] Albeit considered the most basic form of qualitative inquiry (for a discussion see Chamlee-Wright, 2011, pp. 165-166; see also Lavoie, 2011), introspection by itself 'does not give a clear indication of appropriate motives and emotional reactions' nor accounts for 'the constraints of the problem that an economic agent faces' (Bewley, 2002, p. 350) – especially in uncertain scenarios or unstable environments (Chamlee-Wright, 2010b).

Qualitative inquiry, instead, allows economists to access the true causes of consumption and understand demand formation. First, in 'generating practical knowledge' regarding economic actors' behaviour, by uncovering their tastes and preferences (Lenger, 2019, p. 959). Economists typically believe that '*de gustibus non est disputandum*' (Stigler & Becker, 1977): that is, consumer tastes and preferences are assumed to be (1) fixed over time and across contexts (Fourcade, 2018; see also Kreps, 2023), and (2) given *a priori* economic analysis (Boulding, 1969, p. 2). In fact:

> There is no justification in traditional utility theory for assuming anything about physical or spiritual needs. […] Rational objectives are tidied out of sight and trivialized under the term "tastes" (Douglas & Isherwood, 1979/1996, p. 6).

However, they are *de facto* profoundly shaped by relative social positions (see Bourdieu, 1979/1984) and moulded by the surrounding environment (for a review see Raworth, 2017, pp. 94-96).

[185] This shall be accompanied by interviews and 'inferences from observed actions of individuals' to gather 'knowledge of the motives and habits of consumers and of the profit-making objectives of business enterprise' (Koopmans, 1947, p. 166).

Second, qualitative research is especially effective in unveiling consumer beliefs and motives. Economists' theory of consumer behaviour conceives cardinal utility, indifference curves, and budget constraints as the only factors steering consumption (Zamagni, 1994, p. 15). In fact:

> In traditional economic theory, motivations come from a priori assumptions regarding what people plausibly maximize. But there is a much less restrictive, and more general, characterization of the range of possible motivations […] at the time they make their decisions (Akerlof, 2020, p. 412).

> People are not machines and that they often do things where they are not fully aware of what their motivations are and how they got into it. […] It is clearly dangerous to assume that something that you may not know about is going to have no effect on your system (Akerlof in Swedberg, 1990, pp. 74-75).

However, consumption theory includes the 'human factor' (Gordon, 2011; see also Shiller, 2019, pp. 279-286); that is, 'the objectives, constraints, and incentives that economic actors face' (Helper, 2000, p. 231), their personal values (Schwartz, 1994), motivations (White, 2002; Kanbur, 2003; Mahoney & Goertz, 2006), experiences (Logan, 2015), perceptions, opinions, attitudes, and feelings underlying behaviour in its 'natural state' (Frankfort-Nachmias et al., 2015; Jemna, 2016, pp. 158-160).

Third, qualitative research in microeconomics can inform innovative approaches to the fields of *economics of wellbeing* and *happiness economics* (Frey & Stutzer, 2000, 2002; see also Odermatt & Stutzer, 2017), solving their pending issues. By merging economic, behavioural, and sociocultural insights, the use of interviews, observations, and ethnographies in these areas would (1) uncover the factors of life satisfaction that cannot be measured by quantitative methodologies (Beckerman, 2011, pp. 105-108; for a discussion of the quantification of wellbeing see Alexandrova & Singh, 2022), (2) unveil the meso- and macro- levels of wellbeing, and (3) grasp the population needs to build effective welfare policies that target the true causes of individual happiness.

The potential contribution of qualitative inquiry, however, is not limited to microeconomics. At the macroeconomic level, QRMs such as observational and ethnographic techniques had already been adopted by classical and marginal economists to understand production processes and poverty dynamics, respectively (Helper, 2000). Contemporary macroeconomists would benefit from them, on the one hand, to study demand-side aspects related with economic life (Chang, 2014). For instance:

> You do not know what the unemployment rate really means until you know something about the condition of the unemployed and what they are doing. Are they well off financially or suffering? Are they searching for work or enjoying leisure activities? Are they confused about how to look for work or fairly well informed? If they were simply confused, a cyclical rise in joblessness might dissipate as the unemployed learned what to do. If they were not confused, unemployment might not decline until aggregate demand increased (Bewley, 2002, p. 352).

On the other hand, to approach policy implementation questions (Bewley, 2002, p. 351)[186] requiring an understanding of 'major vectors of rapid change in culture, in zeitgeist, and in economic behavior' (Shiller, 2019, p. xiii)[187] that escape the narrow lens of quantitative methods such as global warming, Soviet Union economics, United States health policy, the bitcoin hype, market panic, automation and job replacement, real estate booms and busts, and stock market bubbles (for examples of the narrative approach applied to understand actors' behaviour see Shiller, 2019; Romer & Romer, 2023).[188]

In these cases, QRMs help, first, providing a complete picture of the entities and interactions underlying complex economic outcomes (Focardi, 2015, pp. 10-11; Raworth, 2017, pp. 130-135; see also Kirman, 2018):[189] 'individual agency, social norms, cultural values, and economic institutions' (Pickbourn & Ramnarain, 2016, p. 88).

> By employing research methods that lie outside the constraints of quantitative data economists can add a new dimension to their research and hopefully develop a more complex, multi-layered picture of the economic sphere. […] Most importantly, qualitative methods can produce data that requires us to ask new or different questions important to understanding economic processes (Hill & Meagher, 1999, p. 17).

> Rather than generalizability, or breadth, qualitative explorations emphasize […] richness of detail and description […] by providing an in-depth analysis of how complex, often intangible human and family systems, social norms, belief systems, and cultural experiences impact the topic being studied (Pickbourn & Ramnarain, 2016, p. 76).

In this sense, qualitative research is like stepping inside a hyper-complex puzzle of a city size with a very high number of pieces so that 'we can understand what constitutes the environment in which our puzzle pieces (or people) are operating [and] observe individual behavior and the interactions between these living and interpreting beings' (Chamlee-Wright, 2010b, pp. 323-325).

Second, qualitative inquiry allows to uncover power relations and structural variables playing out within economic systems (van Staveren, 2015, pp. 28-33; Basole & Ramnarain, 2016). Since they are 'often hard if not impossible to capture' in quantitative terms, these dimensions 'are structurally overlooked' by economists, who 'lack attention for [the] structures, institutions, […] and networks' that 'deeply shape economic dynamics' (Economics Education, 2024, internet). For instance:

[186] Due to the external validity issues of experimental research mentioned above, qualitative research is needed to acquire 'knowledge about the compatibility of populations and institutions' from the context where policy recommendations shall be applied (Obermann et al., 2013, p. 253).
[187] Qualitative research allows to access people's narratives, which, in turn, can help explain major economic trends, such as why some items 'went viral', and 'how narrative contagion affects economic events' (Shiller, 2019, p. xi).
[188] Similarly, the new field of *behavioural macroeconomics* looks at how economic agents' behavioural features, deviating from the standard theory of rational action, affect macroeconomic trends (De Grauwe, 2013; De Grauwe & Ji, 2019).
[189] In fact, 'the output of economies is primarily the creation of order and complexity, both at the level of products and social structures' (Focardi, 2015, p. 10).

> To understand the dynamics in the banking system that lead to the development of socially dangerous sub-prime mortgage markets, detailed fieldwork and interviews with all sorts of bank employees are absolutely necessary. Likewise, to understand the field of power relations and interests surrounding the fossil fuel companies in the Rotterdam port, it is not enough to have data on flows of goods and investment around this sector. Open interviews, process-tracing and techniques like participatory observations among traders will reveal much more (Economics Education, 2024, internet).

However, these aspects are fundamentally 'ignored by neoclassical economics, which takes a purely *quantitative* approach without considering changes in the *quality* of the output or the power structure of economies' (Focardi, 2015, pp. 10-12, emphasis added).

Third, QRMs offer the chance to capture cultural aspects and account for cultural differences across different contexts.[190] Grasping a richer range of information, they are especially equipped to analyse those sociocultural and contextual elements, manifested by the relationships between human systems, social norms, belief systems, cultural experiences, and the research itself (see Granovetter, 1985), that quantitative methods' economic and behavioural focus loses sight of (Goldschmidt et al., 2016). Nevertheless:

> Just as biological evolution is mainly driven by the transmission of genes between generations, cultural evolution is driven by the transmission of social and cultural information through social learning. […] Incorporating cultural evolution forces us to consider not just differences in psychology, norms and preferences, but their origins and dynamics. […] So yes, context matters (Schimmelpfennig & Muthukrishna, 2023, p. 7).

Furthermore, by 'understanding the context of a specific case and acquiring an overview of how those involved perceive the situation' (de Muijnck & Tieleman, 2022, p. 239), qualitative research accesses 'the forms of cultural knowledge that are actually used to define markets as frameworks for economic analysis' (Slater, 2002, pp. 8-9).

4.3.2. Economic policy

Given economists' privileged role in public discourse (Raworth, 2017), the acknowledged limits of current economic and behavioural policy (Peters & Reisch, 2023; Schimmelpfennig & Muthukrishna, 2023), and the rising recognition of quantitative measures' obstacles (Revesz & Prabhakar, 2023),[191] qualitative research may successfully enter economics through policy, besides academic practice. In

[190] For instance, in different cultures there are different degrees of reciprocity, depending on the type of economy in which that society is embedded (Henrich et al., 2001).
[191] A recent statement from the White House, for example, recites: 'we must measure what we value, not just value what is simple to measure' (Revesz & Prabhakar, 2023, internet).

these regards, scholars fostered the combination of qualitative and quantitative research for policy evaluation (London et al., 2007; Larsen, 2014), intervention (Levitt & Venkatesh, 2000, p. 787), and effectiveness (Turney et al., 2006; see also Starr, 2014, p. 254).[192] Here, three areas will be outlined, where the role of QRMs best stands out: environmental and climate economics, market analysis and finance, and poverty and inequality studies. The qualitative inquiry of these matters, in fact, let new insights emerge, which (1) unveil unprecedented research questions, (2) reveal dynamics not detected by quantitative methods, and (3) critically assess existing solutions.

4.3.2.1. Environment and climate change

The first area that would profit from the use of QRMs is environmental economics (for a discussion of climate policy see Sharpe, 2023, pp. 125-147). In this field, one case concerns the economic value of nature, that is, the attempt to measure monetarily the value of natural resources (for an account of different economic perspectives on nature see van Staveren, 2015, pp. 336-365). This is a particularly difficult task, due to the technical challenges implied in quantitatively measuring the environment[193] and ethical issues underlying the operation (Spash & Asara, 2018). Environmental economists have typically relied on mathematical models of neoclassical derivation in order to suggest climate policy interventions. Supported by these methodological frameworks, they reached ungrounded conclusions and wrong results, leading to counterproductive policies. Three examples are illustrative in this sense.

First, the mainstream approach to climate economics draws on the neoclassical framework of economic incentives supporting the market, viewed as the best system for allocating scarce resources. Carbon emissions are thus seen through the methodologically individualistic, behavioural lens of NE and are conceived as 'negative externalities' of economic activities. In this framework, reducing them requires economic policies aimed at creating disincentives for economic actors to pollute (Nordhaus, 2019, 2021). This leads to the creation of 'carbon emissions markets', where the demand for emitting CO_2 is regulated by governmental means and 'carbon taxes' supposedly compensate for them (for a critique see Sharpe, 2023, pp. 148-159). Besides not solving the issue of air pollution in the first place, this reasoning created additional problems, by suggesting incongruous environmental policy targeting 'optimal' levels of global warming that are much above the earth's biophysical limits (see Nordhaus, 2018a, 2018b), as indicated by environmental scientists (Rockström et al., 2009).

[192] Similarly, few economists stressed the importance of using QRMs to study institutions (Ostrom, 1990; Ménard, 2001; Ostrom, 2005; Deaton, 2010; Schlüter, 2010; Woolcock et al., 2010), tackle gender dynamics (Olmsted, 1997; Emami & Olson, 2002), and address environmental issues (Clark et al., 2000; Svedsäter, 2003).
[193] The difficulties emerging from these attempts represent a major factor causing delays in environmental policy (Buller, 2022).

Second, as explained in Chapter 1, traditional economics neglects time and change dynamics (Sharpe, 2023, pp. 98-102). Since the dominant economic theory is responsible for how to understand, tackle, and respond to the climate crisis, its 'atemporality' and equilibrium-based statics do not allow for useful policy recommendations. In fact:

> Avoiding dangerous climate change demands the largest and fastest economic changes the world has ever seen. […] As if this wasn't hard enough already, economics is systematically giving us the wrong advice about how to do it (Sharpe, 2023, pp. 3-4).

Although the attempts to faithfully estimate the costs of climate change methodologically rely on the same set of mathematical models and econometric techniques, the legitimacy of climate economists in public discourse makes them seem like a valuable resource. However, these methods are ultimately deemed 'worse than useless' (Sharpe, 2023, p. 83) due to their fundamental limitations.

Third, environmental economists conceive nature as 'an infinite property to be extracted rather than a regenerative life source to be protected' (Taskforce on Nature Markets, 2022, p. 20). Albeit drawing upon the assumption of scarce resources, NE constitutes the conceptual basis for designing 'nature markets' that *price* natural elements 'to be preserved, invested in, and restored' (Taskforce on Nature Markets, 2023, pp. 18-20).[194] This way, so-called 'rights of nature' (that is, formal rights to use natural elements) and natural resources themselves are traded through credit, asset, intrinsic, or derivative markets (see Taskforce on Nature Markets, 2023, p. 19). Similarly to 'ecosystem services valuation', that quantifies the 'services' provided by nature (Chee, 2004; Potschin & Haines-Young, 2011; for an account of the ecosystem services approach see Sharpe, 2023, pp. 103-113), this presents important methodological risks.

They include, among others: (1) the misconception of nature value (for an example of the use of quantification for environmental issues see Lusk, 2022), (2) the commodification of nature, (3) the devaluation of natural resources (Gómez-Baggethun & Ruiz-Pérez, 2011), and (4) problems of social justice (Matulis, 2014; Corbera, 2015). As shown in Chapter 3, these issues depend on the established theory of value, that (1) equates value with price, (2) confuses value 'creation' with value 'extraction' (Mazzucato, 2018, pp. 1-3), and (3) mixes 'private' with 'public' value (see Mazzucato, 2011). Non-quantitative assessments would thus allow to underline the *qualitative* aspects of the economic value of nature without renouncing to, but rather complementing its quantitative and monetary measures.

[194] This procedure assesses the 'value' of the earth's natural resources by evaluating the monetary costs of *not* disposing of them (to wit, clean water, breathable air); an approach that, despite its limits, is increasingly adopted by leading national governments (see Revesz & Prabhakar, 2023).

Another case concerns sustainable consumption. Environmental economists reduce 'systemic' challenges, like the climate crisis, to simple issues of incentive design and individual behaviour; under the assumption that consumers hold a degree of agency over them, through their choices (to wit, food, fashion, transport, and housing) (Mamouni Limnios et al., 2009; see also Döbbe & Cederberg, 2024). In this framework, the economic (Symons et al., 1994) and behavioural barriers (Carlsson et al., 2021; Hankammer et al., 2021) to sustainable consumption shall be tackled by economic disincentives (to wit, taxes and price mechanisms) (Dogbe & Gil, 2018; Saelim, 2019; Liu et al., 2022) and behavioural interventions (to wit, nudges and 'choice architecture') (Marshall, 2015; Lee et al., 2020; Wensing et al., 2020; Akbulut-Yuksel & Boulatoff, 2021), respectively.

However, this is a limited approach, leading to important misconceptions and possibly useless policy implications. In fact:

> Thinking […] that many of society's most pressing problems can be addressed cheaply and effectively at the level of the individual, without modifying the system in which the individual operates […] was a mistake. […] Results from such interventions have been disappointingly modest. But more importantly, they have guided many […] behavioral scientists to frame policy problems in individual, not systemic, terms. […] Seeing individual cognitive limitations as the source of society's problems is like seeing human physiological limitations as the key to the problems of malnutrition or lack of shelter. […] Having a real impact will require systemic transformation on a huge scale: changing how we heat our homes, travel, ship goods, and produce and consume food; rethinking manufacturing; and vastly expanding the production, storage and transmission of green electricity (Chater & Loewenstein, 2023, p. 10).

That is, fundamental changes in social values across the whole economy are required, and structural modifications transforming the entire systems of production, distribution, and consumption in every sector are needed (Mazzucato, 2018, pp. 279-280).

Furthermore, to overcome the limits of economic policy – namely, behavioural interventions' context-dependence and long-term ineffectiveness – and address the lack of sociocultural dimensions of human behaviour in economic theory, economists shall learn how to distinguish between consumer *behaviour* and consumer *culture*. As shown in Chapter 2, this would allow environmental economists to wear the analytical lens of other social scientists and thus apply the frameworks of the sociocultural approaches to issues of sustainable consumption (Slater, 2002; see also della Porta & Keating, 2008). This way, economic accounts of consumption could embed non-behavioural features underlying the true causes of consumer attitudes and habits, ultimately informing grounded climate policy to tackle those aspects that trigger 'sustainable' practices. Once again, the thoughtful application of QRMs is key in this sense (see Conte, 2023).

Finally, a contrasting approach to that of environmental economics is carried by the heterodox field of *ecological economics*. Whereas the former focuses on the quantitative measurement of natural resources, the impact evaluation of economic activities over environmental indicators, and the climate policy design based on monetary and behavioural incentives, the latter departs from the neoclassical accounts of environmental questions by (1) conceiving the economy as embedded in the environment and bounded by the 'planetary boundaries', (2) calling for 'regenerative' and 'distributive' economic policies, and (3) fostering 'systemic' and 'long-term' thinking (for an account of *doughnut economics* see Raworth, 2017; see also Spash & Asara, 2018). Ecological economists are, in fact, more open to incorporate qualitative evidence and insights for the sake of building grounded, realistic, and useful theories leading to effective policy interventions.

4.3.2.2. Markets and financial crises

The second policy area where qualitative economic research can provide ground-breaking insights is financial markets. Until the 2008 global financial crisis, economics conceived financial actors as self-interested individuals rationally maximising their profits through the financial market, and neglected the systemic risks deriving from the 'social interaction within and between banks, households, firms, and the government' (van Staveren, 2015, p. 3). These limitations nurtured a self-fulfilling prophecy, which 'resulted in economic models, business strategies, and policy advice that have increased risk levels in the financial sector worldwide' (van Staveren, 2015, p. 4). Although economists are still far from realising the importance of qualitative data, QRMs can help understanding both financial booms and busts.

On the one hand, they allow to study complex market phenomena such as 'qualitative growth' (Focardi, 2015). Drawing on critiques of standard measures of economic growth (Beckerman, 2011, pp. 110-113; Focardi, 2015, pp. 11-12; for a discussion of the gross domestic product see Mazzucato, 2018, pp. 75-100), scholars emphasised its qualitative sides (for an account of heterodox perspectives on economic growth see van Staveren, 2015, pp. 306-335). On the other hand, qualitative approaches can provide alternative explanations to:

> The relatively rare, but serious, depressions and financial crises that occur from decade to decade. […] The patterns of human thinking about the forces that cause economies to boom at times and to stagnate at others, to go through creative times and backward times, to go through phases of compassion and phases of conspicuous consumption and self-promotion, to experience periods of rapid progress and periods of regression (Shiller, 2019, pp. 285-287).

Heterodox economists such as Steve Keen, Nouriel Roubini, Dean Baker, Robert Shiller, and Hyman Minsky (1977), for instance, can offer valuable insights on the pre-crisis financial system's instability (for exceptions see Diamond & Rajan, 2005, 2009; Caballero, 2010; see also van Staveren, 2015, pp. 5-6; Raworth, 2017, pp. 124-126).

Qualitative economists could also explain (1) economies' 'stickiness' (see Banerjee & Duflo, 2019, pp. 333-336), (2) wage rigidity (Bewley, 1999), (3) investment banking business management (Ho, 2009), and (4) the International Monetary Fund's organisational issues leading to the 2008 global financial crisis (International Monetary Fund, 2011; see also Akerlof, 2020, pp. 411-412).[195] In fact:

> Theoretical analysis of the crash would have entailed going beyond the current methodology for economic theory; and its empirical prediction would have entailed examination of tail risk, for which the evidence was unlikely to be in statistical form (Akerlof, 2020, p. 415).

These meso-level analyses are only possible due to the use of QRMs (Humphrey & Lee, 2004; Burton, 2007), ranging from interviews to ethnographies, and the application of conceptual frameworks from *market system dynamics* (Giesler & Fischer, 2017), *interdisciplinary market studies* (Geiger et al., 2024), and *behavioural macroeconomics* (De Grauwe & Ji, 2019), among others.

Furthermore, qualitative research is particularly helpful in the field of consumer finance; for instance, when consumer adoption is key to the success of a specific financial technology. In fact, the rising interest towards cryptocurrencies was captured by a recent study of the World Economic Forum (2022), whose authors interviewed sixteen 'global macroeconomists' offering qualitative assessments – categorised through thematic coding – to understand 'how cryptocurrencies and stablecoins might affect individual economies and the global financial system' (p. 8). Nevertheless, QRMs can also be adopted to study post-crisis phenomena such as the evolution of consumer subjectivities and market moralities emerging from banking regulations after 2008 (Pellandini-Simányi & Conte, 2021).

Finally, qualitative inquiry can inform innovative financial measures such as 'microcredit'.[196] In fact, its originating idea emerged from the field observation of women's financial behaviour in the outer city markets of Bangladesh (Yunus, 1998/2009; see also Conte, 2016), that triggered a financial innovation overcoming the limited access of lower social classes to the traditional banking system.[197]

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[195] Through qualitative interviews with executives, the report outlines the main dynamics characterising the International Monetary Fund's practices during the years preceding the 2008 global financial crisis; among them, group thinking, and fear to report to the higher management, particularly emerged (International Monetary Fund, 2011).

[196] Similarly, social business shifts the economic mindset towards a more *qualitative* account of business, by transcending the one-dimensional feature upon which business success is usually measured: monetary profit (Yunus, 1998/2009).

[197] Representing an important theoretical anomaly of modern economic systems, so-called 'credit rationing' occurs when, at the prevailing interest rate, part of the demand for loans remains unsatisfied; and the bank maximises its profit at a rate that is below the equilibrium rate. This phenomenon can be explained by referring to Akerlof's (1970) 'lemon's principle', as well as the notions of 'adverse selection' and 'moral hazard'.

Being 'relatively free of the preconceived ideas that tend to limit the thinking of most people in the field' (Yunus, 1998/2009, p. 43), economist Muhammad Yunus has established a banking institution that revolutionised the world of microfinance. He famously noticed:

> I found it increasingly difficult to continue to teach elegant theories of economics and the supposedly perfect workings of the free market in the university classroom while needless death was ravaging Bangladesh. Suddenly, I felt the emptiness of those theories in the face of crushing hunger and poverty (Yunus, 1998/2009, p. 44).

Due to the qualitative nature of the factors at play when evaluating microloans' beneficiaries, bankers should embed qualitative interviews and ethnographic work into their practices (Bamberger & Chung, 2000; Kanbur & Shaffer, 2007; Bird et al., 2010; Valente, 2011).

4.3.2.3. Poverty and inequality

The third area benefiting from the use of QRMs is development policy. Albeit acknowledged only by a few development economists (Banerjee & Duflo, 2009, p. 162),[198] they are particularly suitable for understanding poverty dynamics and inequality issues both in the Global North and the Global South. Whether adopted for exploratory reasons in the pre-theoretical phase, applied for interpreting findings in the reporting stage, or complementing randomised experiments, qualitative fieldwork is needed to make 'good economics' (Banerjee & Duflo, 2019) for both theory building and policy making.

Development economics would profit, first, from taking into consideration the 'voices of the poor' (Narayan, Chambers, et al., 2000; Narayan, Patel, et al., 2000); fostering participatory research (see for instance the stakeholder approach by Dench et al., 2004) during fieldwork. Indeed:

> Making greater use of research strategies that give economic agents more opportunities to help shape how economic knowledge evolves may result in knowledge that has better scientific validity, higher social value and better ethical properties than what the discipline has produced to date (Starr, 2014, p. 258).

Second, from looking through higher levels of analysis when tackling poverty issues. This might lead to conclude that the ultimate causes of poverty are *structural* and do not rely on people's *behavioural* traps (Yunus, 1998/2009, p. 232). Third, from complementing quantitative poverty measures (to wit, closed-end surveys) with qualitative evidence (to wit, unstructured interviews) (Valente, 2011; Starr, 2014, pp. 254-255) explicating intangible features such as contextual and sociocultural aspects.

[198] Although advocating for it, development economists do not actually pursue qualitative research; or they do not disclose it in the methodology section of their articles (for a discussion of how qualitative data are treated in economics see Lenger, 2019, pp. 956-957).

At the policy design level, these methods can inform the initial phase (Bamberger & Chung, 2000; Kanbur & Shaffer, 2007; Parker & Kozel, 2007; Bird et al., 2010) as well as the evaluation stage (London et al., 2007). Indeed:

> Policy evaluations are more useful if they provide information not only on the size of effects but also on the mechanisms that led to such effects and the context in which these effects took place. […] One such example is the evaluation of a policy from one developing country to be applied in other developing countries, which could be problematic given the great diversity of the many different […] 'developing countries'. Here, local institutional knowledge and knowledge about the interplay of institutions, the regulatory framework, and the soon-to-be-introduced policy become critical (Obermann et al., 2013, p. 255).

> Because absolute poverty is a complex and multifaceted phenomenon, characterizing it accurately and designing effective policies and programs to lift people out of it requires research methods that can capture its multifaceted character and dynamics. […] One advantage of this work is its ability to unpack how and why given factors affect outcomes, when they may be involved in multiple ways (Starr, 2014, p. 255).

Quantitative and experimental methods – typically adopted by impact evaluation practices –, despite providing rigorous cause-effect dynamics, limit the questions to be asked on poverty, its causes, and processes. So-called 'poor economics' shall thus embed qualitative methodologies to capture the *how* and the *why* of poverty dynamics (Cawthorne, 1995; Spranz et al., 2012).

Qualitative development research successfully analysed: the discourses associated to specific development lifestyles in South Africa (Gudynas, 2011), the influence of social capital on women's entrepreneurial decisions in the Philippines (Yukongdi & Cañete, 2020), the impact of social class on children education in Japan (Yamamoto, 2015), as well as the role of education in poor contexts (Bird et al., 2010), the peculiarities of post-disaster recovery policies (Chamlee-Wright, 2010a), the racial dynamics occurring in cotton picking (Logan, 2015),[199] and the issues of low-income communities' behaviour (Chin, 2001; Turney et al., 2006; Keels, 2008; Buckland et al., 2010). Development studies adopted QRMs, coupled with HE, also to assess: the impact of women trade unions on economic and social security in India (Hill & Meagher, 1999), the demographic structure of the Australian domestic service industry (Meagher, 1997), women empowerment in Sub-Saharan Africa (van Staveren, 1997), healthcare's gender norms in Burkina Faso (Nikièma et al., 2008), and the education, migration, and employment patterns of Palestinian women (Olmsted, 1997).

Finally, other ways of embedding qualitative insights for the analysis of poverty and inequality include historical and literary works informing economic research. Complementing his longitudinal,

[199] This study interestingly shows how qualitative data can provide insights on agricultural productivity that quantitative labour economics could not.

statistical study on the evolution of global inequality, Piketty (2014) employed historical insights and literary references to support economic arguments (for other examples see Stern, 1989; for an account of historical approaches in economics see Coats, 1993; for a discussion of the use of literary thinking in economics see McCloskey, 1982/1998, pp. 20-34). Albeit without primary data collection, Piketty (2014) relied upon secondary, qualitative data analysis to corroborate quantitative empirical evidence (to wit, time series) (see also Chamlee-Wright, 2010a, 2010b). This arguably allowed him to capture the ultimate causes of inequality across social classes.[200]

[200] Inequality is arguably a qualitative phenomenon, being reduced by the improvement of the *quality* of life of the poorest fraction of the population.

Conclusion

> Just as there is no best way to listen to a Tchaikovsky symphony, or to write a book, or to raise a child, there is no best way to investigate social reality. Yet methodology has a role to play in all of this. By showing that science is not the objective, rigorous intellectual endeavor it was once thought to be, and by demonstrating that this need not lead to anarchy, that critical discourse still has a place, the hope is held out that a true picture of the strengths and limitations of scientific practice will emerge. And with luck, this insight may lead to a better, and certainly a more honest, science.
>
> (Caldwell, 1982/1994, p. 252)

Economics is traditionally inclined towards the adoption of *quantitative* research methods (Redman, 1997; Colander, 2008). Throughout its history, the discipline developed a strong emphasis on the use of mathematical techniques, statistical analysis, and econometric tools (Porter, 1986; Morgan, 1990; Weintraub, 2002). More recently, the quantitative nature of empirical economics is also manifested through the increasing employ of big data analysis and laboratory and field experiments (Angrist & Pischke, 2010). This is reflected by the theoretical and methodological issues characterising modern economics: a monist (Dow, 2009; see also Fischer et al., 2018; de Muijnck & Tieleman, 2022) and 'nomothetic' (Lenger, 2019) framework extending into multiple domains and heavily suffering from an individualist, reductionist, and objectivist approach that is applied with technocratic manners.

As a result, economists are biased towards 'hard' evidence, data, and methods (Akerlof, 2020) at the expense of 'soft' and *qualitative* empirical material (Leech & Onwuegbuzie, 2008; Flick, 2014; Miles et al., 2014). In fact, they only consider those economic factors, aspects, and variables that are quantitatively measurable (Boumans, 2004; Boumans & Herfeld, 2022), thus neglecting other types of phenomena (Helper, 2000; Basole & Ramnarain, 2016; Pickbourn & Ramnarain, 2016). Yet, the social sciences do adopt qualitative methodologies to analyse economic behaviour, issues, and topics; and adjacent disciplines (to wit, economic sociology, economic anthropology, economic geography) do study economic matters through qualitative inquiry.

Drawing upon insights from economic methodology, the history of economic thought, and the philosophy of the social sciences, this thesis looked at the historical, institutional, and epistemological reasons underlying this discrepancy and proposed possible strategies to overcome it. These include: (1) shifting economics' philosophical assumptions, (2) developing the existing fields that already use qualitative insights, and (3) integrating different methods to standard research practices. Furthermore, this dissertation outlined the domains, areas, and issues to which qualitative approaches could mostly

contribute, including both microeconomic and macroeconomic theory, as well as policy applications in environmental economics, financial economics, and development economics.

On the one hand, this thesis unveils the profoundly different ontological, epistemological, and axiological assumptions underlying the quantitative and qualitative methodological traditions. On the other hand, it calls for a cultural and philosophical shift in economics towards integrating the two – through, for instance, mixed methods research practices. The fundamental split outlined here should not prevent but rather encourage quantitative and qualitative economists to collaborate, establishing common grounds. Indeed, this shall be reached by merging the priorities of quantitative economics (to wit, generalisability and causality) with the potentials of 'qualitative economics' (to wit, accuracy and exploratory power).

Besides eradicating economists' biases and their preconceptions towards qualitative research, this shift asks for reassessing the role of sociocultural factors over behavioural features in influencing economic actors' choices, explaining economic events, or determining economic facts. Building upon the methodological approach of qualitative social sciences, economists can improve their theoretical, empirical, and policy work. For the sake of offering solid and grounded scientific findings, qualitative economics enlightens new routes of economic research by (1) allowing for a richer understanding of economic reality, (2) providing deeper accounts of economic agents, and (3) leading to more complete economic theories, models, and experiments.

Acknowledging the violation of 'many of the implicit rules of economic research', the author apologises for the uneasiness that many quantitative economists might have felt by reading this thesis; quoting American economist Truman Bewley, arguably the pioneer of the use of qualitative research methods in economics, the author also believes 'that it is possible to learn the answers to the questions posed only by violating these rules' (Bewley, 1995, p. 250). Since most people come into economics with the noble goal of wanting to 'change the world' through a significant scientific contribution, the author's willingness is that, as suggested by Deirdre McCloskey, this research work will eventually, rather sooner than later, 'break through the phony rhetoric of modern economics and bring economics, that glorious conversation since Adam Smith, back into the conversation of humankind' (McCloskey, 1982/1998, p. 192).

By informing economists of the added value of qualitative inquiry for the analysis of economic phenomena, the understanding of economic questions, the assessment of economic issues, as well as the formulation of economic policies, this thesis founds the applied field of 'qualitative economics'. In tandem with standard quantitative economic studies and methods, it shall offer qualitative insights via collection and analysis of qualitative data on economic matters. This will enrich both micro- and macro-economic theory, and provide novel findings on economic policy besides the ones presented

here. Overcoming cultural, institutional, and epistemological barriers is essential to reach this scope and allow for the beginning of *qualitative economics*. The author hopes that this doctoral dissertation will not only foster future work in this area but also help economists capture its original contribution, urgent need, and game-changing role.

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