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## Viennese late enlightenment and the early socialist calculation debates: Rationalities and their limits

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VIENNESE LATE ENLIGHTENMENT  
AND THE EARLY SOCIALIST  
CALCULATION DEBATES:  
RATIONALITIES AND THEIR LIMITS

ALEXANDER LINSBICHLER

CHOPE WORKING PAPER No. 2021-16  
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CENTER FOR THE  
HISTORY OF POLITICAL ECONOMY  
AT DUKE UNIVERSITY

## **Viennese Late Enlightenment and the Early Socialist Calculation Debates: Rationalities and Their Limits**

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**Abstract:** Austrian economist Ludwig Mises's central role in the socialist calculation debates has been consensually acknowledged since the early 1920s. Yet, only recently, Nemeth, O'Neill, Uebel, and others have drawn particular attention to Mises's pertinent encounter with one of the most colorful characters of "Red Vienna": logical empiricist and "skeptical utopist" Otto Neurath. Despite several surprising agreements, Neurath and Mises certainly provide different answers to the questions "what is meant by rational economic theory" (Neurath) and whether "socialism is the abolition of rational economy" (Mises). However, previous accounts and evaluations of the exchange between Neurath and Mises suffer from attaching little regard to highlighting their idiosyncratic uses of the term "rational". The paper at hand reconstructs and critically compares the different conceptions of rationality defended by Neurath and Mises and suggests some consequent insights with respect to Viennese Late Enlightenment, contemporary rationality wars, the socialist calculation debates, and the foundations of welfare economics.

**Keywords:** rationality; enlightenment; socialist calculation debates; Otto Neurath; Ludwig Mises; Vienna Circle; Austrian School of Economics; knowledge; welfare economics

**JEL Codes:** B13, B14, B24, B25, B41, B51, B53, P16, P21, P51

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## 1 Introduction: Idiosyncratic Rationalities

Different theories of rationality have been a pivotal concern in philosophy and in economics for centuries.<sup>1</sup> Far from being of purely academic interest, discussions how one ought to form beliefs and act on them are thoroughly practical on an individual and on a social level. In recent years, some of these multifarious and occasionally heated controversies have even been labelled *rationality wars*.<sup>2</sup> Various proposals for nudging may serve as one illustrating example for topical interdisciplinary rationality research, in which economists, philosophers, psychologists, political theorists, sociologists, molecular biologists, historians, and mathematicians participate.

This paper reconstructs the idiosyncratic conceptions of rationality defended by logical empiricist Otto Neurath and Austrian economist Ludwig Mises. Our reconstructions will help to clarify some aspects of Neurath's and Mises's encounter in the socialist calculation debates, since "associated with Neurath's and Mises's different conceptions of political economy are different conceptions of rationality, and associated with these were very different methodological assumptions" (Uebel 2004a, p. 56). What is more, the paper is not of historical interest only. Key ideas of prominent contemporary figures of rationality research, like Nobel Memorial laureate Amartya Sen or ecological economist Joan Martinez-Alier, resort to Neurathian roots.<sup>3</sup> As for Mises,

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<sup>1</sup> For a systematization of many discussions related to rationality, see Spohn (2002). Panorama views of different conceptions of rationality can be found in Mauro, Miguens & Cardahlo (2013) and in Herfeld (2013, forthcoming a, forthcoming b), who demonstrates that "the interpretation of what is meant by 'rational action' has drastically changed throughout history" (Herfeld 2013, p. 4). Intricate discussions in analytic philosophy like the nature of the normativity of rationality (see e.g. Kiesewetter 2017) or the link between rationality and reasoning (see e.g. Broome 2013) are beyond the scope of this paper.

<sup>2</sup> For reconciling contributions to the rationality wars with a balanced portrayal of different positions, see e.g. Sturm (2012) and Rich (2016).

<sup>3</sup> See Sen (2002), Leßmann (2007), Nemeth (2019) and Martinez Alier (1987, p. 193-231), Uebel (2005), O'Neill & Uebel (2015), Franco (2019), respectively.

today his conception of rationality appears even more idiosyncratic than Neurath's. Yet, at least the Misesian branch of contemporary Neo-Austrian economics still adheres to Misesian rationality. In any case, Austrian economics certainly plays a significant role in the history of rationality research. Firstly, Mises interacted amicably with Weber and greatly influenced Robbins (see e.g. Robbins 1932, p. xiii-ix), who are perhaps the two most seminal scholars in the history of characterizing rationality. Secondly, one of the founders of game theory, Oskar Morgenstern, is usually characterized as an Austrian economist. He regularly participated in Mises's private seminar in Vienna. Moreover, via co-author John von Neumann, Morgenstern also had a connection to the Vienna Circle of which Neurath was the driving force and to the *Mathematisches Colloquium*. The latter was organized by Karl Menger, son of Carl Menger, and attended by logical empiricists and Austrian economists alike. Some attendees ended up employed by the Austrian Center for Business Cycle Research under the leadership of its director Morgenstern. Given the often underappreciated personal, institutional, and subject-matter connections between the Austrian School and Vienna Circle, it seems worthwhile to reconstruct and critically compare Neurath's and Mises's idiosyncratic conceptions of rationality.<sup>4</sup>

The structure of the paper is straightforward: In section 2, we contextualize Neurath and Mises as representatives of the two wings of Viennese Late Enlightenment (2.1) and as protagonists in the early socialist calculation debates (2.2). In section 3, we reconstruct Neurath's notion of rationality and how it is applied. In section 4, we

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<sup>4</sup> Other prominent non-standard approaches to rationality include a critical rationalist, non-justificationist perspective (see e.g. Agassi&Jarvie 1987, Miller 1994) and allowance for evolutionary factors (see e.g. Nozick 1993). Fellow logical empiricist Carnap was of course much more influential for contemporary rationality research in philosophy than Neurath (see e.g. Carus 2017).

reconstruct Mises's deliberations on rationality and detect a tension in them. One way to resolve this tension builds upon Neurath's, O'Neill's, and Salerno's reading of Mises but faces several interpretational problems (4.4). We propose a different interpretation and hint at its implications for the calculation debates (4.5). In section 5, we compare Neurath's and Mises's thoughts on rationality and ponder some interrelated implications with respect to Viennese Late Enlightenment (5.1, 5.2) and the socialist calculation debates (5.3, 5.4).

## 2 Contextualizing Otto Neurath and Ludwig Mises

### 2.1 Two Poles of Viennese Late Enlightenment

Neurath and Mises are two of the most multi-faceted Viennese public intellectuals of the interbellum period. Even contemporaries who knew Neurath in one of his roles often were not aware of his diverse fields of interest and activity. Research on Neurath has by and large been partitioned to his various subsequent roles: In history and philosophy of science, he is known as promotor of the Vienna Circle and the *International Encyclopedia of Unified Science*. His economic and political ideas and activities as head of the central planning office (*Zentralwirtschaftsamt*) in the two Bavarian Soviet Republics are investigated in history and political science. His pedagogical efforts and popular education projects such as the designing of museums and ISOTYPE are important to picture theorists and educational scientists; and his engagement in the Viennese settler movement, as a city planner and architect, attracts great interest as well. Even adding Neurath's excursions into logic<sup>5</sup> and literary history would probably leave the list incomplete.

Mises gained his reputation not only as an eminent economist but expanded his field of work to epistemology, methodology, history, sociology, and political theory. Mises exerted considerable influence within academia, not least via his many famous students and via the establishment, together with Friedrich Hayek in 1927, of the Austrian Institute for Conjuncture Research, which is today the Austrian Institute of Economic Research (WIFO). Furthermore, he aimed to inform and influence public

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<sup>5</sup> See Cat (2019) who shows how even Neurath's work in algebraic logic is connected to his economics; e.g., by Neurath's attention to matters of presentation as exemplified by his preference for tables over curves in both disciplines.



opinion in economic and political matters by giving public lectures<sup>6</sup>, publishing articles in newspapers, and advising as the chief economist of the Vienna Economic Chamber. In the 21<sup>st</sup> century, Mises's significance as a scientific scholar sometimes tends to be overshadowed (and sometimes distorted) by his status as a public reference point for internet memes and for political agitation.

Neurath and Mises not just engaged in similar topics in economics, philosophy, and politics in order to provide solutions to some of the pressing scientific and social problems of their time; on a few occasions their paths actually crossed before they both had to emigrate. They served as co-workers in the Austro-Hungarian Scientific Committee for War Economy during World War I, though with different degrees of commitment. It was Neurath's initiative that helped to establish the Committee in the first place; Mises (1916), on the other hand, published "subversive" arguments that in effect declared all national borders as economic nonsense. This sufficed to see Mises sent back to the Eastern front lines in 1916. Oft-cited is their attendance of Böhm-Bawerk's famous seminar which Huelsmann describes in his partisan manner: "*The members of the seminar would come to be known as either great economists or great Marxists.*" (2007, p. 145) It is almost Austrian folklore that the high-profile left and liberal economists and politicians more or less unanimously discussed capital theory and monetary theory in the seminar. Mises remembers:

"Böhm was a brilliant seminar leader. He considered himself more of a chairman than a teacher, and would enter into the debate on occasion. Unfortunately,

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<sup>6</sup> In the United States, "Mises emphasized that, as was common in Europe, the faculty of the school should give periodic lectures to the general public, so that sound economic education would not be confined to professional scholars. Unfortunately, plans for the school eventually fell through" (Rothbard 2002 [1988], p. 53). For Mises' influence in Vienna, see e.g. Höbelt (2018).

babblers sometimes abused the freedom to speak that was allowed participants. Especially disruptive was the nonsense that Otto Neurath asserted with fanatical force. The sharper wielding of a chairman's upper hand could have often proven beneficial, but Böhm wanted no part in this. His thinking was in line with that of Menger, who believed that in science everyone must be allowed to speak." (Mises 2009 [1940, 1978], p. 32)

Presumably, reactions were analogous the other way around when Mises presented his view of "The Logical Character of the Science of Human Action" (2002 [1933]) subsequent to the thoroughly empiricist *Third Unity of Science Conference* in Paris in 1937.

Leaving these anecdotes for a more systematic comparison, with some qualifications a confrontation of the methodological, epistemological, economic, and political positions explicated and defended by Neurath and Mises can be regarded as a specific variation of the classical *Methodenstreit* (see e.g. Mises 2003 [1967]; Stadler 2007, 2020; Uebel 2002).<sup>7</sup> At first glance, the positions of Neurath and Mises seem antithetical in all domains. The contrast in methodology and epistemology as it is often perceived is encapsulated by Milonakis & Fine: "Mises' method is perhaps the most anti-positivist and anti-empiricist approach to social science ever stated." (2009, p. 259) Disagreements in political questions between Mises's liberalism in the classic tradition and Neurath's democratic socialism are obvious. While a closer look at the philosophical, political, and economic positions maintained by Neurath and Mises might reveal more similarities than some polemics of Neo-Austrians and Neo-

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<sup>7</sup> The relevant dichotomies include: induction and deduction; description, norms, and policy decisions; the role of logic and language; unity and disunity of science; objectivity and relativism; rationality and polylogism; apriorism and empirism; liberalism in the classic tradition and democratic socialism; explanation, intuition, and understanding.

Positivists lead us to believe, one definite consensus is the common dedication to Viennese Late Enlightenment.

The specific cultural atmosphere of interwar Vienna and its staggering scientific and artistic output in general as well as Viennese Late Enlightenment in particular have been subject to numerous studies.<sup>8</sup> For the purpose of this paper, we need to settle for a few cursory remarks. Viennese Late Enlightenment can hardly be characterized as a targeted intellectual movement but rather as a heterogeneous conglomerate of various political societies, scientific and artistic seminar groups, institutions for workers' education, and coffeehouse circles. As a common denominator, the growth and dissemination of scientific knowledge and of a scientific, "rational" attitude were held to be beneficial for material and immaterial well-being, both on an individual and on a societal level.<sup>9</sup> Over and above the common motivation for popular education, many proponents of Viennese Late Enlightenment shared common opponents: Spann's intuitive universalism, Spengler's laws of historical development, Gottl-Ottilienfeld's *Gebildelehre*, other forms of essentialism, methodological collectivism, objective theories of value, ethical cognitivism, and psychologism in the philosophical and scientific spheres, as well as clericalism, conservatism, (Russian) communism, fascism, and National Socialism in the (sometimes life-threatening) political sphere.<sup>10</sup>

Neurath and Mises can be portrayed as two poles of Viennese Late Enlightenment. Although Neurath regularly struggled with mainstream Austro-

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<sup>8</sup> For Viennese Late Enlightenment, see e.g. Siegetsleitner (2014), Stadler (1981, 2007, 2015, p. 31-40), Uebel (1996, 1998, 2000, 2004b). For a "political biography" of Neurath in the context of Viennese Late Enlightenment, see Sandner (2014).

<sup>9</sup> The examples of Neurath and Mises make abundantly clear that "science" is not restricted to the natural sciences but includes the social sciences and humanities.

<sup>10</sup> For "Black Vienna", the reactionary and proto-fascist common opponents of Neurath and Mises, see e.g. Wasserman (2014). For a testimony to Neurath's vehement opposition to the Russian version of socialism, see e.g. Schütte-Lihotzky (1982, p. 42).

Marxism, he paradigmatically represents the more prominent, empiricist, left wing of Viennese Late Enlightenment, whereas Mises is one of the few exponents of the sometimes disregarded, aprioristic, liberal wing. Neurath and Mises ardently propagated their specific conception of what ought to be regarded as justified and interesting scientific knowledge because both Neurath and Mises were convinced that the contemplation and utilization of modern scientific knowledge by as many citizens as possible would increase well-being on a societal level. Dedication to spreading social scientific education in order to enable understanding, critique, and improvement of social circumstance runs like a golden thread through Neurath's entire life. The same concern and pedagogic attitude can be attested to Mises.

## ***2.2 The Early Socialist Calculation Debates***

The socialist calculation debates are a cluster of related economic, philosophical, and political discussions, mainly about different forms of ownership of the means of production.<sup>11</sup> Ultimately, the divisive question is: under which circumstances can and should the means of production be socialized? Disregarding more political doubts for the moment, socialization of the means of production raises intricate methodological

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<sup>11</sup> The many different accounts of the calculation debates not only differ in their assessment who has won the debates. Dividedness goes so far that, for instance, even within the Austrian School, there is no consensus about the content of Mises's main argument that started the whole debate. Some interpreters claim that Mises was solely concerned with a logical proof of the theoretical impossibility of socialism due to the lack of monetary calculation. According to these interpreters, Hayek's later arguments on the practicability of socialism are not only unrelated to Mises but moreover rely far too much on past prices and equilibrium considerations instead of entrepreneurial appraisal for the ascertainment of future prices. Other interpreters deny a major gap between Mises's and Hayek's contributions to the calculation debates and merely describe shifts of emphasis. For the heated tone of some of these internal Austrian debates, see e.g. Herbener (1996), Salerno (2012 [1990], 1993, 1994, 1996a), and Yeager (1994, 1996). Having hinted at some of the fundamental interpretational problems, Lavoie's seminal accounts of the history of the calculation debates (1985a, 1985b) explained and removed many misunderstandings and misconceptions. Lavoie triggered a renewed interest in the calculation debates which was propelled further by the comprehensive Boettke (2001a, 2001b).

and epistemological problems about the mental tools and the knowledge necessary for the central planners. Moreover, it is far from obvious how, on a meta-level, different social orders are to be evaluated and compared to each other.

A brief sketch of most overviews of the socialist calculation debates runs something like this: in *Economic Calculation in the Socialist Commonwealth* (Mises 2012 [1920]) and its elaboration *Socialism* (Mises 1951 [1922]), Mises challenges all plans for full socialization. Without private ownership of the means of production, hence without a market for the means of production, there are no meaningful money prices for them. Without a single unit like money or labor hours to which the value of all means of production can be related, the central planners lack the conceptual tools to decide on the efficiency of any combination of the means of production, i.e. to decide where to produce what in order to satisfy consumer preferences in an optimal way.<sup>12</sup> Authors like Polyani, Heimann, Lerner, Lange, Taylor, Cottrell, and Cockshott in principle agree with Mises regarding the necessity of meaningful prices in terms of a single common unit of comparison, but develop versions of market socialism or other schemes in order to find a common unit by design. Lange ironically proposes that a statue of Mises should be exhibited in the great hall of the Ministry of Socialization to honor his incentive for socialist theorizing. However, whether Mises's prime argument and the later support by Hayek and Robbins suffice to render socialism impossible, was evaluated differently throughout time and from scientific community to community.

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<sup>12</sup> Apparently, Mises assumes a state of disequilibrium for his argument. Neglect or denial of this typically Austrian approach is perhaps the primary reason why "Mises' challenge to collectivist economic planning is arguably among the most misunderstood statements in the history of economic theory" (Piano & Boettke 2018, p. 222).

Mises's central role in the disputes has been uncontroversial since the early 1920s. Although Neurath probably<sup>13</sup> triggered the initial spark, his contributions to the controversy usually have been treated in brief footnotes for several decades, if at all.<sup>14</sup> In the wake of a renewed general interest in Neurath as a philosopher and as an economist, O'Neill (1996, 1998) criticizes the received view of the socialist calculation debates as a controversy between the camps of Mises and of Lange. Mises and Lange agree on the necessity of a common unit in order to calculate and arrive at rational decisions of the central planners. An excessive focus on the received view distracts from a far more important prehistory.<sup>15</sup> Whatever the outcome of their encounter is, Mises and Lange are both wrong, argues O'Neill. The more interesting and more crucial point is Neurath's denial of their shared presuppositions. (O'Neill 1996)

Although the polemic diction of some of their writings tends to disguise their agreements, Neurath and Mises concur regarding the quintessential conclusion that in a socialist economy, no meaningful money prices for the means of production and no other single common unit for economic calculation exist.<sup>16</sup> Neurath however, unlike

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<sup>13</sup> Presumably, Neurath's writings, in particular *Durch die Kriegswirtschaft zur Naturalwirtschaft* (Neurath, 1919), made Mises reflect on socialism once more. We lack direct evidence, but Huerta de Soto (2010 [1992], p. 185 – 187) conjectures and Uebel (2008, p. 492-494) convincingly argues that it was Neurath, the "fanatic babbling" (Mises 2009 [1940, 1978], p. 32) from Böhm-Bawerk's seminar, with whom Mises had already been in conflict concerning the legal obligation of banks to redeem notes (Huelsmann 2007, p. 185 – 187), who prompted Mises to propose his "impossibility" argument in *Economic Calculation in the Socialist Commonwealth* (Mises 2012 [1920]). Although Mises had been criticizing socialism for its linkage to militarism before, his position had not been as radically anti-socialist as in his subsequent writings.

<sup>14</sup> The situation has improved since then. Publications on the relationship between Neurath and Mises, albeit almost exclusively restricted to the calculation debates, include Chaloupek 1990, 2007, Greenwood 2006, Nemeth 1999, 2005; Linsbichler 2015; O'Neill 1996, 1998, 1999; Turk 2018; Uebel 2005, 2007, 2008, 2018, 2019.

<sup>15</sup> Considering the intricate history of the various problems, arguments, interpretations, and counterarguments, we adopt and emphatically endorse O'Neill's suggestion to refer to the socialist calculation debates in plural.

<sup>16</sup> Neurath agrees with Mises that labor hours or labor vouchers are no remedy. Besides, Neurath and Mises also agree, in contrast to Bauer, Lenin, and Schumpeter, that it is vital to rigorously

Mises and Lange, emphatically embraces this “moneyless” state of affairs.<sup>17</sup> According to Neurath, the compelled switch to calculation in-kind and the abolition of markets for means of production are actually the two most important advantages of the new demand-oriented economic system that should replace allegedly inefficient, profit-oriented capitalism. In section 3.2, we will argue why this stance is in full accordance with Neurath’s conception of rationality.

Despite these surprising agreements between Neurath and Mises, the “skeptical utopist” (Umrath) and “the last knight of liberalism” (Huelsmann) certainly provide different answers to the questions “what is meant by rational economic theory”<sup>18</sup> (Neurath 1987 [1935], title) and whether “every step that takes us away from private ownership of the means of production and from the use of money also takes us away from rational economics” (Mises 1920, p. 64). However, previous accounts and evaluations of the exchange between Neurath and Mises suffer from attaching little regard to highlighting their often idiosyncratic and non-uniform use of the term “rational”. In fact, Neurath already submitted that insufficient awareness of the different conceptions linked with the same term “rationality” can hinder fruitful discussion:

[...] the terminology of political economy is poorly adapted [...]. This lack of clarity in the logical situation makes discussion difficult, for it is often unclear whether two researchers who make different assertions are talking about different

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distinguish between syndicalism and socialism. Neurath and Mises share major responsibility for initiating a shift of emphasis regarding problems discussed in economics and in the public sphere in the 1920s and 1930s, namely an emphasis on the (scientific) comparison of existing or imaginary economic systems.

<sup>17</sup> See e.g. Neurath (2004a [1925], p. 430-446) for the characterization of socialism as a “moneyless” social order without circulation of commodities and without profit and loss accounting. A discussion whether money and indirect exchange restricted to consumption goods are desirable and consistently possible in socialism is beyond the scope of this paper. In any case, Neurath does not advocate pure barter economy.

<sup>18</sup> The translation somewhat distorts the German title. *Was bedeutet rationale Wirtschaftsbetrachtung?* more adequately corresponds to “What is a rational way to consider (look upon) the economy?”.

things, or whether they want to talk about the same thing but are making mutually contradictory statements about it. This confusion is heightened by the fact that sociological theories and specifically theories of political economy are more or less closely connected with the social struggles of the day. (Neurath 1987 [1935], p. 67)

The quote above is implicitly directed at Mises and to the point. Unfortunately, Neurath forcefully motivates a clarification of the situation without contributing a lot to the task. The remainder of our paper aims at reconstructing and critically comparing the different conceptions of rationality that underlie Neurath's and Mises's arguments. Boettke (1998) and Lavoie (1985a) recognize a more general pattern of misunderstandings between Austrian economists and mainstream economists due to equivocations. We hope this paper slightly alleviates one instance of that pattern.



### 3 Neurath on Rationality

#### 3.1 *The Lost Wanderers: a Critique of Pseudorationalism*

Neurath created the new term “pseudorationalism” for a new conceptual antipode to rationalism. Whereas standard approaches aim to distinguish rational beliefs and actions from irrational beliefs and actions, Neurath (and Mises) aim for a problem shift. For sure, Neurath renounces outspoken irrationalism and self-aware mysticism and he encourages the organized application of (scientific) knowledge. However, the primary target of his criticism and the most relevant counterpart to rationalism is pseudorationalism. At the core of pseudorationalism, Neurath identifies uncritical exaggerations or overestimations of the reach of rationality, leading to overstated pretensions of rationalism.<sup>19</sup> According to Neurath, pseudorationalists are dangerous because they want to act rationally, and they falsely reassure themselves and others to be acting rationally.<sup>20</sup>

Critique of various manifestations of pseudorationalism is at the center of Neurath’s lifelong endeavors in pursuit of rationality. Much of his work in epistemology, social science, politics, architecture, and pedagogy engages in the conflict between pseudorationality and rationality. Surprisingly, Neurath provides only one largely systematic analysis of this dichotomy – “The Lost Wanderers of Descartes and the Auxiliary Motive” (“Die Verirrten des Cartesius und das Auxiliarmotiv”). Published as early as 1913, its ideas pervade many of Neurath’s later deliberations.

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<sup>19</sup> Relatedly, Cat, Chang, and Cartwright (1991) purport more general similarities between Neurath and postmodernism, to which Reisch (1997) reacts critically.

<sup>20</sup> Stöltzner (2000) and Nemeth (2007) illustrate the topicality of Neurath’s critique of pseudorationalism by exploring the threats of the ubiquitous ideals of pseudorationalism for democratic societies.

The (prototypically Neurathian) starting point of the argument in “The Lost Wanderers” is the finding that both thinking and acting necessarily rely on a provisional and incomplete basis of knowledge. Consequently, there are situations – a lot of them, according to Neurath – in which even after the most meticulous scrutiny, several different possibilities for a conclusion or action exist, all of which are of the same value from the point of view of the thinking and acting individual. Nevertheless, at least in the case of action, where staying inactive also qualifies as action, the individual must choose one of the alternatives. For that purpose, an auxiliary motive is employed, i.e. a principle “which has nothing to do with the concrete aims in question” (Neurath 1983 [1913], p. 4).

Neurath classifies four types of auxiliary motives, i.e. ways of dealing with decision-making on the basis of insufficient knowledge: instinct, authority, pseudorationalism, and a pure auxiliary motive. The pure form of an auxiliary motive is drawing lots. These four modes of behavior correspond to the idealized stages of the development of human civilization, which Neurath regularly delineates in later writings (see e.g. Neurath 1983 [1930]).<sup>21</sup>

- (1) Instinct: ages ago, in the days of “magical thinking” with little knowledge available, a deep trust in instinct might have served the valuable purpose of eliminating doubt and vacillation, so Neurath. But instinct must fail when it comes to decisions that are either complex or solely concerned with the expediency of means to achieve an end. (Neurath 1983 [1913], p. 5)

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<sup>21</sup> We refer to these stages as “idealized” in the sense that Neurath’s primary ambition with regard to these stages is not to give an account of actual historical development, let alone general laws of historical development in the manner of Spengler. Instead, Neurath constructs and evaluates ideal types of prevalent conducts in society in order to analyze the consequences of approximating one of them. His obvious upshot is the plea for adopting a scientific world conception.

Presumably, Neurath would have interpreted contemporary psychological findings on the effects of priming or research (including Mises's and Hayek's later work) on the cultural evolution of instinct and of intuitions as confirmation of his suspicion of instinct as a proxy where reasoning does not deliver a distinct conclusion.

- (2) Authority: Neurath explains the disposition to resort to an alleged authority by a feeling of discomfort brought about by doubt and responsibility. The types of authorities that serve as an auxiliary motive for important decisions are manifold. Neurath mentions oracles, omens, prophecies, democratic majority vote, and tradition as examples. High esteem for tradition, heritage, and frequently quite sophisticated sets of rules are characteristics of what Neurath refers to as the scholastic stage of human development. The overall highly progressive legacy of Neurath should not divert from his esteem for traditions and the scholastic age. It is the logical apparatus of scholasticism, combined with the empiricist outlook of the "magical age", which can result in a "logical empiricist" scientific world conception. In order to flourish, such a scientific world conception needs to be "connectable" (Richard Mises) to everyday language and to everyday traditions of laymen. Even the name "Vienna Circle" was suggested by Neurath as a nod to the traditional Viennese cultural, musical, and culinary amenities.

The polymath Neurath also joined Josef Frank in his partial defense of tradition in architecture. In this context, Neurath (1991 [1932]) also observes and welcomes that residents often use living space in a way that defies the architects' intentions. These remarks exemplify Neurath's insistence that not everything can be designed rationally. He advocates permanent heed for the residents'

(possibly changing) decisions, the fallibilism of all knowledge, and a reflexive aversion against pseudorationalism.<sup>22</sup>

- (3) Pseudorationalism: with the impact of superstition and tradition waning, with technology achieving miracle after miracle, and with science excelling promises of current and future knowledge, the modern, pseudorationalist era dawns. The indicator of pseudorationalism is the belief that rational insight provides a unique optimal solution to every problem and thus recourse to auxiliary motives is never necessary.

Pseudorationalists boast the commendable urge to employ empirical, formal, and creative means as far as possible to the point of self-deception or hypocrisy.

Pseudorationalism often arrives at conclusions and decisions using auxiliary motives without being aware or honest about it:<sup>23</sup>

The pseudorationalists always want to act from insight and are therefore grateful to anybody who is able to suggest to them that they had acted from insight. [...] The listeners are glad, so to speak, if they can make up their minds in favour of something with a good conscience; (Neurath 1983 [1913], p. 8)

- (4) Pure auxiliary motive: in comparison, Neurath maintains it is psychologically unpleasant to acknowledge the provisional and incomplete character of knowledge on which many decisions are necessarily based. For instance, actually delegating grave decisions of public interest to the purest auxiliary

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<sup>22</sup> While Neurath might be even less of a conservative than Hayek, he too recognizes the value of traditional rules as against modernist pseudorationalism.

<sup>23</sup> Again, contemporary findings about priming effects confirm Neurath's assertion. Fellow logical empiricist Philipp Frank's work on the influence of unrecognized philosophical assumption on scientists and more generally the project of rational reconstruction can be read as revealing hidden assumptions or auxiliary motives. For an example of uncovering an implicit assumption in the contemporary "rationality wars", see Infante, Lecuteux & Sugden (2016).

motive – chance – would cause moral outrage, as Neurath plausibly contends. Still, this is exactly what Neurath advises as the rational conduct of a proponent of a scientific world conception: if, after rigorous but still fallible scrutiny, it is impossible to discriminate between several conclusions or actions, one should admit this state of affairs and consciously employ the purest auxiliary motive – drawing lots or rolling dice.<sup>24</sup>

With the use of pure auxiliary motives as the limiting case of rational action, perhaps Neurath's ideal of rationalism can be characterized as reflexive. His deliberations on rationality provide a framework for excogitating potential or actual actions.<sup>25</sup> When considering or reconsidering actions, Neurath urges us to raise our awareness of the four types of auxiliary motives, of the provisional, fallible, and incomplete status of knowledge, and most importantly, of the limited reach of rationality: "Rationalism sees its chief insight in the clear recognition of the limits of actual insight." (Neurath 1983 [1913], p. 8) In contrast, pseudorationalism too often claims to be able to justify a unique optimal solution to a problem.

### ***3.2 Applying Neurathian Rationality***

Neurath remained faithful to his more systematic differentiation between pseudorationalism and rationalism in "The Lost Wanderers" throughout many of his diverse efforts. When confronted with a single theory, method, explanatory factor, or policy proposal, Neurath would usually query the status of the claim to uniqueness and

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<sup>24</sup> For an example from Neurath's economic writings, in which he explicitly refers to taking recourse to drawing lots as an "auxiliary motive" in a situation in which two courses of action cannot be ordered with regard to their economic efficiency see Neurath (2004 [1917], p. 324).

<sup>25</sup> Neurath's categorization of motives might even be applicable to meta-discussions on different forms of rationality.

try to find, investigate, and compare neglected options.<sup>26</sup> Applied to epistemology and methodology, he criticized Popper's claim regarding the exclusiveness of falsificationism as a form of pseudorationalism.<sup>27</sup> His physicalism is staunchly anti-reductionist and his unity of science embraces a plurality of scientific methods, disciplines, and approaches. ISOTYPE, a method of pictorial representation developed by Neurath, often draws attention to hitherto overlooked relations and effects.<sup>28</sup> In his scientific utopianism, Neurath encourages us to drop the belief that the status quo is optimal and to explore alternatives. More fundamentally, he advocates a re-broadening of the conceptual underpinnings of social science, particularly of economics, in order to re-gain scientific grasp of neglected phenomena (see Nemeth 2019, Linsbichler & Cunha 2021).

Neurathian rationality manifests itself in his writings in the context of the socialist calculation debates as well (see e.g. 2004 [1917], 2004a [1925], 2004b [1925], 2004 [1935]). Apart from purported specific shortcomings of monetary calculation, the very idea of reducing all valuations to one common denominator, be it money, working hours, or anything else, amounts to gross pseudorationalism, according to Neurath. As a straightforward application of his principled take of rationality, Neurath proposes to evaluate the rationality of a decision and the welfare of a society ("conditions of life") along many different dimensions. The term "dimensions" is justified since Neurath, in his elaborated schemes for calculation in kind and "universal statistics", consciously

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<sup>26</sup> In a similar spirit, Karl Menger, otherwise quite critical of Neurath, promoted "pluralistic solutions looked upon as schemes that give life to as many ideas as possible" (Menger 1934, p. 107).

<sup>27</sup> See Neurath (1983 [1935]). For a critical rationalist defense of falsificationism that evades many pitfalls of pseudorationalism, see Miller (1994).

<sup>28</sup> Similarly, drawing attention to hitherto overlooked relations and effects is the one central message propagated again and again by publicist Henry Hazlitt, who identifies Mises as his primary influence.

abstains from weighing any of these different dimensions and reducing them to a summarizing index.<sup>29</sup> Consider the following analogon, in which Neurath compares the modernity of different countries:

[i]f a country is more ‘modern’ in one field, it is not necessarily ‘modern’ in all the others. A general or average ‘index of modernity’ conceals certain peculiarities which are important not only in technologically appraising single countries but in appraising the whole process of modernization (Neurath 1939, p. 59).

Although criticized by Neurath and Austrian economists alike, gross national product still plays a predominant role as a single criterion in comparisons of welfare. However, debates on how to compare social orders have been gaining currency again for some decades.<sup>30</sup> In particular, the notions of well-being, welfare, and flourishing have been disputed with regards to their definitions and to the methods of their assessment. Oftentimes, Sen is named as the pioneer of irreducibly multidimensional notions of well-being.<sup>31</sup> One of the few subdisciplines that expressly demand irreducibly multidimensional evaluation of different scenarios is ecological economics.<sup>32</sup>

Perhaps Neurath underestimates the feasibility of gathering and overseeing all the data on a manifold of dimensions. In any case, he boldly claims that monetary

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<sup>29</sup> Neurath’s extensive use of “statistics” (in modern terminology we would rather speak of “data”) in his deliberations on well-being in different social systems as well as in his critiques of too narrow conceptions of “well-being” in political economy can be traced back to one of his main influences, Josef Popper-Lynkeus (see e.g. Popper-Lynkeus 1912).

<sup>30</sup> Neurath’s warnings of considering averages or aggregates (see e.g. Neurath 1987 [1935], p. 99 for a critique of “the price level”) often resemble Austrian economists’ methodological scruples. The use of GDP or another measure could be defended against Neurath and Mises on pragmatic grounds and by showing that many other criteria correlate with GDP. Irreducibly multidimensional measures of well-being as advocated by Neurath play a crucial role in poverty research. See also Nemeth (2019, p. 122-125).

<sup>31</sup> For similarities between Neurath and Sen, see e.g. (Leßmann 2007, Nemeth 2019).

<sup>32</sup> For Neurath’s influence on ecological economics, see Martinez-Alier (1987, p. 193-231), Uebel (2005), O’Neill & Uebel (2015), and Franco (2019).

calculation is even unnecessary, on top of being insufficient, for a rational and flourishing economic system.<sup>33</sup> As for the contradicting claims that monetary calculation is necessary or sufficient or both, different ones of which are ascribed to Mises by his interpreters, we contend that a clarification of the claims would be helpful for an improved understanding of the intricate socialist calculation debates and of the foundations of welfare economics. We will return to these claims in section 5.4.

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<sup>33</sup> See Nemeth (1999, 2005) and Uebel (2005, 2007, 2008, 2018) for reconstructions and sympathetic evaluations of Neurath's argument.



## 4 Mises on Rationality

### 4.1 Social Rationalism

There are three main areas of thought in which Mises concerns himself with “rationality”: (a) rationality of individual action, (b) rationality of action without private ownership of means of production, and (c) rationality of social institutions. Starting in section 4.2, we will discuss (a) and (b) as the primary themes in Mises’s writings on rationality and we will only briefly touch upon the more peripheral (c) below.

Mises has been described as a “social rationalist” by Salerno (2012 [1990], 1996b). To the extent to which this characterization is appropriate, Mises views social institutions primarily as the product of conscious efforts by individuals to remove uneasiness. According to social rationalists, humans intentionally design not only laws and contracts but also informal social institutions such as family, language, traditions, money, division of labor, and the moral code.<sup>34</sup>

Note that rigorous social rationalism conflicts with key features of other Austrian economists.<sup>35</sup> Both Carl Menger and Hayek champion a specific form of methodological individualism which asks for the explanation of social institutions as the *unintended* consequence of intentional individual actions. Menger exemplified such explanations for money and Hayek’s studies on spontaneous order preclude rigorous

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<sup>34</sup> Compare a socially rationalist point which Neurath makes about prerequisites of continued social cooperation: a more “conscious” approach to peaceful interaction and societal decision-making is required once “traditional uniformity of behaviour” is declining. (Neurath 1983 [1913], p. 10) For instance, Neurath urges to *consciously* choose democracy. His main argument for detecting majority votes and abiding by them seems to be their function as an authoritative auxiliary motive which helps avoid gridlocks and violent conflicts as modern societies get more and more heterogenous. Mises, who used similarly consequentialist arguments to defend democracy, was a classmate and lifelong friend of the eminent theoretician of democracy Kelsen. Surprisingly, Kelsen justifies democracy in other ways.

<sup>35</sup> Having said that, Wieser exhibits distinct social rationalist traits. See e.g. Wieser (1927 [1914], p. 149-166).

social rationalism. While spontaneous social orders are human products, they are not human designs as rigorous social rationalists would have it.<sup>36</sup>

Notwithstanding Salerno's characterization of Mises as a social rationalist, Mises often does investigate *unintended* consequences of certain policies and, like Menger (1985 [1883], p. 128-59), repudiates organic conceptions of social institutions. Anyhow, we mention Mises's thoughts on rationality of social institutions only for the sake of completeness. His deliberations on the rationality of individual action are less ambiguous. Since they are pivotal for Mises's economic theory and his political liberalism, we devote the entire next section to his notion of rational individual action.

#### ***4.2 Rationality of Individual Action***

Most theories of action in economics and philosophy roughly coincide regarding their definition of action as purposeful behavior of individuals. Action is certainly restricted to individuals for Mises: "Only the individual thinks. Only the individual reasons. Only the individual acts." (Mises 1951 [1922], p. 113) One peculiarity of Austrian economics in Mises's tradition as opposed to standard approaches in modern economics is that action is not to be identified with constrained maximization. Rather, as Kirzner (1976 [1960], 1988), Lavoie (1985a), and Klein (1992) have comprehensively documented, the socialist calculation debates triggered a process of Austrian economists' "improved self-understanding" (Kirzner 1988, p. 3) regarding differences to neoclassical economics. Since the late 1930s at the latest, Hayek, Mises, Schumpeter, and others have spelled out more consciously how their conceptions of the function of prices, of the market as a discovery process, and ultimately of how to do economics

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<sup>36</sup> See (Hayek 1948 [1946]; 1998 [1973], p. 35-54; Linsbichler 2017, p. 17-21; Menger 2004 [1871], p. 257-85; Menger 1985 [1883], p. 128-59).

differ from neoclassical approaches. What arguably underlies all these differences is a different conception of action. For Mises, action is not simply a choice between given possibilities. Instead, the framing of the situation, including a realization of what the possibilities are, is itself part of the action:

For Mises the analytical unit is not the act of choice within a given ends-means framework. For Mises the unit of analysis is human action, a concept that includes the identification of the very ends-means framework within which efficient decision making must be exercised. [...] For Mises, the verb ‘to act’ includes not only effective exploitation of all perceived net opportunities for gain, but also the discovery of those opportunities. (Kirzner 2001, p. 86–87)

Almost all theories of rationality in economics and philosophy demarcate rational action as a proper subcategory of action. According to these theories, actions which fail to meet certain criteria are classified as irrational. Examples of allegedly irrational action include falling victim to a Dutch bookmaker and smoking. While the bettor in the example (possibly<sup>37</sup>) violates the *formal* criterion of having transitive preferences and coherent beliefs, the smoker may be regarded as irrational if rationality imposes *substantive* standards like “healthy lifestyle” on preferences.<sup>38</sup>

As against such judgments, present-day Austrian economists follow Mises, who advocates a conception of rationality in which “[a]ction is, by definition, always rational” (2003a [1933], p. 36) and “the statement, ‘He acts irrationally’, is meaningless, because it is not compatible with the concept of action” (ibid., p. 35).<sup>39</sup>

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<sup>37</sup> The aim of the “victim” of the Dutch book may not be to earn money, but to enjoy the experience of betting, to subsidize the bookmaker, or to refute certain descriptive theories about human behavior.

<sup>38</sup> Note that the use of “formal” and “substantive” used here differs from the use of these terms by Weber. For Weber’s position between Neurath and Mises, see e.g. Uebel (2019).

<sup>39</sup> See Rizzo (2015).

Note that Mises not only abstains from substantive requirements of rationality, which is common among economists. On top of that, he also denies the possibility of directly identifying violations of formal criteria since any such identification would have to rest on the assumption of specific and stable goals. The implicit epistemological justification for Mises's position could be reconstructed as follows: "The action is always in accord with the want because we can infer the want only from the action." (Mises 2003a [1933], p. 86) Given such a demonstrated preference approach<sup>40</sup>, one cannot ascertain actions guided by intransitive preferences: For instance, a proponent of the research program of Austrian economics in Mises's tradition would refrain from a judgment of intransitivity of preferences and hence irrationality. Instead, she would take rationality for granted and suggest an inquiry into changes in the subjective knowledge of the actor or a reassessment of the assumed ends of the actor.

Mises abstains from denouncing any choice of ends as irrational. Even "lunatics and neurotics" (Mises 1990 [1944], p. 22) apply means to (unusual) ends – hence act rationally. Similarly, while Mises does not raise principled objections to Hume's or Weber's study of "affective" action, he denies a tension between affection and (Misesian) rationality. Instead, certain strong emotions may temporarily change one's goals. Once one pursues these goals, this is a rational and affective action, even though the actor may perhaps repent her choice of goals afterwards. Over and above Mises's caution when judging ends, he applies the same humility to the choice of means:

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<sup>40</sup> For the demonstrated preference approach of Austrian economics, see (Rothbard 1997 [1956]; Herbener 1997). For the purpose of this paper, we can neglect purported conceptual differences to the similar, yet more prominent revealed preference approach as made famous by Samuelson. However, Austrian economists tend to be more reluctant to assume stability of preferences over time.

“Instead of saying that irrationality plays a role in action, one should accustom oneself to saying merely: There are people who aim at different aims that I aim at, and people who employ different means from those I would employ in their situation.” (Mises 2003a [1933], p. 37)

Mises (2003a [1933], p. 36) motivates this approach to rationality with the insight that any appraisal whether certain means are feasible must be relative to a state of knowledge.<sup>41</sup> A look back at the development of knowledge over the past centuries demonstrates how almost all actions would have to be considered irrational from a hypothetical standpoint of “perfect knowledge”, as Mises (1998 [1949], p. 20) illustrates with the example of progress in medical treatment. Moreover, any assessment of the feasibility of means employed by an actor presupposes we know the goal she strives for. For instance, Mises criticizes government interference with the price structure for making conditions “worse, not better, from the [asserted; my clarification] point of view of the government and those backing its interference”. (1998 [1949], p. 758 – 760) When confronted with an actor who apparently deploys inferior means, Mises maintains that this

can be accounted for in only two possible ways: either the “rational” means were not known to the actor, or he did not employ them because he wished to attain still other ends – perhaps very foolish ones from the point of view of the observer. In neither of these two cases is one justified in speaking of “irrational” action. (Mises 2003a [1933], p. 36)<sup>42</sup>

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<sup>41</sup> Rizzo (2017, p. 5-7) proposes a more fine-grained analysis of four layers on which appraisals of rationality in Austrian economics and in general are relative to something. Actions are more or less “rational” relative to (1) given beliefs, (2) the choice of these beliefs given any standard, (3) the choice of these beliefs given the best available standard, and (4) the meta-choice for picking the “best” standard.

<sup>42</sup> Or, as Hempel (1961-62, p. 16), puts it: „belief attributions and goal attributions are epistemically interdependent“. Rationality attributions are interdependent too.

Notably, while any action is by definition rational, Mises does not preclude critical assessment and improvement of means to a given goal or of the compatibility of several goals. On the contrary, once the available knowledge and certain goals are specified<sup>43</sup>, and only when knowledge and goals are specified<sup>44</sup>, the means can and “must always be subject to rational examination” (Mises 2003a [1933], p. 100). We will heavily draw on this requirement in section 4.5. Additional knowledge can even help an actor to recognize new means she was not aware of or she might recognize why certain means are actually inapt. Indeed, many of Mises’s (and Neurath’s) scientific writings and public activities disseminate social scientific knowledge in order to improve individual decisions as well as the basis for democratic collective decisions. This attitude of Viennese Late Enlightenment would be futile without Mises’s conviction that it is possible to improve one’s choice of means and eventuality also the compatibility of one’s ends by acquiring new knowledge.

Mises’s conception of rationality is crucial not only to his scientific theorizing and his educational activities. Moreover, his reluctance to pass definitive judgments on the conduct of others is a cornerstone of a general epistemological humbleness of Austrian economics.<sup>45</sup> What is more, without a normative separation between “rational” and “irrational” action or “normal” and “unnatural” behavior (Mises 2003a [1933], p.

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<sup>43</sup> Such a specification of the goals might include certain, e.g. moral, boundaries on the admissible means.

<sup>44</sup> Kirzner (1976 [1960], p. 167-172) portrays the crux of Mises’s conception of rationality as the necessity of “a program”, i.e. of specified goals, as a yardstick in order to evaluate any action.

<sup>45</sup> We claim that humbleness is inherent to Austrian epistemology and methodology. Examples of this include the thin conception of rationality, wariness as to social scientific predictions, consideration for the incompleteness and fallibility of the knowledge of both actors and economists, as well as skepticism regarding the arbitrary malleability of social institutions. However, we certainly do not claim that all Austrian economists always act and write in accordance with the humbleness inherent to their epistemology.

96), political enforcement of “normal” behavior loses alleged philosophical or scientific justifications. Thus, Mises’s liberalism in the classical tradition<sup>46</sup> can be seen as a political emanation of his modest conception of rationality – a conception which acknowledges limits of knowledge and which refrains from passing judgment about evaluations of fellow human beings:

“A free man must be able to endure it when his fellow men act and live otherwise than he considers proper. He must free himself from the habit, just as soon as something does not please him, of calling for the police.” (Mises 1985 [1927, 1962], p. 55)

#### ***4.3 Irrationality of Socialism – a Contradiction?***

The rationality of all actions by definition is pivotal for Mises. Hence it would be surprising and troubling if he deviated from this conception in the context of the calculation debates as the following quotes seem to imply: “Socialism is the abolition of rational economy.” (2012 [1920], p. 23) “Every step that takes us away from private ownership of the means of production and from the use of money also takes us away from rational economics.” (2012 [1920], p. 64) Mises links his claim even closer to the rationality of individual action, when he writes about “[e]conomic calculation as exerted by a capitalist corporation and *without which all rationality of action and economizing and all technical computations would be unfeasible*” (Mises 2003b [1933], p. 170; my translation and emphasis).

In Neurath’s case, a straightforward application of his “philosophical” conception of rationality to the calculation debates matches neatly. By contrast, Mises

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<sup>46</sup> *Liberalism in the classical tradition* (1985 [1927, 1962]) is the title of the translated English version of his *Liberalismus* (1927). In the Anglo-American context, Mises’s use of the term “liberalism” was even more idiosyncratic and in need of qualification than in Europe.

seems to incur a strong tension, if not a contradiction, once we compare his “philosophical” writings on rational human action with his use of the term “rational” in the calculation debates. If action is by definition rational, how can the lack of market prices forestall the rationality of actions? Why could social planners not just aim at any goals using any means and still be rational according to Mises’s definition? Is Mises imposing formal or substantive requirements on rational action after all when it comes to the calculation debates? In sections 4.4 and 4.5, we will outline and discuss two solutions to this problem of coherency in the interpretation of Mises’s writings. Solution (I) assumes that in the context of the calculation debates, Mises tacitly refers to economic action and economic rationality instead of action and rationality in general. Solution (II) stresses that Mises’s definition of action requires not only employing means to achieve ends but also the possibility of tentatively examining the suitability of the means. If no such examination is possible, then by definition we have no action – and therefore no rational action. We will advocate solution (II), presented in section 4.5, as more compatible with positions Mises defends elsewhere and as more fruitful for contemporary discussions. Before we reconstruct and reject solution (I) in section 4.4, two preliminary clarifications are expedient: one regarding the nature of our ensuing reconstructions and one regarding Mises’s rejection of cardinal utility calculus.

Firstly, we do not insist that Mises himself resolved the tension in his conception of rationality, let alone that he would have resolved it along the lines of our preferred solution (II). We do not aim at a psychological study of Mises’s thoughts, which might have been contradictory after all.<sup>47</sup> Instead, this paper aims at reconstructing a conception of rationality which is significantly supported by Mises’s writings but more

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<sup>47</sup> See Scheall (2017) and Linsbichler (2021a) for perhaps even stronger tensions in Mises’s epistemology.



importantly provides a coherent basis for Misesian reasoning about individual human action as well as about the calculation debates.

Relatedly, we will reference some authors as apparently advocating solution (I). Admittedly, Neurath, O'Neill, Uebel, and Salerno are not primarily interested in adjusting tensions in Mises's conception of rationality. Although we may transfer their quotes from otherwise motivated contexts to slightly different contexts, in their engagement with Mises, his interpreters nevertheless have to presuppose a certain interpretation of his seemingly conflicting claims about rationality. In any case, solution (I) to the problematic tension in Mises's position is a *prima facie* tenable response and hence worth considering.

Secondly, Mises, most Austrian economists<sup>48</sup>, and incidentally also Neurath, reject the notion of a cardinal utility calculus. From his early writings on monetary theory onwards, Mises opposes "the spurious idea that values are measurable and are really measured in the conduct of economic transactions" (Mises 1998 [1949], p. 205).<sup>49</sup> In the absence of a utility calculus, he consequently resorts to money as the, albeit imperfect, common unit for economic calculations. Against Wieser and others, Mises maintains: "Money calculations have their limits. Money is neither a yardstick of value nor of prices. Money does not measure value." (Mises 1951 [1922], p. 115)<sup>50</sup> On the

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<sup>48</sup> A possible exception is Wieser, who aims at an identification of social value and money price but is well aware of and discusses a fundamental problem: such an identification rests, among other things, on the false assumption of equal purchasing power of all market participants. (Wieser 1893 [1889]) Wieser was heavily criticized by Mises (1998 [1949], p. 205) for a tendency to equate objective money prices with subjective value. According to Mises, Wieser "never really grasped the core of subjectivism" (Mises 2009 [1940, 1978], p. 28). Unfortunately, Neurath specifically mentions Wieser as the representative of Austrian value theory when he concludes: "We must understand, for instance, that the Austrian theory of value with its many subtle insights is in the final analysis a 'money theory without money', for its concepts are derived from money concepts, even though its statements do not mention money any more." (Neurath 2004a [1925], p. 432)

<sup>49</sup> See e.g. Mises (1998 [1949], p. 97-98, p. 200-206, p. 220).

<sup>50</sup> See also Mises (2012 [1920], p. 11) and footnote 48.

one hand, Mises acknowledges and emphasizes imperfections of money prices as a proxy for value, such as the fact that money prices can at best reflect social value modulo the purchasing power of the market participants. On the other hand, his arguments in the calculation debates stress the importance of meaningful money prices because they, albeit indirectly, do reflect the preferences of market participants. Given Mises's own concessions, we might surmise that some of his unconditional propositions in the calculation debates ought to be qualified more carefully.

The contention that economic calculation cannot be utility calculation but is and must be monetary calculation is a hallmark of Mises's approach. Therefore, we will assume this for all interpretations and reconstructions of Mises's position in the remainder.

#### ***4.4 Solution (I): Economic Rationality as Algorithmic Monetary Maximization?***

One immediate reply to the tension between Mises's general conception of rationality of action and his respective remarks in the calculation debates would be available. Perhaps Mises implicitly changes his conception of rationality when he changes the subject matter. Perhaps Mises's arguments in the calculation debates implicitly refer to a narrower concept of strictly *economic*<sup>51</sup> action to which a narrower *economic* rationality applies. Following this interpretation, an action relevant for the calculation debates is only rational if it aims at maximizing monetary profit. Should we interpret Mises as employing two separate notions of rationality – one for human action in general and one

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<sup>51</sup> We disregard another instance of Mises's idiosyncratic nomenclature: he sometimes but not always explicitly identifies "economic action" with "rational action" and with "action", contrasting it with "purely economic action" for an allegedly narrower concept (see e.g. Mises 1951 [1922], p. 124-127).

for economic action relevant to the calculation debates – in order to mitigate the apparent tension?

Indeed, some authors have interpreted Mises as advocating (algorithmic) monetary maximization as rationality.<sup>52</sup> One presumable example would be Neurath. In his critiques of capitalist economy, he portrays monetary maximization as a crucial characteristic of the market process: “The goal of individual enterprises in the capitalist economy is the maximum gain of money and because of this money calculation makes sense [for them<sup>53</sup>], namely, to establish whether the maximum has been reached.” (Neurath 2004a [1925], p. 471) Monetary maximization as a mark of capitalism is a recurring motif in Neurath’s writings, specifically in the calculation debates. According to Neurath, proponents of capitalism like Mises endorse monetary maximization as the normative yardstick for evaluating action:<sup>54</sup>

In the capitalist order everybody is concerned to use their money so as to live most successfully. [...] In order to see whether one has managed well or badly, one determines what one possesses in terms of money and monetary values at the beginning and at the end of the year. The difference is the gain or the loss made that year. From the standpoint of the economic order of capitalism it is utterly reasonable to make this calculation. Those who at the end of the year possess less money than at the start have managed their economic affairs badly in the capitalist order in any case, for, put aside, the sum of money, thought of as a quantity of gold, say, would have remained constant. (Neurath 2004b [1925], p. 466-467)

More recently, O’Neill ascribes to Mises a view that all rational decisions of sufficient

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<sup>52</sup> See e.g. Uebel (2018).

<sup>53</sup> In the original German version, Neurath is explicit that money calculation makes sense *for individual enterprises*. We reinserted “for them” (“für diese”), which was omitted in the published English translation.

<sup>54</sup> Relatedly, Neurath (1987 [1935], p. 93-94) accuses the perfect foresight of homo oeconomicus of constituting an instance of pseudorationality. If this criticism is implicitly targeted at Mises, Neurath likely misfires.

complexity require economic calculation, which given the absence of a cardinal utility calculus and given Mises's other presuppositions amounts to monetary calculation:

For Mises any rational decision, beyond the most simple, requires the commensurability of different values. There needs to be a single common unit which reduces the choice between different options to a matter of calculation. (O'Neill 1998, p. 115)

Mises is assuming that every choice is implicitly an exercise in economic evaluation. (O'Neill 1998, p. 117)

Unlike Neurath and O'Neill, Salerno is generally highly sympathetic towards Mises. Nonetheless, in the context of the calculation debates, at times Salerno too comes very close to identifying Misesian rationality with successful monetary calculation aiming at the "goal of maximizing profit (and ultimately, utility)" (Salerno 1993, p. 120).

While these interpretations trivially solve the problem of apparent inconsistency of Misesian rationality, they face at least three problems. Firstly, as a descriptive claim it is dubious at best whether individuals in the market solely aim at maximizing their monetary profit, let alone succeed in it. Mises clearly recognized the existence of non-monetary motives in human action. If we were to attribute to him "that every choice is implicitly an exercise in economic calculation" (O'Neill 1998, p. 117), we would incur an interpretational tension since Mises and many Austrian economists strive for realistic assumptions.

Secondly and on a related but more fundamental note, Mises explicates praxeology as a general theory of human action; thereby he wants to overcome separations of economic and non-economic action. According to Mises, in any delineation of a genuinely economic sphere of action, "[a]ccidental facts of the history of science and conventions play a role" (1998 [1949], p. 235). Specifically, in the

context of evaluation, which is central to the calculation debates, Mises insists that the “economic” and the “non-economic” are inextricably intertwined.<sup>55</sup>

In choosing between bread and honour, faith and wealth, love and money, we submit both alternatives to one test. It is, therefore, illegitimate to regard the ‘economic’ as a definite sphere of human action which can be sharply delimited from other spheres of action. (Mises 1951 [1922], p. 124)

Accordingly, Mises considers the extension of Austrian economics from a purportedly genuinely economic sphere of action to all human action as one of his main achievements. After all, economics “must not restrict its investigations to those modes of action which in mundane speech are called ‘economic’ actions but must deal also with actions which are in a loose manner of speech called ‘uneconomic’.” (Mises 1998 [1949], p. 235)<sup>56</sup> Congruously, O’Neill (1998) seems to interpret Misesian rationality as monetary maximization tout court (except for extremely simple situations), not only in a questionable sphere of economic action. Thereby O’Neill of course bites the bullet of altogether separating Mises’s elaborations on individual action as by definition rational from Mises’s statements about “economic” rationality in the calculation debates.

Thirdly, some individuals who defy monetary maximization as a normative ideal seem to enjoy Mises’s highest esteem. He repeatedly mentions the ideal type of a genius

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<sup>55</sup> Firstly, acting individuals do compare monetary and non-monetary goals. Secondly, even if a goal G were purely monetary or purely non-monetary, the costs, i.e. the foregone opportunities one incurs in striving at that goal, can be both monetary and non-monetary. Instead of striving at goal G, the actor could for instance have met a friend or perform wage labor. Notwithstanding Mises’s insight that the economic and the non-economic are inextricable intertwined, he certainly acknowledges that for many scientifically useful models with specific purposes, or for many “imaginary constructions” as Mises would have it, an auxiliary assumption could be made that all individuals solely attempt to maximize their monetary profit.

<sup>56</sup> Incidentally, Neurath rejects a strict separation between economic and non-economic action, too (Neurath 1987 [1935], p. 77).

who labors out of an inner drive and is not recognized by his contemporaries, but promotes art, science, or social relations for the better of mankind. For instance, a “painter who does not compromise with the taste of the buying public and, disdaining all unpleasant consequences, lets himself be guided solely by his own ideals is an artist, a creative genius” (Mises 1998 [1949], p. 241). However, creative geniuses apply means to attain their ends, such as satisfying their inner drive; in other words, they act rationally. Moreover, according to Mises, geniuses like Galileo are also enormously beneficial to mankind in the long run – although they do not maximize their individual monetary profit.<sup>57</sup> As we can see, for Mises, monetary maximization is not necessarily desirable, neither on an individual level nor on a social level. This is hard to explain if we interpret Mises as maintaining that every rational action or even every action at all is or should be an exercise in monetary calculation.

Mises denies that an economic sphere can be sharply delineated, and he identifies instances of rationality without monetary maximization that are even socially beneficial. Hence, we conclude that the first attempt to find a coherent interpretation of Misesian rationality is unconvincing. In section 4.5, we will encounter Mises’s emphasis on further limitations to monetary calculation and propose a more compatible interpretation of his remarks on rational action in a socialist economy.

#### ***4.5 Solution (II): Monetary Calculation as a Restricted, Yet Crucial Mental Tool***

According to our interpretation of Misesian rationality, two functions of monetary calculation sometimes tend to become blurred. On the one hand, monetary calculation plays a minor role in the evaluation of goals. On the other hand, in sufficiently complex

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<sup>57</sup> See e.g. Mises (1951 [1922], p. 168; 1998 [1949], p. 195; 2003a [1933], p. 75).

situations such as those discussed in the socialist calculation debates, monetary calculation is a crucial mental tool for the choice and discovery of means to achieve a specifically given goal. We will discuss these two different functions in turn.

In section 4.4, we indicated that human action involves the evaluation of economic and non-economic goals. Strictly speaking, the only economic goal is profit in terms of monetary maximization.<sup>58</sup> However, we may also extend the label ‘economic’ to everything which is directly purchasable by money. Thus, the wish for readily available goods and services is an economic goal, but arguably a desire for friendship, personality development, or global peace is a non-economic goal. As expounded above, a choice of goals can never be assessed as irrational in Mises’s sense. While he puts no economic or ethically cognitivist restrictions on the rationality of goals, limited reflections and arguments are applicable. For instance, scientific knowledge might deny the possibility of attaining certain goals such as flying a perpetuum mobile helicopter. Scientific, logical, or other knowledge also informs estimations whether some potential goals are compatible with each other. A trivial example is that you cannot successfully aim at being in place  $p_1$  at time  $t$  and being in place  $p_2$  at time  $t$  if  $p_1$  and  $p_2$  are different and not extremely close.

Oftentimes, deciding for goals A, B, C involves relinquishing other goals X, Y, Z. In such decisions between incompatible goals or in the prioritization of goals, money prices and monetary calculation can sometimes be a useful aid: “If we know precisely how much we have to pay for beauty, health, honour, pride, and the like, nothing need hinder us from giving them due consideration. [...] If honour cannot be eaten, eating can

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<sup>58</sup> Hicks (1986, p. 104) claims that for the case of a merchant, we do not even have to assume or propose the profit motive, since it is “in the nature of the business that is being done” by the merchant.

at least be foregone for honour.” (Mises, 1951 [1922], p. 116) Even so, many goals do not have price tags. Quite generally, only a small part of the costs of a goal can be transferred into the objective metric of monetary calculation because (to Austrians) costs are subjective. If costs like foregone friendship, lost honor, and polluted air cannot be related to meaningful money prices, is not the role of monetary calculation negligible after all? Indeed, monetary calculation can play only a restricted role in the evaluation of goals: “Money calculations have their limits. Money is neither a yardstick of value nor of prices. Money does not measure value.” (Mises 1951 [1922], p. 115)<sup>59</sup> Contrary to O’Neill’s interpretation of Mises, not every choice is implicitly an exercise in economic evaluation.

The primary field of application for monetary calculation according to Mises is not the choice of ends, but the choice and discovery of means to achieve given ends. In order to specify such a given end, all relevant subjective factors have to be built into the description of the end. So specified, the given end might for instance not simply be to produce 500 copies of product P as cheaply as possible, but to do so without violating one’s moral postulates M1 and M2, without breaking the law, and with a happy workforce. In many cases, there will be myriads of different possibilities how to combine the available means of production. Without the crucial mental tool of monetary calculation, a producer would be entirely disoriented as to how and where to produce: “Calculating costs is a mental tool of action, the purposive design to make the best of the available means for an improvement of future conditions.” (Mises 1998 [1949], p. 346-347) Contrary to one of the claims of Boettke and Leeson (2005), Mises’s

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<sup>59</sup> See also Mises (2012 [1920], p. 11).



calculation argument does not render socialism logically impossible.<sup>60</sup> Logically, the acting individual (or the central planning board) could just pick any of the possible ways to produce and could even be extremely lucky and pick a highly efficient combination of means each time. What Mises demonstrates, apart from several arguments for the (empirical) inferiority of welfare under socialism, is that without meaningful money prices, no rational evaluation of the choice of means would be possible. In the absence of monetary calculation, actors lack any mental tool to evaluate their choice of means for a properly specified end.

This is how we can make sense of Mises's claims that on the one hand all action is by definition rational, but on the other hand, without meaningful market prices for all kinds of means of production including labor "all rationality of action and economizing and all technical computations would be unfeasible" (Mises 2003b [1933], p. 170; my translation). Mises defines action as an actual choice of means to achieve ends in which the choice of means can and "must always be subject to rational examination" (2003a [1933], p. 100). According to the proposed interpretation of Mises, picking just any combination of means at random and lacking a mental tool to evaluate the eventuating means does not qualify as action, let alone as rational action (and besides is seldom efficient). Therefore, in non-trivial situations, market prices provide indispensable knowledge for (rational) action:

But then we have the spectacle of a socialist economic order floundering in the ocean of possible and conceivable economic combinations without the compass of economic calculation. Thus in the socialist commonwealth every economic change becomes an undertaking *whose success can be neither appraised in advance nor*

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<sup>60</sup> In this respect, our interpretation of Mises is closer to Caplan (2004) than to Salerno (2012 [1990]) and to Boettke and Leeson (2005).

*later retrospectively determined. There is only groping in the dark.* Socialism is the abolition of rational economy. (Mises 2012 [1920], p. 23; my emphasis)

According to our interpretation of Mises, he considers monetary calculation a necessary mental tool in non-trivial situations. Note however that monetary calculation does not uniquely determine rational action. First and foremost, the choice and specification of ends is and should be guided by other motives, according to Mises. Secondly, contrary to Uebel's interpretation (2018), even if a goal is exactly specified and monetary calculation for the choice of means thrives, the determination of means at given (past) money prices can be called "an algorithm, an automatic decision procedure" (ibid., p. 299) with at least three strong reservations only: (i) Creativity and changes in (scientific) knowledge can expand the set of possible combinations of means. (ii) The order in which to calculate the costs for the potentially countless combinations of means needs to be determined. (iii) Future market prices enter the calculations and future prices require entrepreneurial speculation. The estimates for those future prices are obtained by appraisal, for which Mises forecloses the existence of an algorithm.<sup>61</sup>

In a sense, Mises's solution for the problem of rational action is incomplete. We usually cannot ascertain one action as the optimal solution to a problem – not even if a goal is specified and the mental tool of economic calculation is available. At least in this respect, not only Neurath's conception of rationality but also Mises's is innocent of excesses of pseudorationalism.

A final remark is in order. We might concede Mises's argument but still argue that Mises unduly exaggerates the importance of one particular mental tool: monetary calculation based on meaningful market prices. We might follow Mises

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<sup>61</sup> For heated debates on the function of appraisal, see footnote 11.

terminologically in not calling complicated proceedings lacking this mental tool “action” or “rational action”. Yet, the main concern of the calculation debates is not terminology but purported effects for societal welfare. We will return to Mises’s failure to provide viable estimations of such effects in section 5.

Considering the possibility of only negligible welfare effects, many Austrian economists would try to vindicate their insistence on the necessity of monetary prices by indicating an argument along the following lines: Note that market prices are a mental tool for human *action*, not only for the narrower situation of choice between given alternatives. Consequently, monetary calculation is not only a mental tool for a choice between certain combinations of means of production, but potentially triggers the discovery of creative, hitherto unrecognized combinations. This discovery process and the innovation induced by the use of the mental tool of monetary calculation are most significant with respect to a nuanced interpretation of the socialist calculation debates.<sup>62</sup> To Mises and Austrian economists, markets are worthy not because the equilibrium (let alone something close to equilibrium) is an efficient state of affairs as neoclassical economists have it, but due to the coordination of partial, decentralized information in disequilibrium.

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<sup>62</sup> See e.g. Lavoie (1985a), Kirzner (1988), and Horwitz (1996).

## 5 More than Obvious Resemblances and Compatibilities

### 5.1 *Cautionary Enlightenment: the Limits of Rationality*

Viennese Late Enlightenment propelled the advancement of science into more and more fields of life. The various activities in popular education often aimed at more than transfer of scientific knowledge. Ultimately, the adoption of a more scientific attitude by the general public was thought to increase harmony and welfare. In this respect, some manifestations of Viennese Late Enlightenment are to some extent guilty of invoking reason and rationality as a panacea for all political, social, and economic problems. (Stadler 1981)

In contrast, a strong case can be made for a primarily cautionary or “negative conception of enlightenment” (Francis 1985, p. 5) of some Viennese scholars who “viewed enlightenment chiefly as an activity preventing the formation of false theoretical constructs” (ibid., p. 6): reason has a huge potential, but it is not bound to prevail. If and how to influence the future can be rationally discussed, but the future is not determined to be brighter. Other cautionary or “negative” aspects of Viennese Late Enlightenment can be found in the character of many of the scientific and philosophical accomplishments. Gödel proved limits of provability by finitary means, thereby shaking the foundations of mathematics; Wittgenstein carved out the limits of language, thereby challenging the presuppositions of communication and intersubjectivity; and Freud explored the limits of consciousness, thereby repudiating an overly reason-guided conception of humanity.

In a resembingly cautionary spirit of negative enlightenment, Neurath and Mises are concerned with the limits of rationality. Firstly, both authors agree that rationality cannot provide the “right” goals for action, thereby questioning overblown notions of substantive rationality. Secondly, in accordance with Viennese Late

Enlightenment, Neurath and Mises consider an increase in general well-being as a primary goal of their endeavors. Once this vague silhouette of a goal is to be explicated, all the problems of opaque preferences, measuring utility, interpersonal utility comparison, and aggregation of preferences surface. When trying to analyze and overcome such problems, Neurath attached severe restrictions and premonitions to heuristic solutions.<sup>63</sup> For instance, rationality cannot yield one optimal way to aggregate preferences. Momentously, Neurath underlines that there is always an element of discretionary decision-making involved. Similarly, Mises's rather thoroughgoing subjectivism is conducive to his restrictions and premonitions on the measurement, comparison, and aggregation of utilities. The extent of Mises's subjectivism has even been exceeded by some present-day Austrian economists.<sup>64</sup> For Neurath and Mises, the potential reach of rationality in pinpointing one "right" meaning of "general welfare" is narrow. Thirdly, Neurath and Mises, albeit with a different emphasis, underline limits of rationality in determining the best means for achieving given goals. Both Neurath and Mises stress that the relevant knowledge is fallible, preliminary, and often incomplete. Additionally, Neurath accompanies rationalism with empiricism and maintains the need for pure auxiliary motives (see section 2). Mises is particularly skeptical with regards to quantitative forecasting in the social sciences, thereby limiting the possible knowledge about efficient use of means to achieve given goals. To sum up, Mises and Neurath are proponents of a cautionary or "negative" enlightenment; they concur that "[r]ationalism

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<sup>63</sup> See e.g. *The Problem of the Pleasure Maximum* (Neurath 1973 [1912]), Neurath 1987 [1935], or Tinbergen's (1936) review of Neurath's "What is meant by rational economic theory?" (1987 [1935]). For Mises's similar, yet less comprehensively articulated concerns about finding objectively optimal solutions for aggregated pleasure, see e.g. Mises (2002 [1935], p. 301).

<sup>64</sup> See e.g. Stringham (2010).

sees its chief insight in the clear recognition of the limits of actual insight” (Neurath 1983 [1913], p. 8).

O’Neill & Uebel (2004, 2008), Carus (2007), and others have argued that Neurath’s “reflexive epistemology” (Zolo 1989) immunizes the Vienna Circle from many (sometimes tendentious) accusations of a naive form of enlightenment that ends up in positivistic apologetics of “the given”. On top of that, this paper aims to underline critique of pseudorationalism as further gradual difference between Neurath and most proponents of (naive?) French Enlightenment, arguably with d’Alembert as an exception: the cautionary and partly negative character of Viennese Late Enlightenment and especially Neurath’s warnings against overestimations of rationality. While he might occasionally indeed have overestimated the simplicity and feasibility of calculation in kind and of universal statistics, Neurath would have renounced pseudorationalistic excesses of French Enlightenment like the following in most resolute terms:

“Thence arises in the administration of a very extended society a certain complexity [...]; but at bottom the whole affair is one of simple calculation, susceptible of the most exact order and regular operation” (Buonarroti 1836 [1828], p. 156).

[Once the means of production are socialized and all citizens are enlightened by proper education,] “reasonable propositions encounter no opposition, and there prevails throughout the body politic unity of interest, of will, and of action. [...] the multiplicity and opposition of interests would be annihilated, and the art of government so simplified, as to be brought within the capacity of anybody and everybody.” (ibid., p. 166-169)

“The science of government [...] is reduced [...] to a simple calculation scarcely beyond the capacity of an ordinary shopman.” (ibid., p. 176)

In contrast to Buonarroti’s high hopes, Neurath’s calculation in kind neither allows for nor aims at algorithmic determination of an optimal solution but “only” aids

deliberation by providing and presenting complex information for a decision (see Uebel 2018, p. 299-300). In further contradistinction to Buonarroti's vision of unanimity, Neurath's insists that "[d]emocratic education accepts from the beginning that there must be differences of opinion based on commonly known facts" (1996 [1945], p. 251). In the light of section 4, it should be needless to say that Mises like Neurath would react in most critical terms to Buonarroti. For Mises, monetary calculation or any other mental tool can inform decisions, but not algorithmically replace them.<sup>65</sup>

Mises concurs with Neurath regarding attempts to calculate the one correct imperative what to do. Both scholars would presumably judge Buonarroti as well as naive applications of cost-benefit-analysis as an entirely hopeless and dangerously misguided hubris; in Neurath's terms: pseudorationality. More generally speaking, at least in their bright moments, Austrian economics (as well as Logical Empiricism) displays pronounced humility as a guiding principle towards scientific knowledge and its application – without however giving up the emancipatory, educational goals of Viennese Late Enlightenment.<sup>66</sup>

Following Neurath and Mises, we have amassed numerous limitations of rationality as well several hints at the theoretical and political dangers of overestimating rationality. However, for the avoidance of doubt let it be clear that as representatives of Viennese Late Enlightenment, both authors defend and promote their (humble) versions of rationality, scientific knowledge, and reason. The kind of rationalism Neurath and

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<sup>65</sup> While logical empiricists and their interpreters tend to emphasize continuities to French Enlightenment, proponents of the Austrian School including Mises have often been more critical about aspects of French predecessors of Viennese Late Enlightenment. See e.g. Boettke (2018) for Hayek's roots in Scottish rather than French enlightenment.

<sup>66</sup> See e.g. Dekker (2016, 2019). Modern calls to uphold and cultivate humble versions of Austrian epistemology can be found in Scheall's "methodological liberalism" (2015) and in Linsbichler's conventionalist justification of the a priori in Austrian economics (2017, 2021a).

Mises are averse to (without always being beyond overstepping the line themselves) is pointedly portrayed by Hayek: “There seems to me to exist a sort of rationalism which, by not recognizing limits of the powers of individual reason, in fact tends to make human reason a less effective instrument than it could be“ (2014 [1964], p. 41).

## ***5.2 Enlightening Knowledge for Whom? Individual Rationality and Social Rationality***

We argue that Neurath’s and Mises’s conceptions of rationality are compatible with their educational efforts in the spirit of Viennese Late Enlightenment, i.e. agents do not have full information and additional information or knowledge<sup>67</sup> can indeed help them to recognize new worthwhile goals or new efficient means and can foster rational discussion about compatibility of goals, costs of goals, appropriateness of means, or efficiency of means. One sort of knowledge is conceptual knowledge as in the form of mental tools. Different variants of calculation in kind, of universal statistics, of scientific utopias as well as sophisticated methods for the presentation of scientific knowledge are among the mental tools developed and refined by Neurath. Monetary calculation has been around long before Mises of course, but he accentuates that capitalistic economic calculation constitutes a refinement of the deliberations which guide action (Mises 1940, p. 221) and that “[m]onetary calculation is a mental tool of action” (Mises 1940, p. 219; our translation).

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<sup>67</sup> For different conceptions of information and of knowledge respectively, see e.g. Klein et. al. (2005), Mirowski (2006), Klein (2012, p. 144-156)) and the (albeit in other respects less conclusive) Mirowski & Nik-Khah (2017).



Neurath and Mises emphasize that decisions and ultimately well-being can be improved by learning new knowledge.<sup>68</sup> Consequently, and in accordance with his notion of rationality (albeit not in accordance with common portrayals of Mises's political position), at least the early Mises (1902, p. 46-68) can be interpreted as endorsing state policies to inform peasants about legal matters and even state intervention in contractual relationships in cases where one party is uninformed or illiterate.

On the level of economic theory and economic models, Neurath appropriately rejects the assumption of complete information (1987 [1935], p. 93-94) just like a typical Austrian economist. The latter's interest in human action instead of choice, i.e. consideration for the subjective framing of the situation by the individual, aptly reflects the potential for enlightenment as well.<sup>69</sup>

On a more practical level, Neurath and Mises attempted to spread social scientific and other knowledge in order to promote improved decisions and ultimately increase well-being. We suggest that these efforts can be adequately discussed in contemporary terms of nudging. Very diverse techniques and measures operate under the label "nudging". For our purposes, we will employ Sugden's (2013) distinction between "welfarist" and "contractarian" approaches to nudging. From the contractarian perspective, enlightening knowledge is presented to a group of individuals (with the permitted limiting case of one individual) and has the form: "*It is in the interests of*

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<sup>68</sup> Yet, given the strict standards of demonstrated preference for the comparison between two different social states, Neo-Austrian economics faces severe obstacles in substantiating the claim that more information is beneficial (see e.g. Gordon 1993, Herbener 1997).

<sup>69</sup> Today, regard for incomplete and asymmetric information and for framing effects is by no means restricted to the Austrian School of economics. The potential for mutually profitable cooperation between Austrian economics and behavioral economics has attracted some attention in recent years (see e.g. Cevolani 2011, Frantz & Leeson 2013).

*each of you separately that all of you together agree to do x.*” In contrast, from the more conventional welfarist perspective, new relevant knowledge is addressed to a (hypothetical) social planner, whose objective is to maximize the overall well-being of a group or society and has the form: *“It is not necessarily in the interest of every group member, but in the interest of the whole group or society (adequately defined), if y is done.”*<sup>70</sup> Note that it need not be specified who actually does y and that – in contrast to the contractarian approach – typically those who do y are not identical with those affected by y. The (hypothetical) social planner is not herself a part of society but takes a disinterested “view from nowhere”. Besides, in order to fulfil her maximizing task, the social planner also must be assumed to be impartially benevolent, neutral, vested with extensive political and physical powers, almost omniscient, and she must not restrain her activities of optimal preference satisfaction in favor of more popular or strategical ones which would aim to secure the position of social planner for the future. If any of these conditions is violated, overall beneficial effects of enlightening knowledge are diminished or even spurious (see Sugden 2013).

Keeping in mind Neurath’s reservations against the possibility of “maximizing” social well-being and that – as an epistemologist – Neurath vehemently rejected any

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<sup>70</sup> The aim to “maximize” or “optimize” social well-being presupposes a notion of social well-being capable of being “maximized”. Especially Neurath (1973 [1912]), but also Mises, was highly skeptical of the feasibility of a “total pleasure of a human group”, let alone a “maximum pleasure of a human group” (Neurath 1973 [1912], p. 114). Since “we have not succeeded in calculating pleasure sums of groups of persons under all circumstances, nor even to state how such a calculation is to proceed, the principle of maximum happiness, as our critique has shown, can never be the basis of a moral or legal system or of a whole order of life” (ibid., p. 119), Neurath infers critically that a maximizer of total pleasure would have to “fall back on the feelings of a single being, whether this be himself, a lawgiver or a god” (ibid., p. 120) in order to decide for a social system. Cautioning against pseudorationalism, Neurath concludes: “Perhaps struggle will decide which view about the best order of life shall be victorious; perhaps preference will be given to one order out of those in question, and the choice may be made with the help of an inadequate metaphysical theory or in some other way; tossing coins would be much more honest.” (ibid., p. 122)

ideas of a “view from nowhere” as presupposed by the welfarist view, we will differentiate the intended addressees of the knowledge Neurath and Mises promote and disseminate. Is Neurathian and Misesean “proto-welfare-economics”<sup>71</sup> directed towards acting individuals, potential contractual partners, voters in a democracy, or towards a benevolent social planner – keeping in mind that Neurath actively held the latter position in the Bavarian Soviet Republics?

Sugden’s distinction is helpful because the intended addressees of Neurathian or Misesean enlightening knowledge correspond to two separate levels of analysis. Neurath and Mises often try to distinguish these levels in their own writings, but on occasion seem to be misinterpreted by each other and by later annotators. On the one hand, corresponding to contractarianism, we have the level of individual actors or individual firms analyzing how to (subjectively<sup>72</sup>) better their situation within the present economic system. On the other hand, corresponding to welfarism, there is a level on which different economic systems or social orders are analyzed, compared, evaluated, and ranked. Such a comparison could juxtapose radically different economic systems, like capitalism and socialism, or evaluate more piecemeal suggestions for a particular policy or a particular allocation of resources. Such an analysis on a social level is concerned with potential changes of the rules and conditions of the framework in which individual actors conduct their analyses on the individual level. To which of these two levels of analysis are Neurath’s and Mises’s notions of rationality applicable?

In section 5.3, we will argue that the primary domain of Neurath’s “welfarist” rationality is analysis on the social level. Only a (hypothetical) social planner is in the

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<sup>71</sup> Hamlin (1992) and Sugden (1992) discuss to what extent and in which form “Austrian welfare economics” is possible at all – considering that Mises and most other Austrian economists are highly skeptical of social welfare functions and of neutral “views from nowhere”.

<sup>72</sup> The preferences of individual actors might of course include what they consider as improving society.

position to choose between different economic systems. While we accentuate advantages of the adamantly democratic character of Neurath's socialism, democracy does not solve and possibly aggravates a lacuna in (Neurath's) welfarism: how can we safeguard that new enlightening knowledge regarding analysis on the social level is efficacious, i.e. leads to increased social well-being?

In section 5.4, we argue that Mises's "contractarian" rationality is intended to address the individual level of analysis exclusively. In fact, Mises fails to explicate workable evaluative standards for the comparison of different economic systems. This theoretical lacuna regarding analysis on the social level compromises his conclusions in the calculation debates.

### ***5.3 Welfarism and the View from Nowhere ("Neurath's Problem")***

Neurath mentions in passing that individual firms in capitalism use monetary calculation as a "socio-technical expedient" ["gesellschaftstechnisches Hilfsmittel"] (e.g. Neurath 1987 [1935], p. 68). As for calculation in kind, in some passages Neurath suggests its use by individuals or by individual firms, albeit with restricted benefit.<sup>73</sup> However, he is only casually interested in the individual level of analysis. Neurath's enthusiasm is most commonly devoted to the system level. His Vienna Circle colleague Zilsel even trenchantly compared "comrade Neurath" to "a traveler in an airplane 3000 meters" above the jungle whose indications are hardly helpful for the social scientist "fighting for his path through the jungle thicket" (Zilsel 1932, p. 93-94; my translation).

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<sup>73</sup> "Calculation in kind can be applied not only to the total economy but also to each work establishment, if only to make it possible to compare their 'ways of working'." (Neurath 2004a [1925], p. 426) In any case, calculation in kind can certainly serve as a conceptual tool, comparable to contemporary "common good balance sheets (Gemeinwohlbilanzen)", if an individual or an individual firm wants to assess consequences of potential actions.

The primary place for calculation in kind and Neurathian rationality is the comparison of social orders. For such comparisons, it does not matter whether the analyzed orders themselves are capitalist market economies, i.e. individuals in it use monetary calculation as a socio-technical expedient, or socialist economies in kind, i.e. a central planning board uses calculation in kind. (Neurath 1987 [1935], p. 69) If the means of production are socialized as advocated by Neurath in word and deed, many decisions on the level of the individual or the individual firm naturally become obsolete. Ideally, calculation in kind is utilized to develop an economic plan, which predetermines (with some leeway) what every production unit must do for the common good:

In the capitalist economy every individual enterprise has its money calculation and profit or loss. In the socialist society it is only possible to estimate whether an economy as a whole of a certain structure is to be preferred to another. In a socialist economy the productivities of an engine factory and an agricultural enterprise cannot be compared, as they can be, by means of the balance sheet, under capitalism. Whether one should expand an engine factory or an agricultural enterprise only follows from what total plan is preferred. The distribution of the productive forces follows only from the economic plan, never from the comparison of different individual enterprises; it could be necessary to expand the technologically substandard agricultural enterprise while a first-class engine factory must be closed. [...] *The place of money calculation in individual enterprises under capitalism is taken by calculation in kind, with its estimation of utility, of the entire economy under socialism.* Marx never misunderstood this fact, he never spoke of calculation with a single unit in the socialist economy, nor did Engels. (Neurath 2004b [1925], p. 471-472; my emphasis)

The tension between the individual level of analysis, predominantly regarded as the domain of monetary calculation, and the social level of analysis, predominantly regarded as the domain of calculation in kind, is drastically illustrated by Neurath:

“Dead people do not figure as negative entries in the capitalist profit calculation!”

(2004b [1925], p. 468) According to Neurath, monetary calculation creates incentives for individual enterprises which countermines social welfare. Moreover, he contends that relevant comparisons between individual firms are indeed impossible under socialism, but that capitalism does not fare better. Rather, monetary calculation under capitalism falsely creates the impression of allowing relevant comparisons:

In the socialist order the economic efficiency of a single factory cannot be deduced from the accounts of the factory alone. This was also impossible in the capitalist order, but then the profitability of a factory was confused with its economic efficiency, because the question of how the operation of a factory may improve the totality of conditions of life of a society was not raised at all. (Neurath 2004a [1925], p. 426)

Since there is almost no room left for an individual or an individual firm in determining what is produced where and how, it is clear that Neurath pursues a “welfarist” approach:

“To summarise. The theory of the socialist economy knows only one economic actor, society, who organises production and distributes the conditions of life according to socialist principles, on the basis of an economic plan, without using profit and loss accounting, without circulation of money – be it metal or labour money – without using a common unit of calculation at all.” (Neurath 2004a [1925], p. 447)

The addressee of enlightening knowledge in the welfarist approach is not an individual or an individual firm aiming to improve its conduct within an economic system, but the (hypothetical) social planner who designs this very economic system. Therefore Sugden’s (2013) analysis of the questionable presuppositions of the welfarist approach applies. Does new enlightening knowledge improve social well-being? Not necessarily. Many beneficial welfare effects of applying Neurathian rationality and enlightening

knowledge in Neurath's democratic socialism rest on the assumption of an impartially benevolent, neutral, almost omniscient social planner who is vested with extensive political and physical powers and enjoys a "view from nowhere".

Neurath always remained mindful of many of the detrimental ramifications for individual liberty which economic planning could bring about, in his later years increasingly so. For instance, he urged to consider limits to spheres of state influence, even in a democratic state. (Neurath 1996 [1945], p. 249-250) Neider (1977, p. 41) goes so far as to say that "Neurath died as a liberal." In Neurath's further defense, his critical attitude towards expert-run technocracy and his democratic conviction deserve to be underlined. He championed socialization "not only for, but also by the society" (Neurath 2004 [1920], p. 383). Thus, the addressee of enlightening knowledge is not a (hypothetical) benevolent despot, but each voter. Neurath's task as the head of the central planning office (*Zentralwirtschaftsamts*) in Munich as he described it, was not a political but a purely technical one. He would propose different economic plans and describe their predicted consequences for the conditions of life, using the tools of calculation in kind and universal statistics. The decision which plan to adopt, however, would rest with the voters or their democratically elected representatives. After all, "comprehensive socialism aims at direct rule by the people over the economy – not only as a means for the realization of a socialist society, but also as an end in itself, as an expression of human dignity" (Neurath 2004 [1920], p. 383).

Even considering Neurath's sincere democratic conviction and disregarding the potential corruption of those in power to implement the economic plan, the epistemological problem of the welfarist approach could even be aggravated by democracy. Democratic socialism requires not only one despotic social planner, but in fact a considerable portion of the voters to assume the disinterested "view from

nowhere” (which the epistemologist Neurath rejects). Moreover, a considerable portion of voters is required to be impartially benevolent, neutral, almost omniscient, and must not vote strategically. All these conditions are violated to some degree. Hence, it remains dubious to what extent enlightening knowledge improves welfare in Neurath’s democratic socialism. This problem is of course not exclusive to Neurath but applies to welfarism in general. Cautionary conceptions of rationality help to elucidate the challenges of constructing a framework of political institutions which allow welfarist enlightening knowledge to become efficacious and improve social well-being.

#### ***5.4 Contractarianism and the Lack of Evaluative Standards (“Mises’s Problem”)***

In contrast to Neurath, Mises is almost exclusively concerned with the individual level of analysis.<sup>74</sup> Monetary calculation is a mental tool to improve actions of an individual or of an individual firm. As most tools, monetary calculation can be amended by other tools. As we have argued above, Mises has no reservations against taking into account non-monetary factors. Misesian rationality is even compatible with individuals employing a sort of limited calculation in kind. A choice between just two given options can oftentimes, contrary to the interpretation of Mises sketched in section 4.4, even be made ad hoc:

It is true, of course, as Neurath declares, that one can compare two concrete subgroups of different kinds of goods with each other without having the need for money and can designate that one is more valuable and the other is less valuable

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<sup>74</sup> Yeager (1982), mindful of Mises’s work, contends that the methodological individualism of the Austrian School does not reject the system level viewpoint per se and that in monetary theory analysis of the interplay between individual level and system level is possible and can be most illuminating.



[subjectively; my clarification]. That has never been denied, ... (Mises 2002 [1928], p. 368)

In any case, new enlightening knowledge in the “contractarian” form has the potential of improving the actions of the individual. Hence, Mises’s conception of rationality and his position in the socialist calculation debates are compatible with enlightenment in a “contractarian” spirit. Having said that, we have argued in section 4.5 that the unique knowledge provided by one particular mental tool, monetary calculation, is indispensable for the choice of means in non-trivial situations, according to Mises. In his conception, there is no (rational) action without monetary calculation but only “groping in the dark” (Mises 2012 [1920], p. 23). We can encapsulate Mises’s respective deliberations in the assertion (NEC-I): *Monetary calculation is necessary for (rational) individual action in complex situations.*

Our reconstruction of Neurath’s and Mises’s conceptions of rationality combined with the corresponding distinction between two levels of analysis, individual and social, allows us to separate several contentions in the socialist calculation debates, which sometimes tend to be blurred. We hope our clarifications trigger and facilitate fruitful discussions on the history of the calculation debates and on the truth of these and other contentions. In addition to (NEC-I), we can distinguish at least three other claims:

(SUF-I) *On an individual level, monetary calculation is sufficient for guaranteeing successful action (in complex situations).*<sup>75</sup> Since “[m]oney does not measure value” (Mises 1951 [1922], p. 115), this proposition is trivially false – except for the extreme case of an individual who has perfect knowledge and exclusively

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<sup>75</sup> O’Neill (1998) seems to come close to ascribing the claim (SUF-I) to Mises provided the actor has perfect knowledge (see section 4.4).

monetary aims; and even then, the decision to pursue solely monetary maximation must be stipulated by another faculty than monetary calculation. Neither Mises nor Neurath hold (SUF-I).

(NEC-S) *The (non-exclusive) use of monetary calculation by individuals and individual firms is necessary to bringing about a favorable outcome on a social level.* In our interpretation, this statement is the linchpin of Mises's position in the socialist calculation debates. He maintains that without private ownership of the means of production, there is no meaningful monetary calculation, and this is detrimental to well-being on a social level. Note that whereas we construed (NEC-I) as analytically true if we follow Mises's conceptions of "rationality" and "action", (NEC-S) amounts to an empirical statement once it has been specified what is to be considered a "favorable outcome". Desirable outcomes of socialism are rendered extremely implausible and unlikely by Mises's arguments – but contrary to claims by some Austrian economists not logically impossible.<sup>76</sup>

Neurath and Uebel apparently interpret Mises as maintaining the much stronger empirical claim (SUF-S):<sup>77</sup> *The (non-exclusive) use of monetary calculation by individuals and individual firms is sufficient to bringing about a favorable outcome on a social level.* Such a reading could partly rest on the frequently heard yet erroneous assumptions that Mises and Hayek (i) assume the *exclusive* use of monetary calculation and (ii) take money prices to communicate complete knowledge perfectly and to suffice to coordinate individual plans.<sup>78</sup> However, Uebel is clearly aware of different

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<sup>76</sup> See footnote 60.

<sup>77</sup> Predominantly, Uebel reconstructs Neurath as ascribing the claim (SUF-S) to Mises, but Uebel seems to endorse this interpretation. See Uebel (2005, 2007, 2008, 2018, 2019) for the related distinction and discussion of "very weak in kind calculability", "weak in kind calculability", and "strong in kind calculability".

<sup>78</sup> See e.g. Hayek (1948 [1945], p. 87) and Boettke (2018, p. 87-88).

assumptions and methodologies of Neurathians, Austrians, and mainstream economists. His reasoning seems to be indirect: Mises's "market fundamentalism" (Uebel 2018, p. 314) relies on (SUF-S), thus Mises champions (SUF-S). We agree with Neurath and Uebel that (SUF-S) is false and that neither Mises's conception of rational action nor his arguments in the calculation debates support (SUF-S). Mises's conclusions deserve criticism to the extent to which they tacitly rely on (SUF-S).

Irrespective of the dispute whether Mises holds and defends only (NEC-S) or (SUF-S) or both, this section stresses a conceptual-epistemological point: it remains dubious by which evaluative standards Mises assesses the overall social outcome referred to in both contentions. Contrary to what Neurath insinuates, Mises denies monetary calculation any role in the comparison of social orders:

"Monetary calculation only has meaning within the sphere of economic organization. [...] it cannot be used as a criterion of national wealth and income". (Mises 2012 [1920], p. 13)

Other critics of economic calculation fail to realize that it is a method available only to people acting in the economic system of the division of labor in a social order based upon private ownership of the means of production. It can only serve the considerations of individuals or groups of individuals operating in the institutional setting of this social order. It is consequently a calculation of private profits and not of "social welfare." [...] He who seeks to judge actions from the point of view of a pretended "social value," i.e., from the point of view of the "whole society," and to criticize them by comparison with the events in an imaginary socialist system in which his own will is supreme, has no use for economic calculation. Economic calculation in terms of money prices is the calculation of entrepreneurs producing for the consumers of a market society. It is of no avail for other tasks. He who wants to employ economic calculation must not look at affairs in the manner of a despotic mind. Prices can be used for calculation by the entrepreneurs, capitalists, landowners, and wage earners of a capitalist society. For matters beyond the pursuits of these categories it is inadequate. It is nonsensical to evaluate in money objects which are not negotiated on the market and to employ in calculations arbitrary items which do not refer to reality. [...] It is

possible to determine in terms of money prices the sum of the income or the wealth of a number of people. But it is nonsensical to reckon national income or national wealth. As soon as we embark upon considerations foreign to the reasoning of a man operating within the pale of a market society, we are no longer helped by monetary calculation methods. The attempts to determine in money the wealth of a nation or of the whole of mankind are as childish as the mystic efforts to solve the riddles of the universe by worrying about the dimensions of the pyramid of Cheops. [...] But what is the meaning of the items in a statement of a nation's total wealth? What is the meaning of the computation's final result? What must be entered into it and what is to be left outside? Is it correct or not to enclose the "value" of the country's climate and the people's innate abilities and acquired skill? The businessman can convert his property into money, but a nation cannot. (Mises 1998 [1949], p. 217-218)<sup>79</sup>

We quote Mises in considerable length in order to dispel the widespread misapprehension that Mises's standard for assessing the success of economic systems is monetary calculation. Ironically, he wholeheartedly agrees with Neurath on the unsuitability of using monetary calculation (and most forms of cost-benefit-analysis) for judgments on social orders. However, whereas Neurath offers calculation in kind as an alternative, Mises remains silent. He merely drops a few unspecific remarks to the effect that the primary goal of setting up a social system is to create conditions that enable a rise of material welfare (1985 [1927]). Probably Mises regarded capitalism as superior to socialism to such an extent that an explication of "material welfare" was expendable. Analogously, Neurath focuses applications of calculation in kind to different plans for resource allocation within socialism; to him the superiority of socialism over capitalism appeared to be too obvious to be worth attesting in detail. If the anticipated alternatives are grinding poverty or fabulous prosperity, the metrics of welfare assessment are futile. However, for a substantiated evaluation of economic systems and for piecemeal

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<sup>79</sup> See also Mises (1940, p. 203-205; 2012 [1920], p. 13-14).

engineering proposals, well-defined and workable comparative standards are required. As early as in 1935, Hayek identifies a lack thereof as a theoretical lacuna in Mises's position in the calculation debates. Mildly successful in hindsight, Hayek encourages research ...

[...] on the extent to which the impossibility of rational calculation would lead to a reduction of output in a centrally directed economy compared with that of a competitive system. And although in the opinion of the present writer it seems that careful study can leave no doubt about the enormous magnitude of that difference, it must be admitted that there is no simple way to prove how great that difference would be. The answer here cannot be derived from general considerations but will have to be based on a careful comparative study of the working of the two alternative systems, and presupposes a much greater knowledge of the problems involved than can possibly be acquired in any other way but by a systematic study of economics. (Hayek 1935, p. 37-38) <sup>80</sup>

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<sup>80</sup> Owing to the thoroughgoing subjectivism prevailing in contemporary Austrian economics, Mises's problem of providing workable standards for the evaluation and comparison of social orders is even more pressing today. See e.g. Costea (2003) who argues that in the light of Mises's own conceptual tools, he is too hasty in judging certain monopolies as negative for social welfare. Incidentally, the example of monopoly prices was raised in the debate between Neurath and Mises as well (see e.g. Nemeth 1999 2005; Uebel 2005). A less deficit-oriented way of contemplating Mises's and modern Austrian economists' lack of explicit, workable evaluative standards is the indicated insight that the normativity of evaluative standards never follows from a scientific theory but must be stipulated. Once an evaluative standard has been explicated and claimed to be normatively meaningful, the standard can be subject to rational discussion and deliberation (see also Linsbichler and Cunha 2021).

## 6 Conclusion

On a general level, this paper contributes to the understanding of the origins, developments, and repercussions of the Austrian School of economics on the one hand and the Vienna Circle's Logical Empiricism on the other. Previous accounts of the exchange between Mises and Neurath tend to suffer from attaching little regard to their different use of the term "rational". The paper at hand aims at reconstructing and comparing the idiosyncratic and non-uniform conceptions of rationality that underlie Neurath's and Mises's arguments. Typical for Viennese Late Enlightenment, both scholars are mostly concerned with carving out limits of rationality. Moreover, both Neurath and Mises emphasize the crucial role of information and knowledge for rational decisions and for improving well-being. On a theoretical level, this trait is aptly accommodated by the reflexivity of Neurathian rationality and by the approach of Austrian economics, which aims at a theory of action rather than a theory of choice. Particularly, in a theory of action, the available ends and means are not pre-defined, but subject to the individual's subjective framing.

Applying our reconstructions of Misesian and Neurathian rationality, we distinguish an individual level of analysis and a social level of analysis, corresponding to the primary intentions of the two conceptions of rationality, respectively. On the social level, economic orders are compared and evaluated. Neurath and Mises reject monetary calculation (including most forms of cost-benefit-analysis) as an evaluative standard and Neurath, building upon the work of Popper-Lynkeus and others, develops calculation in kind as an alternative. He is convinced that a form of democratic socialism is preferable to capitalism, but the details of production plans should be decided based on calculation in kind. In comparison, Mises does not provide any workable evaluative standard. He regards calculation in kind as overly ponderous but

does not offer principled objections against its use on the social level. In any case, Mises maintains that any (reasonable) evaluative standard on the social level suggests the adoption of an economic order which allows for meaningful monetary calculation on the individual level.

On the individual level of analysis, the cautionary traits of Neurath's and Mises's conceptions of rationality stand out. In the context of the calculation debates, Neurath is less concerned with the individual level since he champions economic systems in which decisions about production are delegated from the individual firm or entrepreneur to the planning board or to the voters. Somewhat controversially, we reconstruct Mises as allowing for and approving of the use of other mental tools accompanying monetary calculation. Consequently, as long as a by and large capitalistic economy prevails, both Mises and Neurath could accept that individuals or individual firms voluntarily use monetary calculation together with limited versions of calculation in kind, for instance "common good balance sheets (*Gemeinwohlbilanzen*)".

On a final note, we want to suggest that our hints at challenges in the successful implementation of Neurath's democratic socialism and at a conceptual gap in Mises's attempted comparisons of economic systems are not of historical and theoretical interest only. The ramifications of these problems indicate the momentousness of further research in political economy and in philosophy in order to enlighten public discussions of questions such as: Which (political) institutions allow enlightening knowledge to grow, spread, and become efficacious to well-being? By which standards can and should we judge efficaciousness and well-being?<sup>81</sup>

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<sup>81</sup> For reconstructions of Neurath's arguments regarding different notions of well-being, see e.g. Linsbichler & Cunha (2021) and Nemeth (2019).

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