



The European Journal of the History of Economic Thought

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/rejh20

Universal basic income in Viennese Late Enlightenment: rediscovering Josef Popper-Lynkeus and his in-kind social program

Alexander Linsbichler & Marco P. Vianna Franco

To cite this article: Alexander Linsbichler & Marco P. Vianna Franco (10 Jan 2025): Universal basic income in Viennese Late Enlightenment: rediscovering Josef Popper-Lynkeus and his in-kind social program, The European Journal of the History of Economic Thought, DOI: [10.1080/09672567.2024.2444921](https://doi.org/10.1080/09672567.2024.2444921)

To link to this article: <https://doi.org/10.1080/09672567.2024.2444921>



© 2025 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 10 Jan 2025.



Submit your article to this journal [↗](#)




View related articles [↗](#)



View Crossmark data [↗](#)

Universal basic income in Viennese Late Enlightenment: rediscovering Josef Popper-Lynkeus and his in-kind social program

Alexander Linsbichler  and Marco P. Vianna Franco 

ABSTRACT

Austrian engineer, philosopher, and political economist Josef Popper-Lynkeus (1838–1921) was a renowned public intellectual of Viennese Late Enlightenment. In this article, we unearth and explore Popper-Lynkeus’s social program. It sought to implement social conscription to unconditionally guarantee a basic level of goods and services for every human individual. We appraise the economic and ethical justifications provided by Popper-Lynkeus for his allegedly “rational” proposals and the intended consequences for the discipline of economics. Finally, and based on our disambiguation of different notions of “unconditionality”, we clarify similarities and differences between Popper-Lynkeus’s social program and contemporary proposals for a universal basic income, characterising both as alternatives to traditional welfare states.

ARTICLE HISTORY

Received 28 November 2023
Accepted 22 November 2024

KEYWORDS

Josef Popper-Lynkeus; universal basic income; Viennese Late Enlightenment; Otto Neurath; calculation in kind; rationality; welfare state

JEL CLASSIFICATION

B19; B31; P41; P46

1. Introduction

In his book *The World as I see it*, Albert Einstein (1949, 16–17) described Austrian thinker Josef Popper-Lynkeus (1838–1921) as “one of the few outstanding personalities who embody the conscience of a generation,” referring to the latter’s view that “society is responsible for the fate of every individual” and proposal “to translate the consequent obligation of the community into fact.”¹ In the introduction of *Security for All and Free Enterprise*, a book intended to retrospectively summarise the social philosophy of Popper-Lynkeus, Einstein praised the attempt to “acquaint the English-speaking public with a noteworthy personality (...) a prophetic and saintly person,

CONTACT Alexander Linsbichler  alexander.linsbichler@jku.at  Johannes Kepler University Linz, Linz, Austria; University of Vienna, Vienna, Austria; Vienna School of International Studies, Vienna, Austria; Marco P. Vianna Franco  m.viannafranco@gold.ac.uk  Goldsmiths, University of London, London, UK; CY Cergy Paris Université, Cergy, France.

¹ Josef Popper adopted the pseudonym *Lynkeus* as a symbol of the ability to see further than others, taken after the lookout of the Argo in Greek mythology and the tower keeper in Goethe’s *Faust*.

and at the same time a thoroughly modern man.” Among other things, he highlighted

the significance of Popper’s work in the convincing statement of *aims*. (...) [A]s a prerequisite for rational planning we must have clarity of the aims to be set. Therefore one of the imperative requirements is to overcome blindness of purpose. Therein, Popper-Lynkeus can be of great service to us (Wachtel 1955, vii–viii).

Einstein’s attempt to disseminate the work of Popper-Lynkeus beyond German-speaking intellectual circles did not really succeed. His extensive writings on moral and social philosophy remain untranslated and the bulk of secondary literature on his life and work is circumscribed to German scholarship (Belke 1978; Brezina 2013; Döring 1988; Fruhwirth and Suppanz 2004; Hellin and Plank 1978; Tólos 1989). However, at the turn of the twentieth century, Popper-Lynkeus was a widely influential public intellectual. A talented natural scientist and engineer, he devoted most of his life to research in fields such as thermodynamics, mechanics, electricity, and aerodynamics. After his retirement in 1897, he shifted focus onto issues related to social reform and political economy, although one of his most important works in these fields, *Das Recht zu Leben und die Pflicht zu Sterben* (The Right to Live and the Duty to Die), had already been published as early as 1878 (Popper [1878] 1903). His main contribution to social science—and to the notion of a basic income—was thoroughly presented in the *Allgemeine Nährpflicht als Lösung der sozialen Frage* (the Universal Duty to Nourish as a Solution to the Social Question—see fn. 12), in which he argued in favour of universal social conscription to a nationwide service for the production and distribution of vital goods in order to ensure that individuals would have their basic needs met (Popper-Lynkeus 1912).²

Alongside Otto Neurath (1882–1945), Popper-Lynkeus has been retrospectively seen as an advocate of a heterodox, biophysical approach to economics that received the epithet of the “Other Austrian Economics” (Linsbichler 2022; Nemeth 2013; Uebel 1995, 2004, 2007; but see also Fillieule 2023). He called for a social program based on in-kind assessments of resource flows aiming to regulate production and distribution so that every individual had their subsistence ensured. In a short piece celebrating Popper-Lynkeus’s eightieth birthday, Neurath ([1918] 2021b, 131–136) described his friend’s stance on social reform as “utopian,” despite its intended reliance on thorough scientific methods of resource flow analysis and calculation in kind (*Naturalrechnung*). For Neurath and Popper-Lynkeus, utopianism is a serious approach to political economy without any connotation to lofty or dreamy detachment from reality. Accordingly, Neurath (1919, 228–231) praised Popper-Lynkeus’s propositions as both utopian and scientific.³

² Social conscription is here defined as the compulsory participation in some form of work during a certain amount of time to fulfil a social need. See Duindam (1999).

³ Neurath’s own *scientific utopianism* is comparatively more inclined to theoretical than activist elements, although he was certainly also motivated by an urge for social reform and acted accordingly. His utopianism and proto-ecological theory of wealth are primarily proposals for a specific comparative research program in the social sciences, yet they do not preclude social engagement of social scientists in their role as citizens. See Cunha and Linsbichler (2024), Linsbichler (2023), Linsbichler and Cunha (2023), and Uebel (2005, 2018). For a modern sketch of an applied comparative utopistics in the context of universal basic income, see e.g. Büchle and Wohlgenannt ([1985] 2016, 112–139).

In this context, Popper-Lynkeus has also been given a distinguished role in the intellectual history of ecological economics, a field in which economic processes are deemed as life-supporting metabolic processes subject to biophysical constraints on a finite planet.⁴ His *Naturalrechnung* has been mentioned as an early attempt to assess current stocks and flows of natural resources—i.e., energy and materials—as well as to predict and plan future ones in connection with the intra- and intergenerational satisfaction of basic human needs, the problem posed by exhaustible resources, and the incommensurability of values in non-market settings and without meaningful money prices (Linsbichler 2021a, 2021b, 2022; Martinez-Alier 1987; O'Neill 2004; Uebel 2005; Vianna Franco 2020; Vianna Franco and Missemmer 2023).

In light of Popper-Lynkeus's contributions to political economy and social reform, and, on the other hand, motivated by current debates on the notion of universal basic income (and less so by those pertaining to the history of ecological economics), this article aims at a detailed assessment of his proposition for an in-kind basic income based on a specific stance on economic organisation as a hybrid of planned and market-based social provisioning processes. At the same time, it redeems Popper-Lynkeus as an eminent figure within Viennese Late Enlightenment; assesses his social ethics as a foundation for his social program; and scrutinises his actual reform propositions in *Allgemeine Nährpflicht* as an approach with striking resemblances to contemporary proposals for a universal basic income.

2. Popper-Lynkeus as a public intellectual in Viennese Late Enlightenment

Popper-Lynkeus was born in Kolin, Bohemia, to a poor Jewish family. In the 1850s, he studied mathematics, physics, and applied sciences at the German Technical Institute in Prague (where he was denied a position as research assistant due to his ethnic background), and civil and hydraulic engineering at the Polytechnic Institute of Vienna. After failed attempts to work as an engineer in factories, in 1859 he accepted a modest position at the commercial branch of the French State Railway Company in Prague to assist with freight correspondence operations. Shortly thereafter he was transferred to the region of Banat (southern Hungary), where he fell ill with malaria and would only recover in 1862, after moving back with his parents.

After his rehabilitation, Popper-Lynkeus decided to move to Vienna to work as a private teacher. Without any connections, he could not secure enough lessons, so he ventured as a scientific correspondent for Viennese newspapers, but remained incapable of making ends meet. In 1866, he took a job as *Hofmeister*, teaching mathematics and physics at high school level. Having secured his livelihood for the moment, Popper-Lynkeus began to study economics, cultural history, and aesthetics, in addition to his readings on Chinese literature and culture, which marked the start of his life-long interest in the Confucian moral system. Furthermore, he attended lectures at the University of Vienna, especially those on experimental and mathematical physics. At this time, he and Ernst Mach became close friends (Popper-Lynkeus 1916).

⁴ For a landmark reference in ecological economics, see Georgescu-Roegen (1971).

After his position as *Hofmeister* had been terminated, Popper-Lynkeus realised that, as a Jew without strong social connections, he would never become a professor. Therefore, he opted for a more autonomous career, built around his talent as an engineer. He dedicated himself to inventions of commercial value, such as an appliance for improving the performance of industrial steam boilers, the demand for which kept him busy until a health-related early retirement in 1897. During these decades, Popper-Lynkeus also managed to publish several articles dealing with general mathematical and physical problems, and also on different engineering applications—mainly electrical and aeronautical ones, among them the first but forgotten proposition regarding the possibility to transport energy by means of electricity. Nevertheless, the fact that Popper-Lynkeus did not hold an academic position meant most of his works did not grant him scholarly recognition as an economist or philosopher at the time, not to mention the financial difficulties which prevented a proper fruition of his scientific projects.

In his autobiography, Popper-Lynkeus (1916, 2) recalls his “intense indignation about our [his and his family’s] economic conditions.” He described in retrospect how the poverty around him and the perception of a daunting social inequality marked him deeply from a very early age, and would arouse his interest in social and economic matters. Notwithstanding the dire financial situation of his family, Popper-Lynkeus acknowledged his mother’s role in his own enthusiasm for science and literature, being herself inspired by her brother (Selig Kohn, a writer and expert in mythology and literature who went by the pseudonym of Friedrich Nork). The family’s scholarly knack would continue to run in the family in the figure of the well-known philosopher of science Karl Popper.⁵

Despite Popper-Lynkeus’s not very sociable traits—he would later partly blame his own shyness and unsociability for the many professional rejections he suffered along his career—and the fact that he rarely left Vienna after his retirement (and, before that, mostly for professional reasons), several prominent intellectual figures interacted with him and supported his ideas. Distinguished physicists, philosophers, mathematicians, jurists, writers, and physicians held Popper-Lynkeus and his work in high esteem: not only Mach, Einstein, and Otto Neurath, but also Robert Julius Mayer, Wilhelm Neurath, Wilhelm Ostwald, Richard von Mises, Stefan Zweig, Rudolf Goldscheid, Julius Ofner, Wilhelm Jerusalem, Sigmund Freud, Arthur Schnitzler, Siegfried “Max” Braun, and others (Belke 1978; Blüh 1952; Brezina 2013; Sandner 2014).

Thereby, Popper-Lynkeus became a paragon and figurehead of Viennese Late Enlightenment, a rather heterogeneous conglomerate of social movements, clubs, and discussion circles which spurred intellectual and societal transformations in Vienna and to some extent central Europe in the early twentieth century. The many different manifestations of Viennese Late Enlightenment were united by a conviction that the

⁵ Karl Popper did not participate in his distant relative’s discussion circles but was well aware of his in-kind social program (Hacohen 2000, 372), which Karl labelled as “half-socialism” (Popper 1973, 51). Previously, he had merely reported that Marxists use this expression to dismiss Lynkeus (Popper [1945] 2013, 683). Commonalities between Popper-Lynkeus’s social program and Karl Popper’s political philosophy include the latter’s negative utilitarianism (i.e., the minimisation of aggregate suffering as a goal). Yet, with minor exceptions (including Popper and Eccles 1977, 3), there are hardly any direct references.

sciences, including the social sciences, and scientific philosophy improve individual and societal well-being. Scientific research was held in high esteem and even higher priority was given to the transfer and application of scientific knowledge.⁶ Many of the intellectuals associated with Viennese Late Enlightenment engaged in popular education through publications, public lectures, exhibitions in museums, or courses in workers' education centres (*Volkshochschulen*) which made Red Vienna famous. According to the enlighteners' hopes and expectations, educated citizens with a proper "scientific world conception" would improve their own individual process of decision-making and favour the application of scientific knowledge in the political reorganisation of the social order (Linsbichler 2021a, 2021b; Stadler 2001; Uebel 2000).

Accordingly, Popper-Lynkeus aspired to a scientifically developed social program (*Sozialprogramm*—he also refers to it as *Minimum-Institution*) based on a supposedly solid philosophical foundation and tirelessly propagated through different channels. Once the philosophical foundation was spread and understood by the public, he expected almost unanimous consent to his program. Figures of the Viennese Late Enlightenment generally tended to be more cautious regarding the limits of reason than their French predecessors. Accordingly, Popper-Lynkeus very narrowly restricted the scope of what he deemed was a universally agreeable and objective ethics. Many outstanding achievements bear witness to the "negative" or "cautionary" character of Viennese Late Enlightenment: Mach on the limits of perceiving an external world, Wittgenstein on the limits of language, Freud on the limits of consciousness, Gödel on the limits of mathematical proofs, Neurath and Hayek surpassing not only French enlighteners but also Popper-Lynkeus's caution regarding the limits of rationality.⁷ Yet, the Viennese, including Popper-Lynkeus, were not immune to overestimating rationality and reason. His and many other enlighteners' claims on the possibility of an objective ethical foundation of a social program, on the likelihood of unanimous consent to it, and on the almost arbitrary malleability of the social order remain overly optimistic and, at least in hindsight, sometimes verge on hubris.

3. The development of Popper-Lynkeus's *Sozialprogramm*

Many authors retrospectively portray their intellectual life as a progressive development, in which rough ideas contrived in adolescence continuously become more refined and more elaborately justified. Such autobiographical reconstructions usually ought to be taken with a grain of salt. Yet, Popper-Lynkeus's (Lynkeus 1910, ix–x) characterisation of his philosophical and political oeuvre as the result of such a steady progression can be clearly noticed if one reads his books in chronological order. Although the core ideas which constitute his social program were already in place in

⁶ Individual and societal well-being are to be understood in a broad sense here. Striving for education and enlightenment, helping others in doing so, and adopting a scientific worldview are not only regarded as a means to material wealth, but also as providing well-being themselves.

⁷ On the "negative" character of Viennese Late Enlightenment, see Francis (1985). On its "cautionary" character, in turn, see Linsbichler (2021a, 2021b).

1878, his underlying arguments—including those pertaining to calculation and economic planning of provisioning processes—would be gradually developed in his following works, finally leading to the presentation of his program in full in *Allgemeine Nährpflicht*.

Popper-Lynkeus carefully considered the date of publicising his social program for the first time. He chose May thirtieth, 1878, thereby saluting Voltaire at the one-hundredth anniversary of his death as a highly esteemed figure (Popper-Lynkeus [1878] 1903).⁸ Although the presentation is overly sketchy on occasion and some elements such as proposals for a penal reform would be dropped in later elaborations, all the main components of his social program were already in place in this first outline. The main task Popper-Lynkeus sets for himself and for social policy is the eradication of (absolute) poverty. Destitution and hunger call for new approaches and systematic countermeasures since neither socialism nor Christian religion were capable of providing a remedy.

Political economy, as he saw it then practiced at universities, was not particularly capable of providing guidance either. Considering purely theoretical work as in principle legitimate but beside the point or evading the paramount problems of the discipline, Popper-Lynkeus quickly dismissed the bulk of academic scholarship in political economy. Instead, he focused his criticism on those who brought upon themselves the challenge of social reform in a progressive sense and aimed at reforming the scope of the discipline accordingly. Most of the time, he is referring to different shades of socialist thought, from Karl Marx and revolutionary communists (Wilhelm Weitling) to utopians (Saint-Simon, Fourier, Proudhon, Owen, Ruskin) and social democrats (Henry George, Michael Flürscheim, Theodor Hertzka, Franz Oppenheimer, Hermann Losch, Wilhelm Neurath—Otto Neurath's father), whom he deems share his own objective of alleviating poverty. At a more general level, Popper-Lynkeus ([1878] 1903, 125–126) did assert two points with respect to the state of political economy as a discipline: First, he deemed it to be still in its early, underdeveloped stages: “This contemporary occupation with economic processes cannot yet be called a science after all; nothing but contested definitions, no insight at all which not every merchant possesses more lucidly, and absolutely no predictive power.”⁹

Second, even if a certain level of argumentative sophistication could be granted to his contemporary political economists, their interest for the most part lay in theoretical problems and in universal trends and regularities. By contrast, individuals in dire need and in danger of losing their right to live were often seen as exceptions to be safely ignored for the sake of the “bigger picture.” Popper-Lynkeus does not dismiss theoretical or methodological considerations per se; he rather criticises a perceived overemphasis. While most economists preferred to engage with theoretical or methodological work, his agenda was centred on practicality: Based on ethical foundations, the engineer Popper-Lynkeus called for and would later conduct empirical studies,

⁸ For Popper-Lynkeus's appreciation of Voltaire, see also Popper (1905b).

⁹ All quotes of primary sources in German have been translated by the authors.

develop economic planning techniques, and propose institutional arrangements united by the goal of helping the poor.¹⁰

Popper-Lynkeus deemed it obvious that traditional poor laws (*Armengesetzgebung*)—what we refer to as traditional welfare-state policies in Section 4—are inefficient and ineffective. Consequently, he advocated for more fundamental institutional changes. Instead of statutory means testing and cash payments, each human individual should *unconditionally* receive an amount of goods and services *in natura* corresponding to their subsistence needs.¹¹ Production and distribution of these goods and services ought to be provided by means of social conscription, the so-called “*Nährpflicht*.”¹² Just like military conscription legitimately serves the purpose of protecting citizens from foreign enemies, social conscription can and should legitimately be employed to protect all humans within the boundaries of the state from destitution (Popper-Lynkeus [1878] 1903, 147fn).

Similar arguments are made in his *Fundament eines neuen Staatsrechts* (Foundation of a New Constitutional Law), in which Popper-Lynkeus (1905a) criticises the perceived dilettantism of a wide spectrum of political economists (social democrats, socialists, liberals, conservatives, etc.) and social reformers who are stuck in endless discussions on abstractions, concepts, and ideals. He rejected the relevance of the concept of economic value as impossible to calculate and as useless for actual policies of poverty alleviation.

Nevertheless, Popper-Lynkeus had by then already started to embrace the resemblance between his own work and those of some of these social reformers, as in the cases of Latvian economist, statistician, and demographer Karl Ballod-Atlanticus (1919), American journalist and author Edward Bellamy (1888), and Austrian jurist and social theoretician Anton Menger (1903).¹³ He acknowledged their contributions before pointing to key disagreements between his own standpoint and theirs: (i) recipient universality in opposition to programs conditioned on class affiliation and reminiscent of right-to-work policies; (ii) the need for a minimum *in natura* in order to avoid traps of monetary transfers; (iii) the importance of differentiating

¹⁰ A comparison with Neurath might be illustrative again: Neurath draws a similar distinction between theoretical and practical economics, emphasizing the importance of both. Yet, Neurath consciously devoted many of his efforts to a reform of the conceptual and methodological underpinnings of economics, particularly the theory of wealth. He believed that theoretical economics reformed along these lines would ultimately facilitate guidance for the practical tasks which both Neurath and Popper-Lynkeus cared for—see, for instance, Neurath ([1911] 2021a). One might demur that ultimately Popper-Lynkeus failed to provide a practical account on how to educate the public to bring about desired institutional changes. Arguably, the efforts of Neurath, a self-declared “theoretical economist,” in museum pedagogy and pictorial education (ISOTYPE) were more effective in this regard.

¹¹ Popper-Lynkeus associates the notion of unconditionality in his social program with the lack of requirements one must fulfil to qualify as a recipient. The imposition of social conscription is not deemed as a condition potentially excluding anyone from the program, as those incapable to take part (e.g., disabled individuals) were exempted from it (Popper-Lynkeus, [1878] 1903, 147–149).

¹² Popper-Lynkeus coined the term *Nährpflicht*, which translates to “nourish-duty,” alluding to and rhyming with the very common notion of *Wehrpflicht*, the German term for military conscription. In this sense, the title of his 1912 magnum opus could also be translated as “General Nutrition Conscription as a Solution to the Social Question.” The double-edged title neatly indicates society’s duty to nourish each individual, as well as each individual’s duty to contribute to that task by serving in the *Nährarmee* (“nutrition army”).

¹³ Bellamy’s utopian novel has not gone unnoticed in the literature on universal basic income—see Fitzpatrick (1999).

between luxuries and supposedly objective needs; and (iv) the plea for a complementary, money-based free market for luxuries (see Vianna Franco and Missemmer 2023, Chap. 7). On this latter point, Popper-Lynkeus sees no reason why the elimination of profit, rent, and interest would help to satisfy the basic needs of all. The replacement of capitalist structures would not automatically engender an age of plenty, especially in the face of recurrent economic disruptions of political or natural character. Moreover, entrepreneurship was beneficial to intellectual, technological, and artistic progress.

The tendency of social reformers to be entangled with the abstractions of political economy should, according to Popper-Lynkeus, be replaced by more attention to the development of an ethical foundation to their programs. From his own viewpoint, “social class” did not need to be a relevant category in a socialist state. His ethical premise set out from a concept of “individual” which involves certain universal rights, a quite unusual starting point for a collectivist social program. Popper-Lynkeus disparages negative, abstract rights. As a living creature of nature, human individuals have concrete *material* requirements for subsistence. Being free in an abstract, absolute sense can only be lived and experienced once these concrete material requirements are fulfilled. The task of guaranteeing the conditions for the fulfilment of these requirements is imposed on society by Popper-Lynkeus, pointing at the not only *natural* but also *social* essence of his concept of human individuality. The concept of concrete, positive universal rights applies to each and every human individual, who are therefore equals and co-dependents in this respect.¹⁴ Popper-Lynkeus focuses on this equality of rights at the level of individuals and separates it from notions of equality which would imply a majority rule. There are events at the individual level which threaten human existence, and he lamented that such contingencies were ignored by political economists and their emphasis on aggregates and abstract categories.

Hence, ever since his first contribution in 1878, Popper-Lynkeus sought to establish a right to live as the cornerstone of his social program. It was understood as an entitlement to a prolonged life, also entailing certain obligations towards others. In contrast to Voltaire, Popper-Lynkeus renounced any individual duty to sacrifice one’s life for what a government or a majority perceives as the greater good. Consequently, he summarily rejects compulsory military conscription. Popper-Lynkeus’s stance is in fact composed of two parts, as clearly stated in the title of his first book: The State should guarantee everyone’s right to live (*das Recht zu leben*) and must not impose a duty to die under any circumstance (*die Pflicht zu sterben*).¹⁵ A more comprehensive (albeit not necessarily more logically satisfying) discussion pertaining to the ethics underlying his social program would follow a few years later.

¹⁴ Granting Popper-Lynkeus his *descriptive* account of human individuality as having material needs and (usually) being embedded in a social network does not entirely elucidate how he draws from that a *normative* conclusion, i.e., positive rights and an obligation upon society.

¹⁵ Popper-Lynkeus has summarily rejected a duty to die in his works, with mounting evidence against the unfounded misinterpretation that Popper-Lynkeus supported a duty to die for the sake of future generations in a context of exhaustible resource scarcity. For such a dubious claim, see Turner (2023, 115).

3.1. *Elaborating on institutions, progress and social ethics*

Popper-Lynkeus's *Das Individuum und die Bewertung menschlicher Existenzen* (The Individual and the Evaluation of Human Existences, Lynkeus 1910) serves as a preamble to his 1912 main contribution to social philosophy and policy. The purpose of this book was to establish the ethical foundations for his *Sozialprogramm*. The economic analysis, on the other hand, would soon follow, and is discussed in the following section. The main conclusions are already clear in the preface, where the author contested the widespread disregard for human life. Invoking the teachings of well-known social philosophers, he called for an institutional change towards preservation of the existence of each human individual. Needs perceived by him as objective should be ascertained and guaranteed based on scientific principles of physiology and hygiene, wherein one should also take into account what might be culturally considered as a basic need. The necessities of life were to be distributed *in natura* rather than in the form of money for all people, “without exceptions or conditions” (*ausnahms- und bedingungslos*) (Lynkeus 1910, ix). Concurrently, luxuries, negatively defined as whatever does not conform as meeting a basic human need, were meant to remain in the realm of entrepreneurial ingenuity and free markets, which to Popper-Lynkeus would actually become freer after basic needs are met. Such an institutional change would be made possible by summoning the newly available labour force after the extinction of compulsory military service to implement legislation on civil conscription focused on providing all with their livelihoods (*Nährpflicht*). While the end of compulsory military service would lead to a smaller impetus for war, the other greatest menace to human existence, an economic one, could be dealt with by means of the ensuing *Nährpflicht*.¹⁶

Popper-Lynkeus's deliberation starts with the assertion that life is threatened by sickness, hunger, and war. The task of the social reformer is to tackle the latter two. The main premise is the role played by the ethical sentiments or feelings (*ethische Empfindungen* or *Gefühle*) of such enlightened social reformers, which dispense with any justification, have the capacity to build common understanding, and act as a driving force of institutional and legal improvements such as the amelioration of individual rights. Reason, in contrast, plays a merely operational role in this process. Hence, progress is seen as intimately related to institutional improvement, measured in terms of satisfaction with the current state of affairs—e.g., crime rates, litigation, mental sickness, political engagement, uprisings, and revolutions—and obtained by means of education and social cohesion as forces counterbalancing any inherent bad traits of human nature. In his own words, “the ethical progress of humanity is namely that of institutions and not that of the private morals of a single individual” (Lynkeus 1910, 16–17). These improvements include social security networks, refrain from war, more autonomy in relation to religion and other potential sources of fanaticism, and support for cultural and educational activities. However, moral behaviour remained as an important, complementary element to institutional improvement: *Das Fundament* states that having one's basic needs met would act as a positive feedback

¹⁶ Popper accepts only one justification for war, namely defence of human lives, in which case he expects no shortage of volunteer soldiers.

mechanism, leading to a higher moral conduct at the individual level that assigns an increased value to human life and, in turn, would grant further public support to his social program.

The concept of an underlying structure of technical and economic development as a source of progress is for Popper-Lynkeus arbitrary and historically inaccurate. “Higher” states are always described in terms of ethical conceptualizations or value judgments (*Werturteil*). Progress comes primarily from the force or agency of social ethics (*Sozialethik*), first stemming from intellectual breakthroughs of “selfless reformers” and, on a later stage, from the demands of mass movements (Lynkeus 1910, 16). These selfless reformers—Popper-Lynkeus sees himself as one—are not to be confused with social or economic policymakers acting based on egoistic biases, self-interest, and party politics. The former are driven by sentiments in their *Sozialpolitik*, like Confucius, Buddha, Luther, Locke, Voltaire, Rousseau, Saint Simon, Fourier, Proudhon, Marx, and others. By doing so, they make Christian philosophy and Romanticism obsolete or redundant, if not prejudicial for the purposes of social progress. After all, altruism, as professed by the church, usually leads to evil and mischief, as in the case of the violent subjugation of colonised cultures motivated by the magnanimous duty to convert them to Christianity. Altruism neglects the view of the one in need, and those feeling it act according to their own views. Moreover, people are not willing to let go of petty conveniences even if the lives of others depended on it. Popper-Lynkeus is pessimistic with respect to overcoming a deep-rooted narrowness of altruism. We can rely on army-like camaraderie feelings in narrow social groups and families or in emergencies at best. Thus, ethics cannot be based on people wanting the well-being of others in their private sphere. It belongs foremost to the public realm.

In this sense, his *Sozialethik* is directly linked to a *public*—as opposed to a private—concern for “the well-being of current and future individuals,” irrespective of their usefulness to society (Lynkeus 1910, 8). He opposed the preference given by Nietzsche and Schopenhauer to the more virtuous, Herbert Spencer’s “shallow analogies” based on biology (social Darwinism), and pro-slavery economic arguments set forth by Johannes Karl Rodbertus and Adolph Wagner.¹⁷ Whereas the economic contribution of an individual to society (*wirtschaftliche Nutzen*) can be calculated in terms of her production and consumption within a given economy—as Popper-Lynkeus himself intended to do in his *Sozialprogramm*—that implies neither that the interests of the individual should coincide with those of the state, nor that the value of human life is in any way determined by such a contribution. In fact, Popper-Lynkeus refrains from preaching about any kind of moral restraint, how one is supposed to live, or on the goal or meaning of life.

Social progress is then assessed ethically, as the growing level of praise for the existence of any single human individual. It does not stop at the notion of equality

¹⁷ Popper-Lynkeus’s philosophical rejection of social Darwinism contrasts with some controversial statements on eugenics (i.e., the medical science of prevention of inheritable diseases, as it was understood in the beginning of the twentieth century). For example, he supported the prohibition of certain couples from marrying.

for all, as professed by Rousseau or Tocqueville.¹⁸ A positive definition is required: the observance of the welfare of the individual, not the absence of privilege (e.g., social security for elders and workers). Popper-Lynkeus makes extensive use of the maxim according to which no idea, goal, or activity should justify hurting someone else. Furthermore, institutions should not be permitted to fail in their task of avoiding even one human individual from dying of hunger. The life of one individual is more valuable than the greatest political, religious, or national undertakings in history, or than the most celebrated scientific, artistic, and technical achievements. This premise acts as a foundation for his *Sozialpolitik* as a whole, standing against compulsory military service and the prevailing political and economic institutions of his time. The utopian tones of his argument, nevertheless, did not seem to him as detachment from reality, and, in fact, he conceived his social reform propositions to be very practical.

As also thoroughly discussed in *Das Fundament*, Popper-Lynkeus viewed contemporary politics as in need of more science and piety.¹⁹ When it comes to the fundamental right to exist, political systems based on majorities or collectivities should not have a say. This is the motto he offers in the opening of an essay submitted in 1880 to a contest on how to address poverty, promoted by Isaac Pereire in the French journal *Liberté*, titled *Über die notwendige Verbesserung der Gesetzgebung* (On the Necessary Improvement of Law-Making): “for secondary needs, the majority principle; for fundamental ones, the principle of guaranteed individuality” (Popper 1905a, 70).²⁰

In sum, Popper-Lynkeus sets forth from the ethical sentiments of enlightened social reformers, contending how they amount to an objective moral imperative *and* they become accepted by everyone. Thereupon he formulates his own social program, also maintained to be objective and scientific. Yet, as opposed to views associated with French Enlightenment, which claimed objective ethics and unanimous consent amongst well-educated individuals on all political matters, Popper-Lynkeus narrowly restricted the scope of objectivity and agreement to the right to live. Although he spills ink extensively and in doing so collects original observations and insightful arguments, he fails in achieving the—perhaps overly ambitious—pronounced goals of (i) providing an ultimate justification for a positive right to live and (ii) an apodictic prediction of future consensus.²¹ In any case, while the ethical foundation is to him

¹⁸ Popper-Lynkeus also mentions the contributions of Robespierre in attributing a socioeconomic character to Rousseau’s call for equality: “everything that is absolutely necessary for life should be the common property of the whole society and only the abundance should be individual property, which is left to the activity of the business world” (Lynkeus 1910, 173).

¹⁹ To Popper-Lynkeus, politics was still stuck to a worldview based on colonialism and state violence. Science and piety, or an ethics-based scientific approach to politics, also meant for him the extension of the right to live to the population of colonised territories and to those involved in the conflicts arising from imperialism. See Lynkeus (1910) and Popper (1905a).

²⁰ Isaac Pereire (1806-1880)—as well as his older brother Émile Pereire (1800-1875)—was a financier, industrialist and publicist whose ideas on economic reform were strongly influenced by Saint-Simonian utopian socialism. See Davies (2014).

²¹ Other merits and problems of his arguments notwithstanding, Popper-Lynkeus arguably commits a naturalistic fallacy, i.e., he seems to deduce *normative* validity of the claim to a right to live from the *descriptive* finding of general agreement to the claim (in the predicted future). Such an inference is highly questionable.

non-negotiable, the particulars of the program are exhaustively debated and compared with similar propositions.

3.2. Towards a workable Sozialprogramm: empirics and policy-making

During the decades of preparation which preceded the *Allgemeine Nährpflicht*, Popper-Lynkeus offered glimpses of the role of statistics and of the operational details of his social program. The first step would be to nationalise, upon indemnification paid by taxes and in a synchronised effort, the sectors responsible for production and distribution of necessities (food, water, energy, transport, etc.). Only at a second stage would the state-led institutions involved gradually switch off the monetary system and go fully *in natura*. By the first decade of the twentieth century, he deemed time was ripe: the current social and political unrest or “state of fermentation” in Europe constituted a suitable moment for implementation of his program (Popper 1905a, 63).

The *Allgemeine Nährpflicht* elaborates on Popper-Lynkeus’s earlier ideas and lays out an extensive presentation of his reform propositions for the concrete case of Germany, including a comprehensive set of empirical data in support of his program. In order to provide for the continued existence of every individual, a universal conscription to a nationwide service for the production of vital goods was to be implemented. The resulting socio-economic order would ideally be composed of two separate economies functioning in parallel: a planned one, managed by a central economic accounting institution (*Ministerium für Lebenshaltung*) and exclusively limited to the satisfaction of basic needs; and a market-based one, dedicated to the allocation of luxurious goods.²² Putting one’s labour to the service of the former for a fixed amount of time did not prevent one’s free engagement with the latter. Through this arrangement, Popper-Lynkeus sought to keep the perceived benefits of the collective production and distribution of goods *in natura* while partially evading theoretical criticism towards in-kind economics faced by Neurath in the socialist calculation debate—e.g., how to account for production factors (Uebel 2005, 2018). Nevertheless, such a proposal still depended on the ability to calculate, plan, and match demand and supply in terms of labour and natural resources; in sum, on the technical and economic feasibility of the process of calculation in kind or *Naturalrechnung*.

Popper-Lynkeus envisaged the *Ministerium für Lebenshaltung* to be a purely economic institution. He thought of determining basic needs and of implementing efficient processes for production and distribution as purely scientific and technical affairs. The ministry could and should be independent from any political influence, or so Popper-Lynkeus hoped. His attempt to perform the relevant calculations in kind was based on statistical data concerning the required flows of vital goods or necessities of life. To that end, these were categorised by economic sector: food, housing,

²² Popper-Lynkeus also briefly argued for a complementary, unconditional basic income in the form of money for the satisfaction of minimum “cultural” standards of living by means of the purchase of given luxuries. He did not discuss this proposal in detail in the *Allgemeine Nährpflicht*, pointing to problems with calculation in kind for such intangible goods and services and the fact that they could not be provided by the *Nährarmee*. However, in his autobiography, he would go on to affirm that securing such “secondary” needs was another key component of his program (Popper-Lynkeus 1916, 86).

housing infrastructure (e.g., lighting and heating), clothing, health care, public services, and transportation, all of which he deems necessary for “a physiologically and hygienically comfortable standard of living” (Popper-Lynkeus 1912, 333). Unlike the well-known proposal of Neurath ([1925] 2004) on in-kind economic planning, which, as it happened, sought to calculate potential supply before tackling distribution, Popper-Lynkeus’s program commits him to set out from the non-negotiable, allegedly objective basic needs of individuals, then calculate the accruing aggregate demand for goods and services and, finally, establish the necessary supply in terms of labour and resources before assessing whence they ought to be procured.

In terms of demand, the food sector is quite illustrative. Popper-Lynkeus’s assessment of human nutrition needs is very encompassing, including calculations of minimum levels of water, minerals, protein, fat, and carbohydrates.²³ The characterisation of foodstuffs as either vital or non-vital is mostly given in physiological terms but habits and taste also play a role: coffee, for example, could be included in the program if large swaths of the population called for it. Collecting data from various sources, Popper-Lynkeus assigns a minimum level of food intake in kilograms per day to a German full-grown working man (calculations for children, women and the elderly were based on factors thereof), and proposes a diet based on meat, bread, potato, butter, cheese, milk, and sugar. Secondary products, such as fruits, were left for a more refined, subsequent round of accounting and planning. A similar rationale is presented for the other sectors using physical units such as cubic metres of gas, pieces of clothing, or number of transport vehicles.

Supply, on the other hand, is assessed firstly by means of the workforce and resources required to produce the necessities of life in each of these sectors. Popper-Lynkeus also allows for productivity gains and imports; in fact, in-kind international trade agreements were an important piece of the puzzle. He thus compares statistical data on actual production and imports with his estimates of aggregate consumption in Germany by sector. The particularities of each sector are discussed in some detail as well. Energy supply is an interesting case in point: Demand is calculated for each sector in different units (tons of coal, horse-power units, etc.) with an ensuing digression on the ability of the country to autonomously provide for itself. He devises different possible scenarios according to current energy sources and others in potential—which hints towards the role of inventive power and intellectual labour in his program as forces for qualitative shifts in provisioning systems—while acknowledging the problem of the exhaustible character of fossil fuels, mainly coal, and conjecturing about the energy costs of substituting it for other sources, especially renewables such as biofuels and hydropower. Resource exhaustibility threatened the long-term viability of his program (or of any type of provisioning system, for that matter); calculation in-kind thus had to anticipate and take stock of such difficulties. Often faced with less than promising estimates for the future, Popper-Lynkeus argued

²³ Popper-Lynkeus’s approach to calculating minimum dietary needs for the sake of addressing social questions resembles earlier arguments put forth by Antoine Lavoisier and other thinkers in the context of French Enlightenment, although there is no mention in his works which could substantiate a more direct influence. On Lavoisier, see, for example, Simmons (2015).

for more independence from exhaustible resources, and eventually for population control.

As a general result, he postulated the need for the conscription of 7.2 million men and 4.6 million women, who would compulsorily work in all these sectors respectively for thirteen and eight years, approximately seven hours a day. Such a contingent—a “nutrition army” (*Nährarmee*)—would suffice for securing the basic needs of a predicted total population of 70 million Germans by 1916 or 1917. Although Popper-Lynkeus (1912, 493) did not strive for “absolute exactness and completeness” in his calculations, he deemed to have established the feasibility of his program at national level.

As in the case of Neurath, Popper-Lynkeus’s accounting made use of physiological and holistic aspects of Machian epistemology, understood as a choice to handle both physical and psychical phenomena as a process of organisation and emergence of experiences.²⁴ Hard evidence on resource flows and stocks—representing production, distribution, and consumption of goods and services—were seen as starting points for building more systematic correlations rather than necessarily as limiting factors. In this sense, data was used mainly as a means upon which one can not only theorise, but also, even more importantly, alter and steer physical phenomena as integral counterparts of subjective, psychical manifestations (see also Vianna Franco 2020).

Naturalrechnung was thus deemed as an adequate tool for enabling the operationalisation of his social program, even if Popper-Lynkeus was often limited to secondary and unreliable data, as shown by the several divergences between his results and those obtained by Ballod-Atlanticus and others, or by the adoption of conservative margins. The use of average quantities, for example, was problematic because it overlooked fluctuations in production or the cultural specificities of consumption patterns. Still, Popper-Lynkeus argued that such averages, being quantities to be applied in an iterative planning process, were less troublesome from an empirical standpoint than aggregate variables typically calculated by economists, as the latter could say little about the standard of living of the masses in market economies with high inequality levels.

In any event, his main goal was to attest to the workability of the method, both in terms of the ability to objectively calculate the stocks and flows involved and of the accommodation of the subjectivity of cultural and normative dimensions. Once the program was adopted as official policy, there would be plenty of room for improvement, from the technicalities of calculation in kind to the quality of politically enacted, relevant value-based judgments. The more refined, comprehensive, and informative the processes of *Naturalrechnung* were, the better political decisions, social provisioning systems, and standards of living for all would be.

²⁴ The similarities between Mach’s and Popper-Lynkeus’s economic thought is discussed by Wulz (2015). See also Nemeth (2007, 2021). The epistolary exchange between them (partly available at <https://digital.deutsches-museum.de/de/digital-catalogue/archive-item/NL%2520174%252F2548/>) constitutes a promising research avenue on the topic.

4. Popper-Lynkeus's *Sozialprogramm* as universal basic income

Having presented the notion of *Allgemeine Nährpflicht*, its similarities with proposals for a universal basic income (UBI) call for a more systematic juxtaposition in light of previous mentions of Popper-Lynkeus in the UBI literature (e.g., Parijs and Vanderborght 2017). The conceptual framework we propose for this comparison further clarifies our characterisation of his social program and, moreover, facilitates disambiguation and elucidation of various types of contemporary UBI-like policy proposals.

We construe Popper-Lynkeus's social program as comparable with today's ideas for UBI to elucidate conceptual similarities and differences; however, we do not contend any direct line of intellectual influence from Popper-Lynkeus to UBI in the twenty-first century. A detailed historical account of ideas pertaining to UBI goes beyond the scope of the more systematically oriented remainder of this article.²⁵ We aim for clarification, not genealogy. Historical accounts such as Jäger and Zamora Vargas (2023) differentiate between in-kind social programs and a more prominently disseminated post-war notion of UBI.²⁶ In doing so, they add to the relevance of more systematic comparisons. As it will be discussed below, similarities between these two approaches abound, not least in the case of the push for “welfare without the welfare state.”

Just like Viennese Late Enlightenment drew from left and liberal/libertarian wings, so too is the general idea of unconditionality compatible with and appealing to strikingly different philosophical and political currents, including classical liberalism and libertarianism (Fitzpatrick 1999; Zwolinski 2012), Roman republicanism (Raventós 2007)—understood as the “universalisation of republican freedom” and the inclusion of the poor as citizens—and socialism (Fitzpatrick 1999; Ghatak and Maniquet 2019;

²⁵ Some authors trace UBI all the way back to Aristotle and the idea of material existence as a condition of freedom. In the modern era, and oftentimes within debates on public assistance or social insurance, Thomas More's *Utopia*, John Locke's *On the Poor Laws and Working Schools*, and other forms of “proto-basic income” in the thought of Thomas Paine, Maximilien Robespierre, Charles Fourier, John Stuart Mill, Herbert Spencer, Henry George, Henry David Thoreau, William Beveridge, and Bertrand Russell are mentioned—see, among others, Cunliffe and Erreygers (2004), Fitzpatrick (1999), Layman (2012), Parijs and Vanderborght (2017), Ranalli (2019), Raventós (2007), and Standing (2017). In the post-war economic literature, the term “basic income” appeared in the works of George D. H. Cole and Jan Tinbergen during the 1950s; renowned economists such as James Meade, James Tobin, and John Kenneth Galbraith favoured social policies akin to UBI (a “social dividend”), while Milton Friedman opted for a negative income tax as a similar approach and, like F.A. Hayek and Frank Knight, expressed the desirability of a guaranteed minimum standard of living including nutritionally adequate diet—see e.g. Jäger and Zamora Vargas (2023, 33–54), Parijs and Vanderborght (2017), and Raventós (2007). For the institutionalization of UBI in specific contexts, see Zamora Vargas (2020), and Sloman, Zamora Vargas, and Ramos Pinto (2021). For André Gorz's “second cheque” proposal, which resembled Popper-Lynkeus's program, see van Trier (2021). However, many of these precursors of modern UBI lack unconditionality. In general, it seems that before the 1980s there is hardly any systematic discussion of UBI as a concept, as focus lay on the appraisal of particular policy proposals.

²⁶ The authors point to a qualitative change over time, which is related to the fading away of agrarian and productivist ideologies, which sets apart in-kind distribution schemes from market-based monetary transfers. The concept of UBI would correspond above all to the latter, especially as it has been debated since the end of the twentieth century. Popper-Lynkeus's *Nährpflicht* is thus an interesting case in point as it strives to retain the role of markets while addressing poverty by means of calculation as well as distribution in-kind. In addition, Chirat (2023) accentuates the lingering question whether, given the possibility to determine a unanimously shared, objective public interest, in-kind proposals would be superior to monetary transfers, at least in terms of basic human needs?.

Parijs 1995). It is over the minutiae of actual UBI-like policies that disputes arise (De Wispelaere and Stirton 2004).²⁷

The main characteristics of Popper-Lynkeus's social program include unconditionality, circumscription to basic needs and thus eradication of (absolute) poverty as the ultimate objective, distribution *in natura*, and social conscription. These features allow for a more systematic contrast between Popper-Lynkeus's proposal and UBI as discussed today, both taken as alternatives to traditional welfare-state policies.²⁸ Juxtaposing these three approaches, in turn, facilitates understanding of Popper-Lynkeus's specific combination of ideas.

4.1. Examining the notion of unconditionality

Broadly speaking, UBI can be differentiated from traditional welfare state programs by its unconditionality. Yet, on closer analysis, at least three levels of "conditions" are not always sufficiently distinguished. The first type of condition is dictated by logic and the laws of nature and, thus, unavoidable. The second type—universality—requires decisions regarding group membership. The third type, namely the conditionality on willingness to work, is where the interpretation of Popper-Lynkeus's position becomes contentious.

First, each individual member of the community is unconditionally entitled to certain goods and services. Yet, the material existence and actual distribution of these goods is subject to the completion of certain productive processes. "Guaranteed" goods must be produced and transported to where they are actually consumed. This constraint applies in every institutional setup to all allocations of benefits *in natura* and, *mutatis mutandis*, also to cash benefits. Accordingly, the "unconditionality" of Popper-Lynkeus's social program does not refer to the material conditions of honouring the entitlement on the part of the provider but to the lack of statutory requirements for entitlement on part of the receiver. A universal positive right applies to everyone, yet it does not in and of itself create goods and services out of thin air, and so its fulfilment is *conditional* on certain productive processes and related technological possibilities. Until future technical breakthroughs change this, at least some individuals have to work and have parts of the product of their work distributed to recipients of UBI. Popper-Lynkeus's conscription makes this fact clearly visible and admits the, as a last resort, unavoidably "coercive character" of the proposal (1912, 356-357, 365) and of every positive right.²⁹

²⁷ Furthermore, in addition to negative income taxes, other initiatives comparable to UBI have been suggested, such as citizen's income, tax credits, remuneration for domestic or voluntary work, wage subsidies, guaranteed employment, working-time reduction, and stakeholder grants (one-off monetary grants). See Jäger and Zamora Vargas (2023), Parijs and Vanderborght (2017), Raventós (2007), and Tálós (1989).

²⁸ UBI has recently gained ground in different spheres of public discourse at local and national levels, and especially in academic circles. This is often attributed to growing awareness of poverty traps, of rising social inequality, of an alleged "erosion of freedom that goes hand-in-hand with huge disparities of income and wealth" (Raventós 2007, 20), as well as of challenges in the context of ecological sustainability. On the latter, see Andersson (2010), Birnbaum (2010), Boulanger (2010), and MacNeill and Vibert (2019).

²⁹ See also Popper-Lynkeus (1912, 297) for a criticism of Bellamy, who neglects the potential necessity of coercive measures.

Second, unconditionality means that each and every member of the community is entitled to the full benefits of Popper-Lynkeus's social program. Neither age, sex, gender, class, ethnicity, religion, health, disability, income, wealth, occupation, indigence, criminal record, nor any other criteria are relevant for entitlement. Having said that, a community implementing Popper-Lynkeus's or a similar program would have to grapple with one necessarily remaining condition: membership in the community. If the relevant community is the nation-state, obtaining citizenship is tantamount to eligibility for the social program. Indeed, the very first sentence of Popper-Lynkeus's most extensive and mature portrayal of his plan declares that the objective is to safeguard "every *national*" from (absolute) poverty and sorrow from the cradle to the grave (1912, 333, our emphasis). Consequently, the question of how and when individuals, including born and unborn children, are admitted to or expelled from the community becomes crucial. Such a consideration still begs the question whether animals, aliens, artificial intelligences, and other non-human entities may also apply or be applied for membership in the relevant community.³⁰

Following Parijs and Vanderborght (2017, 16-23), this second level of unconditionality is often referred to as "universality" in modern discussions. From their viewpoint, the social programs of Gracchus Babeuf, Edward Bellamy, and Jacques Duboin were indeed universal but not unconditional at all, as their proposals coupled UBI with a universal obligation to work (applicable at least to able-bodied individuals), in an attempt to deter free-riding behaviour. In rendering basic income universal but conditional on the willingness to work, these thinkers are not early champions of UBI but proponents of "a uniform basic wage, spread over people's whole working lives, in exchange for several years of conscripted labor" (2017, 82). Along similar lines, Jäger and Zamora Vargas (2023, 4) also argue that more genuine versions of UBI entail a rejection of the duty to work, thus contrasting a conscription-based in-kind distribution and the "free money" paradigm. Be that as it may, work requirements have been a recurrent element in utopias depicted as part of a longer history of UBI. Thomas More, for example, included the need for diligent work with few exceptions, namely up to a maximum of six hours a day. Every citizen in his Utopia had to stay at least two years in the countryside working in agriculture, although all would otherwise be free to choose their own trade. Furthermore, Popper-Lynkeus was adamantly critical of right-to-work policies and, therefore, would have rejected any reference to his program as a type of "uniform basic wage" as well as any association with wage-labour schemes. In this perspective, his proposal was in line with the

³⁰ On the question of young children's rights, Popper-Lynkeus champions a pronounced position. He argues that children have not yet developed self-consciousness and consequently lack the self-preservative drive which he considers a requirement for counting as an individual. Since only individuals enjoy a right to live, he advocates for and elaborates on state-run execution programs of new-borns of mothers with many children to mitigate purported problems of overpopulation. Admitting that this is a "sad necessity," he insists on procedures which are as painless as possible for the child, and which show "utmost consideration for the feelings" of the mother. To avoid the stir and resistance to be expected from killing new-borns, Popper-Lynkeus suggests that mothers who, according to the universal mandatory registry, have reached the maximum number of children should be urged to privately seek an abortion. This is in their own interest, since it avoids the graver emotional pain of having their new-born killed by the state, or so Popper-Lynkeus maintains (1912, 766-775). In the second edition of the *Allgemeine Nährpflicht* (1923), the details of the execution program were curtailed.

attempt to shield individuals from employment traps proper to the current intentions of UBI.

Formally speaking, willingness to work is merely a special case of a condition which potential recipients of entitlements must fulfil. It involves forms of statutory means testing (ability to work and opportunity to work) just like traditional welfare state policies.³¹ Yet, we treat willingness to work separately because it has received special consideration in the literature and because, on that front, we deviate from Parijs's and Vanderborght's interpretation of Popper-Lynkeus.

Third, although we disagree, it is indeed not implausible to follow Parijs and Vanderborght in regarding Popper-Lynkeus's social program as conditional on willingness to work. A definite ascertainment will perhaps not be possible because Popper-Lynkeus hardly dwelt on the point. We think he had two reasons for brushing over the seemingly pivotal question of unwillingness to work. He firmly believed that everyone would eagerly work once the right to live and its consequences had been unanimously understood and endorsed, so he saw no need to ponder hypotheticals.³² Also, in Popper-Lynkeus's treatment the questions of distribution and of production are kept strictly separate. Everyone has an unconditional right to live and should thus receive the goods and services necessary to meet their basic needs (as designated by the social program). This ethical cornerstone was sacrosanct. Of course, the pertinent goods and services have to be produced somehow. Yet, the minutiae of the institutions and processes necessary for production are a separate, "technical" matter to which Popper-Lynkeus subsequently devotes himself with great diligence. After a thorough investigation of primary and secondary sources, it seems Popper-Lynkeus has only once expressly affirmed that individuals who are unwilling to work should lose their entitlement to the goods and services necessary to meet their basic needs. It appears as an addition in the second, posthumously published edition of *Allgemeine Nährpflicht*, where he contemplates that in the most extreme cases, after all moral persuasion has been futile, goods and services for basic needs should be withheld (1923, 157).³³ By contrast, we take the structuring and the "spirit" of all his earlier writings, as well as several broad-brush exclamations that everyone under any circumstance should receive the minimum, to indicate that for most of his life he did not imply an annulment of the right to live under any circumstance. While we admit that any interpretation on this matter rests on very vague grounds, two specific remarks by Popper-Lynkeus further support our reading, albeit only indirectly. Both

³¹ Given guaranteed opportunities to work (see e.g. Pfaff [1972] 1986), Gorz (1986, 59-60) conjectures that very few people would not work voluntarily and seems to forego tests for the ability to work. Yet, he upholds a provision according to which everyone without a certain number of registered paid working hours automatically loses the entitlement to basic care. This plan may be bureaucratically easy, transparent, and without problematic incentives but is likely inimical to individuals with severe disabilities.

³² Neurath, in Popper-Lynkeus's spirit, espoused a calculated laissez-faire approach for some free-rider problems too. He maintained that public reading rooms would operate much more efficiently if they disregarded the depletion of books by "dishonest people" (which Neurath expected to be negligible) instead of hiring overseers and administering penalties (see Paul Neurath 1994, 94).

³³ There is one earlier formulation with a similar thrust. When rebutting an objection according to which immigrants could endanger prosperity in his utopia, Popper-Lynkeus (1912, 398) clarifies that individuals who have not been naturalised have no claim to the benefits of the social program. Curiously, in this sentence, he also explains they have no positive right because they did not serve in the *Nährarmee*—instead of merely pointing out that they are not citizens. We thank a reviewer for pointing us to this passage.

remarks negate that there should be a direct link between distribution (the right to live) and production (the duty to work): waiving the right to the guaranteed goods and services does not diminish one's duty to serve in the *Nährarmee* (Popper-Lynkeus 1912, 358-359); and, if someone is ill or otherwise inept to work, the duty is (temporarily) suspended—this is, however, quite independent from the unconditional right to live as those unfit to work “as a matter of course” receive the same benefits as everyone else (1912, 359). We interpret the entitlements granted by Popper-Lynkeus's social program as universal and unconditional.

Having said that, even readers who do disagree and read the entitlement as conditional on the willingness to work should clearly disambiguate the different types of conditionality. As per type-1 condition, given the current state of technology, *someone* must work to produce the goods and services required to fulfil positive rights such as a right to live. Popper-Lynkeus clearly understood this nexus and social conscription explicitly displays the potentially coercive consequences of positive rights. Ultimately, at least in a hypothetical case in which a sufficiently large number of individuals are unwilling to work, someone must be coerced. This unavoidable condition should, however, not be conflated with the specific means and bylaws which Popper-Lynkeus had in mind for addressing the material necessities of furnishing basic goods and services. Whether he would ultimately put people who are unwilling to work into prison on bread and water like Bellamy (“probably unnecessary and conveying an uncomfortable impression” [Popper-Lynkeus 1912, 297]), flog them (not in line with his social ethics), or revoke their entitlement to fulfilment of basic needs (highly unlikely as shown above), is not made plain and seemed to be a separate, minor matter at best. How exactly work is to be enforced if necessary is not an essential part of Popper-Lynkeus's proposal.

4.2. Popper-Lynkeus's Sozialprogramm and UBI in systematic comparison

The conceptual framework we introduce below advances perspicuity of ensuing discussions by neatly separating matters of production from matters of distribution. If it were not for social conscription, one could, for instance, have UBI “in exchange” for higher taxation. A detailed account of Popper-Lynkeus's work shows that avoiding free riders was not a crucial part of his (or Neurath's) approach and that he refrained from any hints towards the wage-labour relations alluded to by Van Parijs and Vanderborght. Furthermore, while he pursued an ethical foundation for his program, his argumentation on social conscription was mostly based on a contrast with the then widely accepted practice of military conscription. Popper-Lynkeus's ethics condones duties which each individual owes to society but—in comparison to the position implicit in the prevalent practice of military conscription—emphatically denies any duty to sacrifice one's life. There is no “*Pflicht zu sterben*” (Popper [1878] 1903).³⁴

³⁴ Faced with criticism for the imposed duty to work for the common weal, a defender of Popper-Lynkeus's ethical position can at the very least argue for relative progress in comparison to the (potential) duty to die contained in military conscription.

Hence, *unconditionality* can be interpreted as present in Popper-Lynkeus's social program as well as in contemporary proposals for UBI. Although the term is sometimes employed for a wide variety of proposals which differ amongst themselves in numerous ways, the Basic Income Earth Network (BIEN) defines basic income as "a periodic cash payment *unconditionally delivered to all on an individual basis, without means-test or work requirement*" (our emphasis).³⁵ The adjective "basic" conveys another parallel to Popper-Lynkeus's framework, namely "the idea of a floor on which one can stand because of its very unconditionality" (Parijs and Vanderborght 2017, 10). Raventós (2007, 8) provides another definition, also stressing the unconditional entitlement of all group members:

Basic Income is an income paid by the state to each full member or accredited resident of a society, regardless of whether he or she wishes to engage in paid employment, or is rich or poor or, in other words, independently of any other sources of income that person might have, and irrespective of cohabitation arrangements in the domestic sphere.

Unconditionality and the circumscription to basic needs separate Popper-Lynkeus's program and UBI from many other social security regulations. The characteristic condition in traditional welfare states, means testing, is loosely based on the premise that only those perceived as destitute or in disadvantage should receive social benefits.³⁶ In the remainder, we will refer to social legislation which sets conditions for social benefits as traditional welfare-state policy.³⁷

Proponents of UBI and Popper-Lynkeus have argued that means testing, the cornerstone of welfare-state policy, not only generates bureaucracy and costs, but it is also likely to trigger corruption and deception. If, instead of unconditionality, a group of welfare recipients can be identified and their eligibility can be questioned, traditional welfare states might eventually create an atmosphere of resentment and envy. Moreover, critics of the welfare state claim that it often incentivises not being socially productive. Conversely, some might argue that UBI weakens (monetary) incentives for otherwise unattractive socially productive labour to a point where overall productivity drops dramatically.

Popper-Lynkeus's social program is a milestone in the intellectual history of alternatives to the traditional welfare state. However, it also features crucial differences to contemporary blueprints for UBI. Hence, we aim to facilitate clarifications and comparisons in current debates by providing a conceptual framework that emphasises two main differences between Popper-Lynkeus's social program and the prevalent conception of UBI (Table 1). Nonetheless, we do not affirm that these are the only differences or that these two differences constitute the most important debate in the context of UBI. Among other issues, the problem of unconditionality and of sanctions for unwillingness to work certainly remain hot topics.

³⁵ See <https://basicincome.org/>.

³⁶ Some Hayekians would argue that the ethical intuition behind this premise appeared and evolved in small hunter-gatherer communities but implicates problematic consequences when institutionalised in nation states with millions of citizens or in a globalised world. See Hayek (1988).

³⁷ In Esping-Andersen's influential typology of welfare states, the so-called "liberal regimes" and "conservative and corporatist regimes" neatly match our characterization. In contrast, the "social democratic regimes" lean towards unconditionality. Differently from UBI, however, "social democratic" welfare states are not content with securing a basic level of needs but aim at raising even higher the level of wealth guaranteed by the state (Esping-Andersen 1990).

Table 1. Production and distribution in social programs based on unconditionality.

		Distribution	
		Monetary payments	Provisioning <i>in natura</i>
Production	Monetary inputs (typically from taxation)	Standard UBI	Most public goods and services
	In kind (draft, tithe)	–	Popper-Lynkeus's <i>Nährpflicht</i>

Source: the authors.

First, Popper-Lynkeus advocates distribution of goods and services *in natura*, whereas standard UBI delivers monetary payments. UBI theoreticians have lately stressed benefits of such payments in detriment of in-kind forms of basic income (e.g., food, shelter, health services) which have been the preferred social policy in Europe since the sixteenth century. Van Parijs and Vanderborgh sharply distinguish between monetary and in-kind basic income, and conclude that the decision for the best approach would be context-specific. The latter would ensure that such transfers are spent on basic human needs rather than on perceived luxuries and vices. Conversely, cash payments would be in general more practical, efficient, and less subject to lobbying and corruption. They would also foster the formation of markets in poor areas and, above all, assign a higher level of freedom to individuals, a requirement that lies at the core of the concept of UBI itself.³⁸

Second, Popper-Lynkeus champions production of the goods and services to be allocated by means of social conscription. Apart from rare and partial instances, this mode of production has been abandoned. For the most part, modern nation-states use taxpayer money to either distribute sums of money or purchase goods and services on the market and allocate them to entitled recipients.

Standard UBI as well as Popper-Lynkeus's social program handle production and distribution uniformly, i.e., production inputs and allocated benefits consist of the same medium, money and goods respectively. UBI and most contemporary welfare states collect taxes in the form of money (as opposed to the medieval tithe) and distribute cash payments to recipients. By contrast, Popper-Lynkeus drafts work force *in natura* and distributes goods and services to recipients also *in natura*.³⁹ In principle, the mode of production and the form of allocation of benefits could differ. For instance, the state can use collected taxes to buy goods and services on the market (upper right corner in Table 1). This is a common practice in, for example, education, healthcare, and law enforcement provided as public goods, which are here conceptually distinguished from traditional welfare state programs insofar as the former are unconditional. As a fourth and offbeat (or hypothetical) option, the goods produced by draftees could be sold on the market

³⁸ Goodman and Goodman (1947, 200), however, argue that in-kind basic income favours individual freedom, as it provides the bare minimum and thus reduces the influence of the state: "if freedom is the aim, everything beyond the minimum must be rigorously excluded, even if it should be extremely cheap to provide; for it is more important to limit political intervention than to raise the standard of living."

³⁹ Irrespective of whether security from foreign invasions is considered a basic need or not, almost all nation-states—at least pretend to—prevent foreign invasions by providing military protection as a service *in natura*. Some countries "produce" this service entirely with monetary inputs by purchasing tanks as well as wage-earning soldiers on the market. Other countries replace some of these monetary inputs by military conscription. It has been argued that a draft hides the true cost of the military because the size of the state is often measured by monetary state expenditure in relation to gross national product. If inputs and outputs can be measured by meaningful money prices, it increases transparency of the size of the state in this respect. A draft, as well as laws and bylaws, which determine business and personal life are indicative of influence and "size" of the state, but are much harder to measure in a satisfactory way (Higgs 1987, 20-34).

and the monetary proceeds be used for monetary payments to entitled recipients (lower left corner in Table 1).

Proponents of all four possible combinations sketched above can aim to achieve the same goal: Unconditionally providing a basic level of income. These alternatives concern the means to achieve this goal. This article does not intend to answer the numerous questions related to practicability, accountability, transparency, and efficiency of these means, but hopefully contributes to improved conceptual clarity.⁴⁰

5. Final remarks: *Allgemeine Nährpflicht* after Popper-Lynkeus

Einstein praised Popper-Lynkeus for overcoming blindness of purpose and for establishing a statement of aims as a basis for rational planning. His approach to social issues was a typical manifestation in the spirit of Viennese Late Enlightenment. The ethics- and science-based social program of Popper-Lynkeus sought to imbue political economy with the utmost commitment to a right to live and a sense of practicality to uphold it. The employment of calculation in kind as a method of assessing and improving social provisioning, in conjunction with social conscription, would guarantee an unconditional basic level of goods and services for every human individual. But how successful was Popper-Lynkeus in turning his program into policy?

The high hopes and expectations of the younger Popper-Lynkeus did not materialise. Early in his career, he was very optimistic that institutional changes associated with his social program could and would be implemented very quickly and without disturbing a smooth functioning of social and economic affairs—“without mutilation” (Popper [1878] 1903, 244–245). Later on, he rather expected changes in the societal role of reason (in replacement of religion and metaphysics) to come about gradually and slowly. In a politically practical sense, Popper-Lynkeus’s *Nährpflicht* was not a particularly attractive proposition in the Habsburg Empire, which hints towards the limits of the *zeitgeist* of eradicating pauperism and fostering social development. In addition, he received virtually no attention from political economists, let alone responses to his harsh criticism towards their field. Yet, he remained convinced of the applicability and urgency of his social program until the end of his life, despite his personal disappointment in those who discarded his proposal but offered neither theoretical objections nor empirical rebuttals (Popper-Lynkeus 1916). In a pamphlet elucidating his position towards socialism, he stated that no one had ever, in over forty-two years, actually attempted to thoroughly counter his ideas, whereas a lot of time and effort were wasted in trying to pinpoint his ideological and political stance. He responded with the following punch line:

Experience will show which method shall reach the goal. However, under no circumstance is one allowed, in relation to my method, (...) to take the opportunity to label me as this or that; I can and want to be called neither a socialist, a communist, a liberal, nor a conservative and so forth (Popper-Lynkeus 1920, 8).

His intellectual legacy in Austria lived on until the late 1930s and the National Socialist takeover, not least due to the writings of friends and colleagues and above all the

⁴⁰ Many of these problems circle back to the socialist calculation debates, in which calculation in kind and economies *in natura* were devised as possible solutions and, in turn, vehemently criticised (Lavoie [1985] 2015, [1985] 2016; Linsbichler 2021a, 2021b; O’Neill 1996; Uebel 2004, 2007).

undertakings of the “*Verein Allgemeine Nährpflicht*,” an association created in 1918 for this specific purpose (Gelber 1923; Plank 1938).⁴¹ Popper-Lynkeus’s death in 1921 was met with great commotion amongst scholarly and political circles in Vienna, and, in 1926, a bust in his memory was placed in Vienna’s City Hall Park, accompanied by eulogistic speeches by Moritz Schlick, Stefan Zweig, and Sigmund Freud. The bust was removed and destroyed after the annexation of Austria in 1938. A new statue, commissioned in 1951, continues to adorn City Hall Park unto this day. In the 1980s, engineer and Popper-Lynkeus’s disciple August Schorsch founded the *Josef Popper Nährpflicht-Stiftung*, a non-profit foundation affiliated with the Johann Wolfgang Goethe University in Frankfurt am Main, aiming to rekindle studies on Popper-Lynkeus’s intellectual legacy.⁴² The idea of *Allgemeine Nährpflicht* and its successor proposals live on in the twenty-first century.

Popper-Lynkeus’s *Nährpflicht* fits well within the history of ideas pertaining to the topical issue of UBI. To that effect, a systematic comparison between his and contemporary proposals shows how production and distribution *in natura* makes his program distinct from standard approaches to UBI. Our exposition of the theoretical background and empirical efforts of Popper-Lynkeus attests to his original and thorough contributions both to political economy and the pressing social questions of his time. Furthermore, contextualising and analysing his program as an alternative to the traditional welfare state not only adds to the historiography and elucidates contemporary debates on UBI but also enhances our understanding of philosophy and political economy in Viennese Late Enlightenment.

Acknowledgements

We would like to acknowledge the precious hints, comments, and suggestions kindly made by Ivan Ferreira da Cunha, Karl Milford, Antoine Missemer, Elisabeth Nemeth, Günther Sandner, Friedrich Stadler, Carlos Eduardo Suprinyak, Thomas Uebel, Louise Villeneuve, and Monika Wulz, as well as the feedback received during the 8th Conference of the Latin American Society for the History of Economic Thought (ALAHPE), the 19th Annual Conference of the Italian Association for the History of Political Economy (STOREP), the 7th Austrian Economics Meeting Europe, the Institute Vienna Circle Philosophy of Science Colloquium Special Panel *Utopianism, Rationality, and Thought Experiments in Viennese Late Enlightenment*, and a session of the Cedeplar/UFGM reading group in the history of economic thought. The detailed, extensive, and encouraging comments made by two anonymous reviewers helped us to improve the article.

Disclosure statement

The authors report there are no competing interests to declare.

Funding

The authors disclose receipt of the following financial support for the research, authorship, and/or publication of this article: This research was funded in whole, or in part, by the Austrian Academy of Sciences and by the Austrian Science Fund (FWF) [grant number ESP

⁴¹ On the *Verein Allgemeine Nährpflicht*, see Belke (1978).

⁴² See Schorsch (1986). More information on the *Josef Popper Nährpflicht-Stiftung* are available at https://www.fb03.uni-frankfurt.de/50578273/30_Jahre_Josef_Popper_N%C3%A4hrpflicht_Stiftung.

10.55776/ESP206]. It was also supported by the EUTOPIA Science and Innovation Fellowship Programme and funded by the European Union Horizon 2020 programme under the Marie Skłodowska-Curie grant agreement No 945380. This article reflects only the authors' views and funding agencies are not responsible for any use that may be made of the information it contains. For the purpose of open access, the corresponding author has applied a CC BY public copyright licence to any Author Accepted Manuscript version arising from this submission.

ORCID

Alexander Linsbichler  <http://orcid.org/0000-0003-4302-1357>

Marco P. Vianna Franco  <http://orcid.org/0000-0002-0054-8717>

References

- Andersson, Jan Otto. 2010. "Basic Income from an Ecological Perspective." *Basic Income Studies* 4 (2): 4. doi:10.2202/1932-0183.1180.
- Ballod-Atlanticus, Karl. 1919. *Der Zukunftstaat: Produktion und Konsum im Sozialstaat*. 2nd ed. Stuttgart: Dietz.
- Bellamy, Edward. 1888. *Looking Backward 2000-1887*. Boston: Ticknor.
- Belke, Ingrid. 1978. *Die sozialreformerischen Ideen von Josef Popper-Lynkeus (1838-1921) im Zusammenhang mit allgemeinen Reformbestrebungen des Wiener Bürgertums um die Jahrhundertwende*. Tübingen: J.C.B. Mohr.
- Birnbaum, Simon. 2010. "Introduction: Basic Income, Sustainability and Post-Productivism." *Basic Income Studies* 4 (2): 3. doi:10.2202/1932-0183.1178.
- Blüh, Otto. 1952. "The Value of Inspiration: a Study on Julius Robert Mayer and Josef Popper-Lynkeus." *Isis* 43 (3): 211-220. doi:10.1086/348106.
- Boulanger, Paul-Marie. 2010. "Basic Income and Sustainable Consumption Strategies." *Basic Income Studies* 4 (2): 5. doi:10.2202/1932-0183.1179.
- Brezina, Friedrich F. 2013. *Gesicherte Existenz für Alle: Josef Popper-Lynkeus 1838-1921*. Vienna: Monte Verita.
- Büchle, Herwig, and Lieselotte Wohlgenannt, eds. (1985) 2016. *Grundeinkommen ohne Arbeit*. Wien: Verlag des ÖGB.
- Chirat, Alexander. 2023. "Universal Basic Income, Basic Needs, and Consumer Sovereignty." *Oeconomia* 13 (13-1): 89-100. doi:10.4000/oeconomia.14034.
- Cunha, Ivan Ferreira da, and Alexander Linsbichler. 2024. "Ciência, Imaginação e Valores na Virada Energética Alemã: um exemplo da metodologia de Neurath para a tecnologia social." *Kriterion: Revista de Filosofia* 64 (156): 673-700. doi:10.1590/0100-512x2023n15603ifc.
- Cunliffe, John, and Guido Erreygers, eds. 2004. *The Origins of Universal Grants: An Anthology of Historical Writings on Basic Capital and Basic Income*. Basingstoke: Palgrave Macmillan.
- Davies, Helen M. 2014. *Emile and Isaac Pereire: Bankers, Socialists and Sephardic Jews in nineteenth-century France*. Manchester: Manchester University Press.
- De Wispelaere, Jurgen, and Lindsay Stirton. 2004. "The Many Faces of Universal Basic Income." *The Political Quarterly* 75 (3): 266-274. doi:10.1111/j.1467-923X.2004.00611.x.
- Döring, Diether. 1988. "Zur Aktualität der Diskussion über ein garantiertes Minimum—Überlegungen zu einer erneuten Veröffentlichung der Vorschläge J. Poppers (Lynkeus) zur Sozialreform." *Sozialer Fortschritt* 37 (5): 110-113.
- Duindam, Simon. 1999. *Military Conscription: An Economic Analysis of the Labour Component in the Armed Forces*. Heidelberg: Springer.
- Einstein, Albert. 1949. *The World as I See It*. New York: Philosophical Library.
- Esping-Andersen, Gøsta. 1990. *The Three Worlds of Welfare Capitalism*. Cambridge, UK: Polity Press.

- Fillieule, Renaud. 2023. "The Poverty of Radical Ecological Economics: A Critique of Clive Spash from the Viewpoint of the Austrian School." *Journal des Economistes et des Etudes Humaines* online first 64: 928–934. doi:10.1515/jeeh-2023-0018.
- Fitzpatrick, Tony. 1999. *Freedom and Security: An Introduction to the Basic Income Debate*. Basingstoke: Palgrave Macmillan.
- Francis, Mark. 1985. "Introduction." In *The Viennese Enlightenment*, edited by Mark Francis, 1–14. London and Sydney: Croom Helm.
- Fruhwith, Andrea, and Werner Suppanz, eds. 2004. "Josef Popper-Lynkeus. Zwischen Individualethik, Ich-Verlust und Social Engineering – Anthropologische Montagefahrten eines Maschinen- und Menschentechnikers." Special issue, *Newsletter MODERNE. Zeitschrift des Spezialforschungsbereichs Moderne – Wien und Zentraleuropa um 1900* 3.
- Gelber, Adolf. 1923. *Josef Popper-Lynkeus: sein Leben und sein Wirken*. Wien, Berlin, Leipzig and New York: Interterritorialer Verlag "Renaissance."
- Georgescu-Roegen, Nicholas. 1971. *The Entropy Law and the Economic Process*. Cambridge, MA: Harvard University Press.
- Ghatak, Maitreesh, and François Maniquet. 2019. "Universal Basic Income: Some Theoretical Aspects." *Annual Review of Economics* 11 (1): 895–928. doi:10.1146/annurev-economics-080218-030220.
- Goodman, Percival, and Paul Goodman. 1947. *Communitas: Means of livelihood and ways of life*. New York: Vintage Books.
- Gorz, André. 1986. "Garantierte Grundversorgung aus rechter und linker Sicht." In *Das garantierte Grundeinkommen. Entwicklung und Perspektiven einer Forderung*, edited by Michael Opielka und Georg Vobruba, 28–35. Frankfurt am Main: Fischer.
- Hacohen, Malachi H. 2000. "Karl Popper." *The Formative Years 1902-1945. Politics and Philosophy in Interwar Vienna*. Cambridge: Cambridge University Press.
- Hayek, Friedrich A. 1988. *The Fatal Conceit. Vol. 1 of The Collected Works of F.A. Hayek*, edited by W.W. Bartley III. Chicago: University of Chicago Press.
- Hellin, Frederick P., and Robert Plank. 1978. *Der Plan des Josef Popper-Lynkeus*. Bern, Frankfurt am Main and Las Vegas: Peter Lang.
- Higgs, Robert. 1987. *Crisis and Leviathan: Critical Episodes in the Growth of American Government*. Oxford: Oxford University Press.
- Jäger, Anton, and Daniel Zamora Vargas. 2023. *Welfare for Markets: A Global History of Basic Income*. Chicago: University of Chicago Press.
- Lavoie, Don. (1985) 2015. *Rivalry and Central Planning. The Socialist Calculation Debate Reconsidered*. Arlington, VA: Mercatus Center.
- Lavoie, Don. (1985) 2016. *National Economic Planning: What is Left?* Arlington, VA: Mercatus Center.
- Layman, Daniel. 2012. "Locke on Basic Income." *Basic Income Studies* 6 (2): 7. doi:10.1515/1932-0183.1217.
- Linsbichler, Alexander. 2021a. "Rationalities and Their Limits: Reconstructing Neurath's and Mises's Prerequisites in the Early Socialist Calculation Debates." *Research in the History of Economic Thought and Methodology* 39B: 95–128. doi:10.1108/S0743-41542021000039B008.
- Linsbichler, Alexander. 2021b. "Viennese Late Enlightenment and the Early Socialist Calculation Debates: Rationalities and Their Limits." *Center for the History of Political Economy at Duke University Working Paper Series 2021-16* 2021 (16): 0–75. doi:10.2139/ssrn.3904011.
- Linsbichler, Alexander. 2022. "Otto Neurath and Ludwig von Mises: Philosophy, Politics, and Economics in Viennese Late Enlightenment." *Erasmus Journal for Philosophy and Economics* 14 (2): 202–208. doi:10.23941/ejpe.v14i2.623.
- Linsbichler, Alexander. 2023. "Jan Tinbergen and the Rise of Technocracy." In *Wittgenstein and the Vienna Circle: After 100 Years*, edited by Friedrich Stadler, 597–604. Wien: Springer Nature. doi:10.1007/978-3-031-07789-0_19.
- Linsbichler, Alexander, and Ivan Ferreira da Cunha. 2023. "Otto Neurath's Scientific Utopianism Revisited – A Refined Model for Utopias in Thought Experiments." *Journal for General Philosophy of Science* 54: 233–258. doi:10.1007/s10838-022-09630-5.

- Lynkeus, Popper Josef. 1910. *Das Individuum und die Bewertung menschlicher Existenzen*. Dresden: Reissner.
- MacNeill, Timothy, and Amber Vibert. 2019. "Universal Basic Income and the Natural Environment: Theory and Policy." *Basic Income Studies* 14 (1): 20180026. doi:10.1515/bis-2018-0026.
- Martinez-Alier, Joan. 1987. *Ecological Economics: Energy, Environment and Society*. Oxford: Basil Blackwell.
- Menger, Anton. 1903. *Neue Staatslehre*. Jena: Gustav Fischer.
- Nemeth, Elisabeth. 2007. "Freeing up One's Point of View': Neurath's Machian Heritage Compared with Schumpeter's." In *Otto Neurath's Economics in Context*, edited by Elisabeth Nemeth, Stefan W. Schmitz and Thomas Uebel, 13–36. Wien: Springer.
- Nemeth, Elisabeth. 2013. "The Philosophy of the 'Other Austrian Economics.'" In *New Challenges to Philosophy of Science*, edited by Hanne Andersen, Dennis Dieks, Wenceslao J. Gonzalez, Thomas Uebel and Gregory Wheeler, 339–350. Dordrecht: Springer Netherlands.
- Nemeth, Elisabeth. 2021. "Gesellschaftliche Tatbestände sichtbar machen: Otto Neurath über den Gegenstand der Wirtschaftswissenschaft und seine Visualisierung." In *Die Konturen der Welt: Geschichte und Gegenwart visueller Bildung nach Otto Neurath*, edited by Gernot Waldner, 51–78. Vienna and Berlin: Mandelbaum.
- Neurath, Otto. 1919. "Die Utopie als gesellschaftstechnische Konstruktion." In *Durch die Kriegswirtschaft zur Naturalwirtschaft*, 228–231. München: Georg D. W. Callwey.
- Neurath, Paul. 1994. "Otto Neurath (1882-1945). Leben und Werk." In *Otto Neurath oder Die Einheit von Wissenschaft und Gesellschaft*, edited by Paul Neurath and Elisabeth Nemeth, 11–95. Wien: Böhlau.
- Neurath, Otto. (1911) 2021a. "Nationalökonomie und Wertlehre." In Vol. 1 of *Gesammelte ökonomische, soziologische und sozialpolitische Schriften*, edited by Rudolf Haller and Ulf Höfer, 470–519. Wien: LIT Verlag.
- Neurath, Otto. (1918) 2021b. "Josef Popper-Lynkeus, seine Bedeutung als Zeitgenosse." In Vol. 1 of *Gesammelte Philosophische und Methodologische Schriften*, edited by Rudolf Haller and Heiner Rutte, 131–136. Wien: LIT Verlag.
- Neurath, Otto. (1925) 2004. "Economic Plan and Calculation in Kind: On the Socialist Order of Life and the Human Beings of the future." In *Economic Writings: Selections 1904-1945*, edited by Thomas E. Uebel and Robert S. Cohen, 405–465. Dordrecht: Springer Netherlands.
- O'Neill, John. 1996. "Who Won the Socialist Calculation Debate?" *History of Political Thought* 17 (3): 431–442.
- O'Neill, John. 2004. "Ecological Economics and the Politics of Knowledge: the Debate between Hayek and Neurath." *Cambridge Journal of Economics* 28: 431–447. doi:10.1093/cje/beh016.
- Parijs, Philippe van. 1995. *Real freedom for all: What (If Anything) Can Justify Capitalism?* Oxford: Clarendon Press and Oxford University Press.
- Parijs, Philippe van, and Yannick Vanderborght. 2017. *Basic income: A Radical Proposal for a free society and a sane economy*. Cambridge, MA: Harvard University Press.
- Pfaff, Martin. (1972) 1986. "Garantiertes Einkommen oder garantierte Arbeit?" In *Das garantierte Grundeinkommen. Entwicklung und Perspektiven einer Forderung*, edited by Michael Opielka und Georg Vobruba, 28–35. Frankfurt am Main: Fischer.
- Plank, Robert. 1938. *Josef Popper-Lynkeus, der Gesellschaftsingenieur*. Wien: Saturn.
- Popper, Josef. (1878) 1903. *Das Recht zu leben und die Pflicht zu sterben: Socialphilosophische Betrachtungen, anknüpfend an die Bedeutung Voltaire's für die neuere Zeit*. 3rd ed. Dresden and Leipzig: Reissner.
- Popper, Karl. 1973. "Memories of Otto Neurath." In *Empiricism and Sociology*, edited by Marie Neurath and Robert S. Cohen, 51–56. Dordrecht: D. Reidel.
- Popper, Karl. 1945. 2013. *The Open Society and Its Enemies*. Princeton: Princeton University Press.
- Popper, Karl, and John Eccles. 1977. *The Self and Its Brain*. Berlin: Springer.

- Popper (Lynkeus), Josef. 1905a. *Fundament eines neuen Staatsrechts*. Dresden: Reissner.
- Popper (Lynkeus), Josef. 1905b. *Voltaire: Eine Charakteranalyse, in Verbindung mit Studien zur Ästhetik, Moral und Politik*. Dresden: Reissner.
- Popper-Lynkeus, Josef. 1912. *Die allgemeine Nährpflicht als Lösung der sozialen Frage: Eingehend bearbeitet und statistisch durchgerechnet; mit einem Nachweis der theoretischen und praktischen Wertlosigkeit der Wirtschaftslehre*. 1. Auflage. Dresden: Reissner.
- Popper-Lynkeus, Josef. 1916. *Selbstbiographie von Josef Popper-Lynkeus: mit dem Bildnis des Verfassers*. Leipzig: Unesma.
- Popper-Lynkeus, Josef. 1920. *Eine Auseinandersetzung mit dem Sozialismus und den Sozialisten*. Vienna: Verein "Allgemeine Nährpflicht."
- Popper-Lynkeus, Josef. 1923. *Die allgemeine Nährpflicht als Lösung der sozialen Frage. 2. Auflage im Auftrag des Verfassers nach seinem Tode herausgegeben von Margit Ornstein*. Wien: Rikola.
- Ranalli, Brent. 2019. "Henry David Thoreau on Basic Income: Genius Grants for the Masses." *Basic Income Studies* 14 (1): 20180017. doi:10.1515/bis-2018-0017.
- Raventós, Daniel. 2007. *Basic Income: The Material Conditions of Freedom*. London: Pluto Press.
- Sandner, Günther. 2014. *Otto Neurath: Eine politische Biographie*. Vienna: Paul Zsolnay.
- Schorsch. 1986. August. *Des Ingenieurs Josef Popper Allgemeine Nährpflicht als nötige Institution für die Computer-Gesellschaft*. Düsseldorf: Erb Verlag.
- Simmons, Dana. 2015. *Vital Minimum: Need, Science, and Politics in Modern France*. Chicago: University of Chicago Press.
- Sloman, Peter, Daniel Zamora Vargas, and Pedro Ramos Pinto, eds. 2021. *Universal Basic Income in Historical Perspective*. Cham, Switzerland: Palgrave Macmillan.
- Stadler, Friedrich. 2001. *The Vienna Circle: Studies in the Origins, Development, and Influence of Logical Empiricism*. New York: Springer.
- Standing, Guy. 2017. *Basic Income: And How We Can Make It Happen*. London: Penguin Random House.
- Tálos, Emmerich, 1989. ed *Materielle Grundsicherung: Popper-Lynkeus' Programm "Die allgemeine Nährpflicht als Lösung der sozialen Frage."* Wien: Edition S, Verlag der Österreichischen Staatsdruckerei.
- Turner, Bryan. 2023. *A Theory of Catastrophe*. Berlin and Boston: De Gruyter.
- Uebel, Thomas. 1995. "Otto Neurath's Idealist Inheritance: The Social and Economic Thought of Wilhelm Neurath." *Synthese* 103 (1): 87–121. doi:10.1007/BF01063719.
- Uebel, Thomas. 2000. *Vernunftkritik und Wissenschaft: Otto Neurath und der erste Wiener Kreis*. Wien: Springer.
- Uebel, Thomas. 2004. "Introduction: Neurath's Economics in Context." In *Economic Writings: Selections 1904-1945*, edited by Thomas E. Uebel and Robert S. Cohen, 1–108. Dordrecht: Springer, Netherlands.
- Uebel, Thomas. 2005. "Incommensurability, Ecology, and Planning: Neurath in the Socialist Calculation Debate, 1919-1928." *History of Political Economy* 37 (2): 309–342. doi:10.1215/00182702-37-2-309.
- Uebel, Thomas. 2007. "Otto Neurath as an Austrian Economist: Behind the Scenes of the Early Socialist Calculation Debate." In *Otto Neurath's Economics in Context*, edited by Elisabeth Nemeth, Stefan W. Schmitz and Thomas Uebel, 37–60. Wien: Springer.
- Uebel, Thomas. 2018. "Calculation in Kind and Substantive Rationality: Neurath, Weber, Kapp." *History of Political Economy* 50 (2): 289–320. doi:10.1215/00182702-6608590.
- Van Trier, W. 2021. "From 'Second Cheque Strategy' to 'Basic Income': Why Did André Gorz Change His Mind?." In *Universal Basic Income in Historical Perspective*, edited by Peter Sloman, Daniel Zamora Vargas, and Pedro Ramos Pinto, 181–204. Cham, Switzerland: Palgrave Macmillan.
- Vianna Franco, Marco P. 2020. "The Factual Nature of Resource Flow Accounting in the Calculation in Kind of the 'Other Austrian Economics.'" *OEconomia* 10 (10-3): 453–472. doi:10.4000/oconomia.9296.

- Vianna Franco, Marco P., and Antoine Missemmer. 2023. *A History of Ecological Economic Thought*. London and New York: Routledge.
- Wachtel, Henry I. 1955. *Security for All and Free Enterprise: A Summary of the Social Philosophy of Josef Popper-Lynkeus*. New York: Philosophical Library.
- Wulz, Monika. 2015. "Gedankenexperimente im ökonomischen Überschuss. Wissenschaft und Ökonomie bei Ernst Mach." *Berichte zur Wissenschaftsgeschichte* 38 (1): 59–76. doi:10.1002/bewi.201501703.
- Zamora Vargas, Daniel. 2020. "How Poverty Became a Violation of Human Rights: The Production of a New Political Subject, France and Belgium, 1964–88." *History of Political Economy* 52 (3): 499–517. doi:10.1215/00182702-8304823.
- Zwolinski, Matt. 2012. "Classical Liberalism and the Basic Income." *Basic Income Studies* 6 (2): 10. doi:10.1515/1932-0183.1221.