Towards a Self-Conscious Polyphonic Economics: A Heideggerian Perspective on Economic Thinking

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Wo aber Gefahr ist, wächst das Rettende auch

(But where danger is, grows the saving power also)

- Friedrich Hölderlin

Table of Contents

Introduction

In 2015, the Paris Agreement was signed during the Conference of the Parties, a binding treaty on reducing carbon dioxide emissions by 196 parties.[1] The laws in the treaty are carefully calculated to prevent the global rise of temperature beyond two degrees Celsius. Furthermore, countries and companies are trading in carbon certificates to distribute as efficiently as possible the rights to pollute just as much as these laws permit. In 2021 the "Global carbon markets value surged to a record $851 billion".[2] Martin Heidegger would see the Paris Agreement and emission trading as perfect examples of the danger of modern technology. Humanity created the climate crisis by seeing nature as a supply chain that may be explored and exploited at will. The ironic part is that we are so stuck in this ordering and calculating way of thinking and seeing the world that we cannot think in other ways. Therefore, humanity is trying to solve the climate problem through the same way of calculating thinking.

Last year I finished my economics and business economics bachelor's degree. Mathematics and data analysis are the most important skills students learn during the programme. With those skills, we learn how to optimize situations in macro and microeconomics. The degree was very useful and helped me become an analytical student. However, during my studies, I kept wondering about two things. First, I wondered why the focus was so strongly on the mathematical part that it almost reduced economics to an exact science. Second, I kept wondering why some fundamental assumptions, such as rationality and autonomy, were not thoroughly questioned. I noticed these struggles because economics was very different at my high school. My old high-school economics teacher also taught philosophy and was very knowledgeable about Marxism. To him, economics was more about storytelling, interpreting, discussing the societal impact and being critical next to the mathematical part.

Hence, I applied for a double bachelor's degree in philosophy to look for what I missed in economics. During my philosophy studies, I read the text *The Question Concerning Technology* by Martin Heidegger. This text was honestly confronting and made me feel guilty. It made me feel guilty because the explanation of how modern technology limits us in

[1] "Paris Agreement," conclusion date: December 12, 2015, United Nations Treaty Series Online, registration no. I-54113, https://treaties.un.org/pages/AdvanceSearch.aspx?tab=UNTS&clang=_en.
[2] Nina Chestney, "Global carbon markets value surged to record $851 bln last year-Refinitiv," *Reuters,* January 31, 2022, https://www.reuters.com/business/energy/global-carbon-markets-value-surged-record-851-bln-last-year-refinitiv-2022-01-31/.

only thinking in an ordering, challenging and exploiting way is closely connected to how I was taught to think like an economist. When I read Heidegger, it feels like I am told that I am the core of the problem, and I can also confirm that I see many things indeed as a calculating being. It is, for me, the first time that I strongly feel a personal truth in a philosophical text. However, it also makes me feel proud. It does because I realized that there are many more ways of thinking. I can already confirm that there is so much more to everything than the calculating-animal when looking from multiple perspectives. Therefore, I feel proud since philosophy taught me to step out of only calculating-thinking and hence I may not fall prey to the real danger of technology.

This inquiry focuses on the problem of how economic thinking can go from the reduction that it is almost an exact science based on a utility-maximizing rational being that explains problems from a mathematical approach to a discipline which is aware that it is a human-centred science that can also approach problems from a more hermeneutic and philosophical attitude. I believe that a perspective focused on the danger of modern technology from the text *The Question Concerning Technology* on this problem can be very relevant and valuable for this transition. Therefore, I will explore how Martin Heidegger's perspective can critically evaluate economic thinking as well as how Heidegger's insights can help economics avoid the danger of modern technology. Furthermore, to do this, first, we have to pose the question of what economic thinking actually is. In addition, *The Question Concerning Technology* should be analysed on the relevant insights for economic thinking.

This research is relevant as it could help economists understand the limits of economic thinking. Economists should become aware that it is just one way of thinking and seeing the world. Furthermore, it is scientifically relevant as not much research has been published on the connection between Heidegger and economics. Hence, this inquiry may be a significant addition to the existing literature.

The thesis is structured as follows. First, in Chapter One, a short overview of the history of economic thought is described to derive at the concept of mainstream economic thinking. Furthermore, chapter one dives into the heart of individual economic thinking and describes current criticisms. Second, in Chapter Two, Heidegger is introduced, and *The Question Concerning Technology* is briefly explained. Then, the critical insights that are relevant to economics are discussed. These insights are focused on the danger of technology. Finally, Chapter Three will discuss how economics can face the danger of modern technology and how economic thinking can potentially move towards a more philosophical and pluriform attitude.

Ch.1 Economic thinking

History

The history of Economic Thought is very complex, with many different schools of thought and unsolved problems. However, the origin of the term 'economics' is well known. Economics stems from the Greek word *oikonomia*.[3] This word is made up of two other Greek words, *oikos*, which is commonly translated to "household'' and *nemein*, which is often translated to "management and dispensation".[4] Hence, the word *oikonomia* is usually translated to "household management".[5] In original Greek literature it referred not to a household as a family, but an estate which produced a lot of resources themselves. According to Leshem, the term has "little to no relevance to contemporary economics''.[6] A significant difference is that the Greek *oikonomia* was of prescriptive nature and tied to ethical presuppositions. In contrast, contemporary economics tries to be descriptive and value-free. Furthermore, the Greeks reasoned out a concept that nature was abundant and, if done right, there would be time to dedicate oneself to politics and mainly philosophy. On the contrary, contemporary economics describes human choices from a belief in scarcity.

The first economic thoughts date back to pre-Christian cultures. For example, the ancient Greek, Chinese, Indian, and Mesopotamian cultures already had economic ideas and texts. However, economics as a field of research originated in the 18th century. In the 18th century, philosophers wrote on political economy. This transformed into economics. Today, Adam Smith's book on political economy, *The Wealth of Nations*, published in 1776, is regarded as the start of this change. Smith formalized existing economic ideas from Hume, Mandeville, Turgot and Quesnay into a coherent theory. Smith sketched the economy as a moving sphere of goods and services with land, labour and capital as the three production factors. Furthermore, there were three corresponding return factors: rent, wages, and profit.[7]

Before Smith, in the 17th-century, Mercantilism and Physiocracy were two important economic theories. The mercantilists argued that international trade should be limited as a country should export as much as possible but import as little as possible to become wealthy. The physiocrats argued that the government should not regulate markets and that wealth was

[3] Dotan Leshem, "Retrospectives: What Did the Ancient Greeks Mean by *Oikonomia*?," in The *Journal of Economic Perspectives*, 30, no.1 (2016): 225.
[4] Ibid.
[5] Ibid.
[6] Ibid, 226.
[7] Andrew S Skinner, "Adam Smith (1723-1790): Theories of Political Economy," in *A Companion to the History Of Economic Thought*, ed. Warren J Samuels, (Malden, Blackwell Publishing Ltd, 2003) 104.

derived from agriculture.[8] Smith argued against Mercantilism and said that if countries were acting self-interested in a free market, the outcome of international trade would be beneficial to both parties. Limiting imports by acting directly in the public interest was detrimental to the public interest. In this argument, Smith's famous *Invisible hand* is mentioned, which is often interpreted as individual self-interested behaviour that leads to the best outcome for society through supply and demand. However, this is highly debated in philosophy of economics as Smith only uses the term once in an argument about international trade.[9] Smith was in favour of the physiocratic idea that the government should not regulate free markets. Moreover, Smith supported international trade and the division of capital (Specialization). Based on Adam Smith, but with significant additions of many other economists such as David Ricardo and John Stuart Mill, classical economics was formed.

Mainstream economics

In this inquiry, mainstream economics is central. "Mainstream economics is that which is taught in the most prestigious universities and colleges, gets published in the most prestigious journals, receives funds from the most important research foundations, and wins the most prestigious awards".[10] Classical economics as mainstream economics evolved in the 19th and 20th century into neoclassical economics when mathematical demand and supply models became dominant. After the 1930's neoclassical economics could not explain the crisis of the '30s, while Keynesian macroeconomics could. Neoclassical microeconomics formed a synthesis with Keynesian macroeconomics. However, during the '70s, stagflation could not be explained. Fischer and Taylor solved this problem, and a new neoclassical synthesis was formed.[11] This is currently the basis of mainstream economics.

The division between microeconomics and macroeconomics is standard in economics. Microeconomics studies the behaviour of economic agents and firms in individual markets. In contrast, macroeconomics studies the functioning of the economy as a whole. Micro- and macroeconomic models are tested, estimated, and forecasted in econometrics by mathematical and statistical data analysis. In order to narrow the scope of this thesis, it will be focused on

[8] Philippe Steiner, "Physiocracy and French Pre-Classical Political Economy," in *A Companion to the History Of Economic Thought*, ed. Warren J Samuels, (Malden, Blackwell Publishing Ltd, 2003) 64.
[9] Patricia H Werhane, "The Role of Self-Interest in Adam Smith's Wealth of Nations," in *The Journal of Philosophy*, 86, no.11 (1989): 676.
[10] David Dequech, "Neoclassical, mainstream, orthodox, and heterodox economics," in *Journal of Post Keynesian Economics*, 30, no. 2 (2007): 281.
[11] Kevin D Hoover, "A History of Postwar Monetary Economics and Macroeconomics," in *A Companion to the History Of Economic Thought*, ed. Warren J Samuels, (Malden, Blackwell Publishing Ltd, 2003) 424.

microeconomics. Furthermore, microeconomics fits the scope of the thesis better because economic thinking from an individual perspective is key in this thesis. Moreover, Heidegger's phenomenology is always in-the-world and from a first-person experience. This suits the microeconomic perspective better than looking at the economy as a whole.

The fundament of microeconomics is *Supply and Demand Analysis*.[12] In a market, the price of a product moves until it reaches an equilibrium where the amount of demanded products is equal to the amount of supplied products. This equilibrium differs across markets because different markets have different characteristics. The demand side of the market represents consumers, and the supply side represents the producers. This results in a consumer theory and producer theory. Consumers maximize utility, and producers maximize profit.[13] Considering the limited scope of this inquiry, the focus will be on consumer theory.

Consumer theory is at the heart of the assumptions about individual economic and calculating thinking. Consumer theory is built around a rational economic agent that maximizes utility. The concept of utility stems from the moral philosophy of utilitarianism. Jeremy Bentham and John Stuart Mill (who also wrote on political economy) were the most influential utilitarian philosophers. Utility was defined as pleasure or happiness. According to the moral theory, decisions are morally justified if the outcome of the action brings more pleasure than pain.[14] In other words, when total utility increases.

Utility in economics was closely related to the original definition of utility for a long time. However, with the marginal revolution and economics becoming more of an exact science, the definition of utility in economics changed. In contemporary economics, utility represents preferences.[15] With preferences as utility, economists can rank the preferences of individuals in models; for example, Martin prefers bananas over pineapples. Therefore, Martin's utility is higher when he receives a banana than when he receives a pineapple. In addition, every individual has a finite budget, the budget constraint. This is usually the amount of money an individual can spend. Consumer theory, therefore, argues that the individual agent maximizes his utility within the boundaries of his budget constraint.[16] In

[12] Robert Frank and Edward Cartwright, *Microeconomics and Behaviour*, 2nd ed. (London: McGraw-Hill Education, 2016) 2.
[13] Roger E Backhouse, "The Stabilization of Price Theory," in *A Companion to the History Of Economic Thought*, ed. Warren J Samuels, (Malden: Blackwell Publishing Ltd, 2003) 321.
[14] Julia Driver, "The History of Utilitarianism,'' *The Stanford Encyclopedia of Philosophy* (September 2014), https://plato.stanford.edu/entries/utilitarianism-history/
[15] Daniel Hausman, "Philosophy of Economics,'' *The Stanford Encyclopedia of Philosophy* (September 2014), https://plato.stanford.edu/entries/economics/
[16] Backhouse, "The Stabilization of Price Theory," 310.

other words, a person buys what he values the most with the money he has. The core of individual economic thinking is a utility-maximizing subject under scarcity.

For this basis of economic models to have explanatory and predictive power, the preferences of the individuals need to be stable. Hence, two crucial axioms need to be satisfied. First, the completeness axiom, which states that whenever an individual has a choice between different products or sets of products, the individual will always prefer one good to the other or is indifferent between the two.[17] For example, Martin prefers bananas to pineapples, pineapples to bananas, or is indifferent between bananas and pineapples. This axiom implies that an individual has complete knowledge of all their preferences. Furthermore, according to this axiom, it is not possible to not have a preference. Note, this is different from being indifferent as not having a preference is, for example, literally not having one or not wanting to choose. Second, the transitivity axiom. The transitivity axiom states that preferences should be consistent.[18] If Martin prefers bananas to pineapples and pineapples to mangos, then Martin should prefer bananas to mangos. This axiom, therefore, needs that human decision making is always consistent. A third axiom is needed when consumer theory is expanded to explain situations in which the decision involves risk, the Continuity axiom.[19] Suppose Martin prefers bananas to pineapples and pineapples to mangos. In that case, the preferences can be replicated by a lottery in which Martin is indifferent to a probability between 0 and 1 of getting a banana or mango, or to receiving the pineapple. When the risk is not known, it is called uncertainty. Consumer theory with uncertainty needs even more axioms to produce consistent results.

An ordinal utility function can be deduced when an individual satisfies these axioms. This function represents an individual's preferences on a ranking without addressing specific utility values to the products, as these are difficult to measure. When there is uncertainty, this function is called the expected utility function. When the utility function and the budget constraint are known, economic models can optimize them to represent the utility-maximizing individuals. This is done by using mathematical methods such as the Lagrange multiplier to find the optimum allocation.[20] Mathematical optimization is fundamental for many different economic models and theories.

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[17] David Autor, "Axioms of Consumer Preference and the Theory of Choice" *Microeconomic Theory and Public Policy* (lecture at MIT Department of Economics, Massachusetts, December 9, 2010): 4.
[18] Ibid.
[19] Daniel Hausman, "Philosophy of Economics,'' *The Stanford Encyclopedia of Philosophy* (September 2014), https://plato.stanford.edu/entries/economics/
[20] Charlie Gibbons, "A Utility Maximization Example," University of California, Berkeley, September 12, 2007: 2.

Economic thinking has many different uses. It is used every day in individual, business and government thinking. Microeconomic thinking helps us understand how markets work and how humans behave in market situations. Furthermore, it helps individuals and firms allocate their resources most efficiently. Every person, university, government or business has a budget constraint. Microeconomics optimization has shown how to deal with such a budget constraint. This has helped businesses and markets to grow and be more efficient.

Furthermore, microeconomics is also vital for government policies. It shows how policy changes influence the consumers and producers in markets. For example, how taxes influence firms and consumers. Moreover, competition policy is relevant nowadays since large tech companies are becoming monopolies. In addition, privatization, negative externalities (such as pollution) and regulation of markets all have microeconomic implications. Lastly, microeconomic techniques are also crucial for welfare economics. Welfare economics studies social welfare and focuses on efficiency and distribution.[21]

When taking economic thinking as mainstream economics, which also includes macroeconomics, the importance reaches even further. Think about how the European monetary union functions, the influence of central banks such as the Fed and ECB and the importance of ministries like finance or economic affairs in current politics. Take the example of the Russian invasion of Ukraine: almost everything is analysed in economic terms. Macroeconomic forecasts are performed on how much the Russian and Ukrainian economies are shrinking. Furthermore, it is crucial how the war affects the euro, the dollar and the ruble. The effects of the war on inflation are headliners across all European news platforms. In addition, economic thinking is used as a part of warfare. Western countries perform economic warfare on Russia to pressure Putin to stop the war.[22] Trade bans and other sanctions all have microeconomic and macroeconomic incentives. Moreover, the reactions by Russia to close the stock markets and force countries to pay their gas imports in rubles are also decisions economics can explain. Hence, economic thinking is very useful in understanding situations and decisions in the real world.

[21] Mark Blaug, "The Fundamental Theorems of Modern Welfare Economics, Historically Contemplated,'' in *History of Political Economy* , 39, no.2 (2007): 185.
[22] Orysia Lutsevych, "All-out economic warfare is the best way to stop Putin," *The Guardian*, March 8, 2022.

Criticism and New Developments

Many economists distinguish between positive and normative economics, where positive economics tries to be value-free and describe economic phenomena. On the contrary, normative economics discusses the distribution of wealth and poses questions on equality and fairness of economic situations. This distinction is made to argue that positive economics can be closer to natural sciences by describing facts. However, this is heavily debated in the philosophy of economics as the principles of the models used in positive economics stem from a normative theory that assumes a rational economic being. Daniel Hausman argues that it is "difficult to hold a maximizing view of individual rationality, while at the same time insisting that social policy should resist maximizing growth, wealth, or welfare in the name of freedom, rights, or equality".[23] Furthermore, research has also shown that "There is evidence that studying theories that depict individuals as self-interested leads people to regard self-interested behavior more favorably and to become more self-interested (Marwell and Ames 1981, Frank *et al*. 1993).''[24]

There has been lots of critique on the rationality assumption and its axioms of the subject in economics. These critiques include theoretical critiques and empirical critiques. A theoretical critique from Herbert Simon is that humans do not have complete rationality but rather "bounded rationality''. Humans try to achieve "satisficing" outcomes and often stop when things are "good-enough".[25] Duncan Foley makes another theoretical critique. He argues that in mainstream economics, there is "not so much a question of adherence to any particular conception of rationality, but of taking rationality of individual behavior as the unquestioned starting point of economic analysis".[26] Foley states that "The burden of rational-actor theory is the assertion that 'naturally' constituted individuals facing existential conflicts over scarce resources would rationally impose on themselves the institutional structures of modern capitalist society, or something approximating them. But this way of looking at matters systematically neglects the ways in which modern capitalist society and its social relations in fact constitute the 'rational', calculating individual".[27] Mainstream economics does not question rationality but takes it as a starting point. Moreover, the standard neo-

[23] Daniel Hausman, "Philosophy of Economics," in *Philosophies of the Sciences: A Guide*, ed. Fritz Allhoff, (West Sussex: Blackwell Publishing Ltd, 2010) 327.
[24] Ibid.
[25] Gregory Wheeler, "Bounded Rationality,'' *The Stanford Encyclopedia of Philosophy* (November 2018), https://plato.stanford.edu/entries/bounded-rationality/
[26] Duncan K Foley, "Rationality and Ideology in Economics," *World Political Economy* (lecture at Graduate Faculty New School University, New York, March 19, 2003) 1.
[27] Foley, "Rationality and Ideology in Economics," 9.

classical interpretation pretends that the rational individual is natural, while according to Foley, the capitalistic society creates the rational individual.

Empirical critiques are coming from, for example, game theorists. Empirical research shows that when there is no perfect competition in the market, the choices of the individuals violate the rational axioms.[28] Therefore, in imperfect markets, game theory studies the strategic interactions between the agents to explain their behaviour. Kahneman and Tversky, both psychologists, showed that the expected utility model violates its axioms when choices involving risks have to be made.[29] They showed that individuals have a steeper utility function for losses than gains, which means that people care more about losing 20 euros than gaining 20 euros under uncertain outcomes. This contradicts the rationality that gains and losses should weigh equally in a decision.

Even though neoclassical microeconomics is still the basis of individual mainstream economic thinking, mainstream economic thinking has changed over time. Keynesian macroeconomic assumptions are already very different from neoclassical macroeconomics.[30] This change already happened in the 1950s. Today there are many different views within the broadest sense of economic thinking and mainstream economics. Research is often performed in areas where past economic theories could not explain certain phenomena. Because of this, new, better explanatory findings are often added to mainstream economics and hence, behavioural economics, welfare economics and game theory are generally accepted. In addition, there are also schools outside mainstream economics that are popular and have different views. "*Austrian economists* accept orthodox views of choices and constraints, but they emphasize uncertainty and question whether one should regard outcomes as equilibria, and they are skeptical about the value of mathematical modelling".[31] Moreover, there are also schools of feminist thought, evolutionary economics and many more. It shows that economics is not a static discipline. Mainstream economics can change.

[28] Donn Ross, "Game Theory,'' *The Stanford Encyclopedia of Philosophy* (March 2019), https://plato.stanford.edu/entries/game-theory/
[29] Daniel Kahneman and Amos Tversky, "Prospect Theory: An Analysis of Decision under Risk," in *Econometrica,* 47, no. 2 (1979): 263.
[30] David Colander, "The Death of Neoclassical Economics," in *Journal of the History of Economic Thought,* 22, no.2 (2000): 133.
[31] Daniel Hausman, "Philosophy of Economics," in *Philosophies of the Sciences: A Guide*, ed. Fritz Allhoff, (West Sussex: Blackwell Publishing Ltd, 2010) 326.

Ch.2 Heidegger's Question Concerning Technology

To be able to interpret economic thinking from Heidegger's perspective in *The Question Concerning Technology*, first, Heidegger himself has to be introduced. Martin Heidegger was born in Messkirch, Germany, in 1889.[32] After his childhood, Heidegger started studying theology. However, in 1911, after two years of studying theology, he switched to philosophy. In 1915, Heidegger started teaching at Freiburg University. Studying Aristotle became important for Heidegger as Aristotle's thought on the modes of being in the *Categories* and *Metaphysics* inspired Heidegger to question what being is. This became a central topic in Heidegger's philosophy. Studying philosophers such as Kant, Kierkegaard and Nietzsche influenced Heidegger's thinking.[33] More importantly, Dilthey and Husserl were of major influence on Heidegger's philosophical work. From Dilthey, Heidegger understood the importance of a hermeneutical approach to history. Heidegger argued that "gaining access to history rests upon understanding what it means to ***be*** historical" was the crucial first step to hermeneutics.[34] In 1919, Heidegger received the role of assistant to Husserl at Freiburg University. Husserl introduced Heidegger to phenomenology.

Heidegger's philosophy can also be characterized as phenomenology. However, Heidegger developed his own, different view on phenomenology. Heidegger's magnum opus, published in 1927, is called *Being and Time* (*Sein und Zeit*). Heidegger explores the question of what being really is and does this by researching the "transcendental conditions" of being through the everydayness of human experience.[35] Heidegger critiques that philosophy has always focused on *beings* and not on *being* itself. *A being* refers to an entity, and *being* refers to existing, enduring and happening. Moreover, Heidegger shows that being cannot be seen apart from time, and hence the temporality of being is very important and shows that being always relies on its time and the context. Heidegger introduces his famous concept of *Dasein*, which can be understood as the particular mode of being that applies to how human beings relate to the world (not primarily as a biological subject) and also considers that this mode of being is dependent on its current time and context.[36] Heidegger explains all these concepts uniquely as he introduces new terms and uses many hyphenations to stress that what he means

[32] Michael Wheeler, "Martin Heidegger,'' *The Stanford Encyclopedia of Philosophy* (October 2011), https://plato.stanford.edu/entries/heidegger/
[33] Ibid.
[34] Robert C. Scharff, "Heidegger's "Appropriation" of Dilthey before Being and Time," in Journal of the History of Philosophy 35, no.1 (January 1997): 105.
[35] Wheeler, "Martin Heidegger".
[36] Ibid.

by certain words is different from the general conception of these words. This makes it challenging to translate Heidegger to English and write about Heidegger in English, as the usage of the German language is very specific to Heidegger.

Furthermore, as a phenomenologist, Heidegger takes a perspective on the world as being-in-the-world. Humans do not primarily have a third person or meta-view of the world; no, humans are mainly in the first-person view of the world. In that world, things are revealed to us. Things appear to us and go from concealed to unconcealed. Heidegger shows that what is revealed and how it is revealed is contingent. For example, how people define or see Rotterdam. Economic policymakers see Rotterdam as the largest harbour in Europe. This is correct because the definition holds, but it does not do justice to the fullness of the concept Rotterdam. For someone else, Rotterdam can be the city where they were born and raised and views the city as their home. In addition, Rotterdam can be seen through students, people in different neighbourhoods, low-income and high-income habitants, project developers, police officers, tourists and many more. Phenomenology tries to do justice to the fullness of these different contingent perspectives by going to the things themselves, to what is being revealed to these perspectives.

The *Question Concerning Technology*, published in 1953, is part of Heidegger's later work. This differs a lot from his earlier work. He never finished *Being and Time*, of which the first part published in 1927, after which he moved away from exploring the transcendental conditions of being through *Dasein* as the everydayness human experience. However, in his later work, being still takes a central role in his work. His later work consists of many lectures, books, and short papers. Furthermore, poetry takes on a more important role in his later work, while Heidegger focuses on four topics specifically: "Being as appropriation, technology, safeguarding and the gods".[37]

The Question Concerning Technology

Before discussing the relevant notions of Heidegger's thought in *The Question Concerning Technology* for economic thinking, the fundamental concepts of the text need to be explained. In the text, Heidegger questions technology. To be able to do this, a free relationship to technology should be established.[38] According to Heidegger, this can only be the case "if it

[37] Ibid.
[38] Martin Heidegger, *The Question Concerning Technology*, trans. William Lovitt (New York: Harper & Row publishers, 1977), 3.

opens our human existence to the essence of technology".[39] And if we find the essence, technology can be understood within its own limits. The essence of something is not only what it really is, but also how it endures and how it comes to be.

Heidegger starts his journey to find the essence of technology. A crucial notion is that the essence of technology is not something technological.[40] Hence, by looking for the technological, it cannot be found. Technology is not something neutral. It hides its essence. The common way of finding an essence is to ask what it is. When doing this for technology, we find that technology is a means to an end, and secondly, technology is a human activity.[41] These definitions are both correct. They are the instrumental and anthropological definitions of technology. However, the correct does not uncover the truth. The correct is always about something particular. When that uncovering happens, it is called truth. The method Heidegger uses is seeking the true by de-structuring the correct.

Next, Heidegger questions instrumentality and finds that man misinterprets the essence of instrumentality as causality.[42] Heidegger states that revealing is actually the essence of instrumentality. The Greek word for revealing is *Aletheia*, which also means truth.[43] The Romans translated this to veritas, which became the definition for man when something is correct. Hence, people started interpreting truth as correct and causality. However, the correct is different from truth. Think of the previous Rotterdam example. Where the particular experience of Rotterdam can be correct; however, that is not true as it does not do justice to the different perspectives in which Rotterdam can reveal itself. In the realm of revealing, we find a mode of revealing called *Poiesis*, bringing-forth. This bringing-forth is when something goes from concealed to unconcealed. This bringing-forth is very broad and can be seen as *physis* in nature where a seed transforms itself into a tree, and hence the tree comes into unconcealment.

This revealing is crucial for technology as "The fundamental characteristic of technology as a means is instrumentality'' and the essence of instrumentality is revealing, "Technology is therefore no mere means, Technology is a way of revealing".[44] Bringing-forth is the mode of revealing that old technology, *Techne* resembles. A golden necklace is brought-forth together by a goldsmith who gathers together the gold *(the causa materialis)*,

[39] Ibid, 4.
[40] Ibid.
[41] Ibid.
[42] Ibid, 9.
[43] Ibid, 10.
[44] Ibid, 12.

the chain (*the causa formalis),* the golden necklace as a piece of jewellery (*the causa finalis),* and hence comes into unconcealment.[45]

Modern technology is very different from this mode of revealing. Based on Newtonian physics, modern technology relies on physics as an exact science in which nature can be understood to serve humanity. Furthermore, physics relied again on technology because of the technological innovation of apparatuses.[46] Modern technology does not reveal as *Poiesis*. No, it challenges-forth. It is a demanding claim that calls forth action. Modern technology demands a supply of energy from nature that needs to be stored. Modern technology "sets upon nature" as it unlocks energy and exposes it. It challenges forth as it drives "toward driving on to the maximum yield at the minimum expense."[47] Moreover, the energy is not only stored, no, "The concealed energy in nature is unlocked, then transformed, stored, distributed, switched about".[48] These are all ways of challenging revealing and this revealing does not stop. This mode of revealing reveals to itself (determines) what is being revealed and hence regulates and secures itself. Heidegger calls the unconcealment, the way in which we reveal the world, that sets upon nature and orders everything to be ready at hand to be ordered further, the standing-reserve (*Bestand*).[49] It is man who "carries out this challenging setting upon'' through which we view the world as standing-reserve.[50] Therefore, man cannot be just part of the standing-reserve. Moreover, man does not rule unconcealment. That is impossible. Hence, man is already challenged to challenge the world in this ordering way. Heidegger calls this "challenging claim," which gathers man "to order the self-revealing as standing-reserve", Enframing (*Gestell*).[51] Enframing is the essence of modern technology. To Heidegger, "Enframing means the gathering together of that setting-upon which sets upon man, challenges him forth, to reveal the real, in the mode of ordering, as a standing-reserve".[52]

Here the danger of modern technology becomes evident. Heidegger asks what this enframing really is. Enframing is a destining of revealing. Every mode of revealing is a destining of revealing. However, this challenging and ordering way of revealing is a destining that drives out other ways of revealing. Hence, it conceals itself in revealing, and man forgets that there are also other ways of revealing, such as bringing-forth. The destining causes man to not be able to see anything as itself anymore but just as part of the standing-reserve.

[45] Ibid, 8.
[46] Ibid, 14.
[47] Ibid, 16.
[48] Ibid.
[49] Ibid, 17.
[50] Ibid, 18.
[51] Ibid, 19.
[52] Ibid, 20.

Furthermore, in this way, man is only the "orderer of the standing-reserve", and hence this will lead to man becoming part of the standing-reserve.[53] The worst is that the destining conceals revealing itself.

For Heidegger, therefore, the real danger is not technology. The real danger is not that we create nuclear weapons or pollute and destroy nature. For Heidegger, the real danger is that enframing covers itself, and this causes man to be stuck within this challenging ordering way of revealing. In this way of revealing, man thinks that he is the ruler of nature and everything is the way it is because we want it so. Instead, man is so lost and stuck that he cannot even encounter his own essence anymore and experience different ways of revealing.

In Relation to Economics

Heidegger's The *Question Concerning Technology* is relevant to economics because modern technology comes very close to seeing the world through the neoclassical rationality assumption with its axioms. Viewing humans as rational utility-maximizing subjects that always have consistent preferences is not neutral. It implies that we experience the world and the people around us as resources that can yield utility. Furthermore, it implies that more is better in order to gain as much utility as possible, which also pushes towards endless growth. Mainstream economic thinking is like modern technology in the sense that it hides its essence. As Foley already stated, in modern economic analysis, rationality is taken as "the unquestioned starting point".[54] Positive Economics tries to be a descriptive science but lets us forget that its microeconomic principles are based on an ontological description that humans are rational utility-maximizing subjects. Furthermore, the whole concept of utility stems from a pure normative theory. The essence of technology is not something technological, just as the essence of economics is not something economical. The essence of economics has to do with transcendental conditions of what *a being* and *being* is. Economic thinking is not just a way of thinking. It is a way of experiencing the world, a way of being-in-the-world. It, too, is a way of revealing.

Heidegger explained that modern technology relied on modern mathematical physics. However, modern technology itself has developed a lot since Heidegger's *The Question concerning technology*. In the 21st century, technology relies more on economics. First, technology, with the reliance on physics, started to reveal nature as a standing-reserve. However, now that it is reliant on economics, which has also become very mathematical, it

[53] Ibid, 27.
[54] Foley, "Rationality and Ideology in Economics," 1.

shifted towards revealing man and nature as part of the standing-reserve (*Bestand*). For example, take social media. A digital space where things are coming from concealment to unconcealment. However, the goal of these social platforms, such as Facebook, Instagram and TikTok, is to colonize human attention. The platforms are free to use, and hence it seems like they are there for the people to treat us as themselves. Nevertheless, this is not the case in this (post) modern technology in the form of social media. These platforms are based on comprehensive algorithms built by the best mathematicians and psychologists to colonize our attention. Human attention is so valuable because it determines the amount of time spent on the platform, which yields an incredible amount of information that can be sold or used for hidden and direct advertisements. The companies behind these platforms, billion and trillion-dollar companies, do this from a purely economic incentive, namely, to maximize utility, in this case, profits and market power. In this way, in digital technology, a market of human attention is created, which is a perfect example of humans belonging to the standing-reserve. It is a clear step further than the Dam in the Rhine, which is an example from Heidegger of how modern technology sets-upon nature and challenges forth. Since the Rhine is not a river anymore, but a resource to generate power, which is stored and challenged further. Now by colonizing our attention, humans are clearly setting upon and challenging-forth themselves as our attention has become a resource that can be extracted, stored in databases and exploited for economic purposes.

Enframing and Danger

Following up on the point of creating new markets, it can be explained that economic thinking has a very destining character of enframing. Man is carrying out economic thinking. Moreover, Enframing (*Gestell*) is the challenging claim that orders us to reveal the self-revealing as standing-reserve (*Bestand*). So in the economic way of revealing, it is the claim that gathers man together and challenges us to reveal the whole world, including people, as a supply chain from which recourses need to be extracted, ordered, and distributed efficiently to maximize utility. This challenging claim happens in an imperializing way. The economic mode of revealing dominates and drives out other modes of revealing.

Another great example of including people as part of the standing-reserve is the term *Human Resource Management (HRM)*. In the term itself, it is evident that people are not viewed as persons themselves. Humans are revealed in a challenging way that reduces them to resources judged on their efficiency and usefulness. This challenging way of revealing does

not only happen in a corporate sphere; it has spread to many parts of our social lives. Furthermore, this challenging claim drives out other ways of looking at people and causes man to be stuck in experiencing fellow students, friends and relatives based on their usefulness.

Michael J Sandel, a political philosopher at Harvard, writes about the moral limits of markets "Almost without realizing it, we have drifted from having market economies to becoming market societies. The difference is this: A market economy is a tool – a valuable and effective tool – for organizing productive activity. A market society, by contrast, is a place where almost everything is up for sale. It is a way of life in which market values seep into social relations and govern every domain".[55] For example, in "procreation and childrearing, health and education, sports and recreation, criminal justice, environmental protection, military service, political campaigns, public spaces, and civic life".[56] This is a great example of a practical interpretation of what Heidegger means. Sandel writes about "almost without realizing it" and this exactly what this destining way of enframing is. It pushes out other ways of revealing while itself hides its own way of revealing and revealing as such, and hence, man has the illusion that man is in control and this is what he wanted. That is why man in the 21st century capitalistic society does not even notice that we are only revealing the world in a mode of economic thinking. To stress this more, two specific examples by Sandel illustrate the irony in being so stuck in this way of thinking and experiencing the world. In California, an inmate can buy an upgrade of ninety dollars per night for a more luxurious prison cell in some prisons if they are not satisfied with the standard. In addition, in the United States, there is a charity that pays three hundred dollars to every drug-addicted woman in return for being sterilized.[57]

Sandel argues that markets corrupt morals in certain cases and that economics is a "poor guide" for judging where we should want market thinking. Sandel makes a great point. However, this thesis and *The Question Concerning Technology* are not about ethics. It is about *being* and unconcealment. Therefore, Sandel misses an important point. The ethical implications are not the only danger, especially not the real danger. If we allow economic thinking in every aspect of life, we will not be able to think otherwise. It does not only corrupt morals. It also corrupts revealing. It determines how things are revealed and what is revealed. The real danger is that when the economic way of revealing has driven out other modes of

[55] Michael J Sandel, "The moral limits of markets," *Project Syndicate* (2012): 1.
[56] Michael J Sandel, "Market reasoning as moral reasoning: why economists should re-engage with political philosophy," *Journal of economic Perspectives* 27, no. 4 (2013): 121.
[57] Michael J Sandel, "The moral limits of markets," 1.

revealing in every aspect of life, we are so stuck that we cannot experience any other ways of revealing any more.

One example of this is how we deal with negative externalities. As seen by economists, negative externalities are costs for a third party that are not responsible for those costs. For example, think of the climate change problem from the introduction or problems such as waste and traffic congestion. These problems are often caused by an economic way of thinking and acting on utility maximization. However, when trying to solve these problems, we impose taxes or subsidies to make them more expensive or cheaper. We are no longer able to approach these problems from a different way of thinking, such as respecting the singularity of objects and viewing nature, not as a resource to exploit but as our world in which we live. Instead, society is so stuck in keeping viewing such problems as part of the standing-reserve that we try to solve them by making the relevant objects and decisions less favourable to order and exploit within the standing-reserve.

Ch.3 Facing the danger of economic thinking

Heidegger's Saving Power

"But where danger is, grows the saving power also".[58] Heidegger uses Hölderlin's quote to explain where a possible saving power of the danger might be. This lies in questioning the essence of modern technology more thoroughly. As explained previously, the essence of something is not only what it is, but also how it comes to be and how it endures.[59] The enduring needs to be questioned instead of the what is. This enduring is critical to the saving power. When enduring is deconstructed, Heidegger finds that something must be granted to be able to endure. Modern technology and economic thinking have enframing as their essence. Enframing has a very different nature than granting. It endures with a destining character that challenges-forth and drives out other ways of revealing. However, according to Heidegger, this destining must be somehow granted. Otherwise, it cannot endure.[60]

The crucial insight is that man plays a role within the granting. According to Heidegger, the "innermost indestructible belongingness of man within granting may come to light". Man is "used and needed" for the granting.[61] This is the saving power. Because using and needing man for the granting to endure means that man can potentially be needed to watch over and keep safe a different mode of revealing that has not a destining character that challenges-forth. It can be in a mode of revealing that brings-forth and hence man is needed and used for, in watching over and keeping safe "the coming to presence of truth".[62] However, for this to happen, we need to be able to enter into a different more 'primal' mode of revealing that brings-forth instead of challenges-forth. Furthermore, necessary conditions for even noticing this saving power are that man stops focusing on the technological, stop treating it as an instrument and starts paying attention to the "coming to presence" of technology.[63] The essence of technology needs to be thoroughly questioned and watched over. Man has to be "constantly aware of the danger".[64] Otherwise, man is blind to the essence of technology and can never see the "arising" of the possible saving power.[65]

Heidegger poses a suggestion that the realm of art may be the primal mode of

[58] Heidegger, *The Question Concerning Technology,* 28.
[59] Ibid, 29.
[60] Ibid, 31.
[61] Ibid, 33.
[62] Ibid.
[63] Ibid.
[64] Ibid.
[65] Ibid.

revealing that can save man. Art, before it became aesthetic, was part of *Techne* and therefore was a mode of revealing that brought-forth.[66] The realm of art would be suitable for "essential reflection upon technology and decisive confrontation" because it is "akin" but "fundamentally" different to the essence of technology.[67] However, Heidegger concludes that nobody can know for sure if art is indeed this realm, man does "not yet experience the coming to presence of technology" and that the only thing we know is that when we come closer to the danger, the saving power shines brighter and man becomes more questioning.[68]

Facing economics

It is beyond the scope of this inquiry to offer a Heideggerian economics. However, what is within the scope is to offer suggestions on how to possibly face the danger of economic thinking and shape mainstream economics.

As Heidegger explained, the granting is of great importance to mainstream economics and economic thinking in general. Revealing the everydayness of the world in a calculating and economic thinking way is also granted. This would be the same as the technical thinking in Heidegger. However, man does not rule revealing and cannot just escape economic thinking as the mode of revealing. Thinking in terms of problems and solutions is part of being stuck in the challenging way of revealing that economic thinking is. Therefore, offering a straightforward solution would be the same loop of technical thinking as solving the climate crisis discussed in the introduction. Therefore, it is not possible to solve and escape the danger. Although, what man can do is open our eyes and become aware of the danger. Furthermore, face the danger, try to decelerate the driving out of other ways of thinking, and open ourselves to realms where the saving power might lie.

Moreover, it is also granted what endures in mainstream economics. As previously stated, mainstream economics "is that which is taught in the most prestigious universities and colleges, gets published in the most prestigious journals, receives funds from the most important research foundations, and wins the most prestigious awards".[69] Therefore, man and especially economists at these aforementioned institutions, take an active role in determining what is granted and hence what endures in mainstream economics. If mainstream economics does not transform into self-conscious polyphonic economics, it is lost in the blindness of

[66] Ibid, 34.
[67] Ibid, 35.
[68] Ibid.
[69] Dequech, "Neoclassical, mainstream, orthodox, and heterodox economics," in *Journal of Post Keynesian Economics*, 30, no. 2 (2007): 281.

being stuck in one-dimensional economic thinking. Then it treats individual economic thinking too much as a neutral skill that man masters. It is then blind to the danger that this is not neutral at all since it challenges and orders us while it drives out other ways of thinking. In addition, everything would be seen as part of the standing-reserve. Economics would not do justice to the fullness of the contingent perspectives of the being-in-the-world of man.

First, self-consciousness is needed as the realisation that analysing a problem from an economic way of thinking is fixing upon something pertinent; it has to do with correctness and not truth. Nonetheless, the correctness of certain economic models and econometric analyses of specific human behaviour in markets is undeniable. Furthermore, the usefulness of explaining and predicting certain economic phenomena is of great importance in current societies and has already been explained before. However, economics as an academic field needs to understand it is just one perspective. Second, self-consciousness is needed to take economics as a social science seriously. After all, economics is a human-centred science that deals with social phenomena in the world. Therefore, economists need to realise that an exclusive mathematical is too reductive to describe and do justice to our being-in-the-world. Economics needs more and different approaches than solely the mathematical approach. Third, self-consciousness is needed as a constant reflection and questioning of its assumptions and the dangerous essence of economic thinking. We must be aware of, and face the danger.

A suitable realm and field of study for this is the philosophy of economics. Philosophy of economics is akin to economics while still being fundamentally different as its fundament is philosophy. The reflection and confrontation on the essence of economics with its assumptions and axioms should not only be ethically and methodologically. Those are necessary as it is, for example, urgent to question where we want markets and where we do not. However, a deeper ontological questioning of being next to the questioning of other assumptions should also become present within mainstream economics through the philosophy of economics to truly reflect on the danger of economic thinking.

Moreover, economics needs to move towards polyphonic economics, which focuses on perspectivism. Polyphonic, as in the Greek combination of *Polu* and *Phone*, which means ‘many’ and ‘voices’, correspondingly. Mainstream economics needs to evolve into many voices and not the voice of the majority. The perspectivism within mainstream economics can be improved by listening to and taking seriously other views and voices within economics. Such as Austrian, evolutionary, feminist, experimental, and ecological economics that reason from a different perspective and often use different methods. Their analysis and results are also part of the truth of economics. It will do more justice to the whole story of different

interpretations and perspectives if they are included and taken seriously.

Furthermore, not only within economics, it would be crucial to open up to different perspectives. In other topics where economic thinking dominates, it would be vital to listen to other voices. For example, if we take the familiar example of Rotterdam. In the city's development, try to go beyond only economic thinking. Choose not per se for the most utility maximising options. Does Rotterdam need another twenty hotels in large skyscrapers even though it yields the most calculable utility? Do not forget that we live in that world. Listen to social geographers who understand the relationship between social groups and space, listen to architects who can understand the feeling of space and what kind of buildings would suit that space, and listen to historians who can understand the importance of a place's heritage and culture. The same holds for other situations which are dominated by an economic analysis.

The key to change lies in questioning the definition of mainstream economics. When we question this definition, it is clear that the ability to change lies in education. The economics students become the researchers, teachers, funders and economists of tomorrow. They are the ones that play an active role in granting and shaping what endures in mainstream economics. One could argue that mainstream economics is already polyphonic and self-conscious. Economic research is already extensive, with many different views and opposing opinions. However, it still lacks the inclusion of different views and thorough philosophical questioning of the presuppositions and assumptions in economics. Furthermore, the research at the edge of economics does not translate to what students are being taught at university. Many economic bachelor studies are not purely economics. Many bachelor studies are joint studies of economics and business economics, which include many business courses like marketing, accounting, organisation and strategic management. These courses take up many credits within such an economics programme. A different approach would be to reduce the business courses within economics studies or leave them to full business and management bachelors. This will give room for new and different perspectives within economics studies.

The number of courses in philosophy of economics can be expanded. This would allow the implementation of the three forms of self-consciousness in courses as part of an economics bachelor's. The students will understand economics better as social science, grasp its limitations better, and question the assumptions and danger of economic thinking. Furthermore, the polyphonic aspect of economics could be improved with the number of unoccupied credits left. Courses on evolutionary, feminist and other voices could be implemented. This will give the students an understanding that these voices are also of great importance and will help picture them with a more truthful grasp of economics. In addition,

when these students have a self-conscious polyphonic understanding of economics, they will take this way of thinking with them in their academic and professional careers, strengthening this transition of economics further.

Tony Lawson, professor of Economics and Philosophy at the University of Cambridge, supports the view in this chapter. Lawson writes about what is wrong with modern economics. The problem of modern economics, according to Lawson, is that modern economics is irrelevant because of the domination of mathematical modelling based on unrealistic assumptions. Lawson argues that there is "no need to exclude methods of mathematical modelling from the tool box; but there are many other methods and approaches that can be fruitfully included".[70] Most economists are "unwilling to do the philosophical legwork necessary to get to the nub of the issues involved".[71] The solution for Lawson is the "inclusion and prioritisation" of philosophy in economics. Lawson argues that economics needs to include "critical, philosophically, including ontologically, informed thinking, as a systematic and sustained programme" to move forward to a "more relevant, open-minded, serious and pluralistic discipline".[72] This view corresponds to the view offered in this chapter as it confirms that the mathematical reduction of economics does not do justice to economics as a social science. Furthermore, it has a similar view on the need to improve the importance of philosophy in economics by including ontology. The philosophical legwork necessary for economics to take itself serious relates to the self-consciousness mentioned above. Furthermore, the many other methods and the pluralistic discipline confirms the need for polyphonic economics.

One may argue, that the suggestions in this chapter are still a way of technical thinking. Therefore, it does not save man from the destining character of the economic mode of revealing. However, it will help in trying to think differently, improve perspectivism and become less blind to the danger. Which makes man more questioning and might eventually lead to the saving power.

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[70] Tony Lawson, "What Is Wrong With Modern Economics, and Why Does It Stay Wrong?," in *Journal of Australian Political Economy*, no. 80 (2017): 40.

[71] Tony Lawson, *The Nature and State of Modern Economics* (New York: Routledge, 2015), 2.

[72] Tony Lawson, "What Is Wrong With Modern Economics, and Why Does It Stay Wrong?," in *Journal of Australian Political Economy*, no. 80 (2017): 39; Tony Lawson, *The Nature and State of Modern Economics* (New York: Routledge, 2015), 2.

Final Thoughts

Returning to the introduction, the two major things I was concerned with questioning economics were the reduction of economics to an exact science due to solely taking a mathematical approach and not seriously questioning its fundamental assumptions. I approached these two concerns in this inquiry by looking and thinking from the perspective of Martin Heidegger's *The Question Concerning Technology* on mainstream (mainly microeconomic) economics and individual economic thinking in general. It was not the intention of this inquiry to outthink Heidegger and come up with an escape from the danger of modern technology. Furthermore, it was not the goal to throw the current mathematical dominant economics away and write a new economic theory.

Being for Heidegger is always being-in-the-world. Moreover, how humans relate to the world depends on its time and context. Therefore, an important realization is that economics can be very different from how it is right now. Hence, I tried to find the relevant notions in Heidegger to move economics away from its one-dimensional thinking where it is blind to its essence and hence the danger of the economic mode of revealing.

The two crucial insights I have found for my two concerns are the importance of perspectivism to do justice to the fullness of the contingency of being-in-the-world and the deep ontological questioning Heidegger uses as a method. I translated these to the polyphonic and self-conscious attitudes that economics can attain. Polyphonic is to move away from one-dimensional thinking by being open to many voices and, therefore, including other fields of economic thought outside mainstream economic thinking. Furthermore, self-consciousness is primarily the thorough questioning, watching over and becoming aware of the assumptions and essence of economics. The way to reach this is to implement these attitudes in economics bachelor studies through philosophy of economics courses and courses with a different perspective on economics.

Lastly, I am glad that multiple people within economics are questioning the state of economics and looking for new perspectives, such as Tony Lawson, but also my high school teacher and many others. Because it is correct, where the danger is, grows the saving power also.

Bibliography

Autor, David. “Axioms of Consumer Preference and the Theory of Choice.” *Microeconomic Theory and Public Policy*. Lecture at MIT Department of Economics, Massachusetts, December 9, 2010: 1-15.

Backhouse, Roger E. “The Stabilization of Price Theory.” In *A Companion to the History Of Economic Thought*, edited by Warren J Samuels, 308-324. Malden: Blackwell Publishing Ltd, 2003.

Blaug, Mark. “The Fundamental Theorems of Modern Welfare Economics, Historically Contemplated.’’ In *History of Political Economy* , 39, no.2 (2007): 185-207.

Chestney, Nina. “Global carbon markets value surged to record $851 bln last year-Refinitiv.” *Reuters,* January 31, 2022. https://www.reuters.com/business/energy/global-carbon-markets-value-surged-record-851-bln-last-year-refinitiv-2022-01-31/.

Colander, David. “The Death of Neoclassical Economics.” In *Journal of the History of Economic Thought,* 22, no.2 (2000): 127-142.

Dequech, David. “Neoclassical, mainstream, orthodox, and heterodox economic.” In *Journal of Post Keynesian Economics,* 30, no. 2 (2007): 279-302.

Driver, Julia. “The History of Utilitarianism.’’ *The Stanford Encyclopedia of Philosophy* (September 2014). https://plato.stanford.edu/entries/utilitarianism-history/.

Foley, Duncan K. “Rationality and Ideology in Economics.” *World Political Economy*, lecture at Graduate Faculty New School University, New York, March 19, 2003: 1-10.

Frank, Robert and Edward Cartwright. *Microeconomics and Behaviour*. 2nd ed. London: McGraw-Hill Education, 2016.

Gibbons, Charlie. “A Utility Maximization Example.” University of California, Berkeley, September 12, 2007: 1-6.

Hausman, Daniel. “Philosophy of Economics.” In *Philosophies of the Sciences: A Guide*, edited by Fritz Allhoff, 324-346. West Sussex: Blackwell Publishing Ltd, 2010.

Hausman, Daniel. “Philosophy of Economics.’’ *The Stanford Encyclopedia of Philosophy* (September 2014). https://plato.stanford.edu/entries/economics/.

Heidegger, Martin. *The Question Concerning Technology*, translated by William Lovitt, (New York: Harper & Row publishers, 1977), 3-35.

Hoover, Kevin D. “A History of Postwar Monetary Economics and Macroeconomics.” In *A Companion to the History Of Economic Thought*, edited by Warren J Samuels, 411-427. Malden: Blackwell Publishing Ltd, 2003.

Kahneman, Daniel, and Amos Tversky. “Prospect Theory: An Analysis of Decision under Risk.” In *Econometrica*, 47, no. 2 (1979): 263-292.

Lawson, Tony. *The Nature and State of Modern Economics*. New York: Routledge, 2015.

Lawson, Tony. “What Is Wrong With Modern Economics, and Why Does It Stay Wrong?.” In *Journal of Australian Political Economy*, no. 80 (2017): 26-42.

Leshem, Dotan. "Retrospectives: What Did the Ancient Greeks Mean by *Oikonomia*?." In The *Journal of Economic Perspectives*, 30, no.1 (2016): 225-36.

Lutsevych, Orysia. “All-out economic warfare is the best way to stop Putin.” *The Guardian,* March 8, 2022.

"Paris Agreement." Conclusion date: December 12, 2015. *United Nations Treaty Series Online,* registration no. I-54113. https://treaties.un.org/pages/AdvanceSearch.aspx?tab=UNTS&clang=_en.

Ross, Donn. "Game Theory.'' *The Stanford Encyclopedia of Philosophy* (March 2019). https://plato.stanford.edu/entries/game-theory/.

Sandel, Michael J. "Market reasoning as moral reasoning: why economists should re-engage with political philosophy." In *Journal of economic Perspectives* 27, no. 4 (2013): 121-140.

Sandel, Michael J. "The moral limits of markets." *Project Syndicate* (2012): 1-2.

Scharff, Robert C. "Heidegger's "Appropriation" of Dilthey before Being and Time." In Journal of the History of Philosophy 35, no.1 (January 1997): 105-128.

Skinner, Andrew S. "Adam Smith (1723-1790): Theories of Political Economy." In *A Companion to the History Of Economic Thought,* edited by Warren J Samuels, 94-111. Malden: Blackwell Publishing Ltd, 2003.

Steiner, Philippe. "Physiocracy and French Pre-Classical Political Economy." In *A Companion to the History Of Economic Thought,* edited by Warren J Samuels, 61-77. Malden: Blackwell Publishing Ltd, 2003.

Werhane, Patricia H. "The Role of Self-Interest in Adam Smith's Wealth of Nations." In *The Journal of Philosophy,* 86, no.11 (1989): 676-680.

Wheeler, Gregory. "Bounded Rationality.'' *The Stanford Encyclopedia of Philosophy* (November 2018). https://plato.stanford.edu/entries/bounded-rationality/.

Wheeler, Michael. "Martin Heidegger.'' *The Stanford Encyclopedia of Philosophy* (October 2011). https://plato.stanford.edu/entries/heidegger/.