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Principles of economic calculation and pricing

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Abstract: The principles of economic calculation set out by Mises (1990, 1976, 1953, 1998), namely that an agent is inspired by past prices in economic calculation, face the problem of circular argument, infinite regress, and the empirical question of which past prices the agent is inspired by, and are inconsistent with Mises's correct assertion that action is aimed at changing the future. Principles of calculation must be based on attributions of valuation, and calculation must be based on value determinations, which Mises explicitly rejects.

I provide an alternative interpretation of the problem that is future-oriented and presents principles of calculation based on the agent's value determinations. This is made possible by a paradigm shift in interpretation based on defining individual utility and individual equilibrium. The paper presents philosophical-economic speculations on the unit of utility (util) and how it can be ontologically-informationally defined. The propositions are supported by in-depth philosophical argumentation alongside Platonic-Aristotelian-Kantian-Hegelian-Brentanian-Hayekian lines, inspired by the works of Ján Pavlik.

A logical consequence of the principles presented is a description of the dynamics of price-setting (as a consequence of individual intentions) based on the individual utility of the agent. Demand-supply that are usually used as preconditions for price formation are described in the interpretation as consequences of individual intentionality and dynamic of individual utility.

Keywords: economic calculation, theory of pricing, human action, individual utility, individual equilibrium, final equilibrium, problem of util, Aristotelian motion, intentionality, causa finalis.

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1 Introduction

The aim of this paper is to eliminate the logical problems in the current interpretation of the Austrian School of Economics related to the principles of economic calculation and to present an alternative interpretation that will in turn have implications for the theory of pricing from the individual's point of view. The aim of the thesis may seem at first sight to be superfluous. Indeed, within the Austrian school, the interpretation of the principles of economic calculation provided in Mises (1990, 1976, 1953, 1998) is more or less accepted, and the debate is rather about the possibilities of calculation in socialism;[2] see secondary discussion (in alphabetical order): Boetke (1998), Caplan (2004), Eshelman (1993), Herbener (1991, 1996), Hoppe (1996), Hülsmann (1997), Lavoi (1981), Kirzner (1988), Rothbard (1991), Salerno (1990a, b, 1993, 1994), and Yager (1994, 1997). However, a detailed look at the interpretation of the principles should raise questions.

The problem I am focusing on is that the interpretation of economic calculation is based on the concept of past prices. This is in logical contradiction to Mises' claim that action is aimed at changing the future. At the same time, the principles of calculation provided by Mises *are not anchored in a subjective attribution of value*; Mises (1998) explicitly writes that "Economic calculation always deals with [money] prices, never with values" (p. 332, note mine), which is a basic interpretive problem in the context of, among other things, individual calculation and so-called in-kind calculation. For we have no answers to a simple question: How does Robinson or an autarkic agent calculate (on autarkic entrepreneurship, see, e.g., Packard, 2020), and how did our ancestors calculate, outside the monetary system? Apart from this, Mises's interpretation of the principles of calculation faces problems of both circular reasoning and infinite logical regress.

The past (even in the form of prices) is essential for an agent (e.g., to recognize change and progress). However, I will argue that the past cannot be relevant to the interpretation of the principles of economic calculation. Principles of economic calculation must be future-oriented; they must be based on individual value, and only as a result of these processes do they become prices" (i.e., if they are future-oriented and based on individual value, then the result is price setting) . So, prices cannot be a prerequisite for the agent's calculation. My aim will be, therefore, to use the vital parts of Mises (1998) and Rothbard (2004), focusing on the future orientation of action and the relevant treatise on the Evenly Rotating Economy (hereafter the ERE) as illustrative of the notion of an equilibrium, but which I will place in a different interpretive context: a Platonic-Aristotelian-Kantian-Hegelian-Brentano-Hayekian context of agent intentionality (for a consideration to link post-Brentano philosophers and the Austrian School of Economics, see Grassl, 2017), which is also inspired by the synthesis of the vital parts of works of Hegel and Hayek realized in Pavlik (especially in 2004).

I will proceed as follows. In Section 2, I define the interpretation problem in more detail. In Section 3, I will focus on philosophical problems related to the interpretation of action. I will present a Platonic-Aristotelian-Kantian-Hegelian-Brentano-Hayekian interpretation based on an agent's intrinsic intentionality within a time continuum, which is subsequently manifested in action (as its consequence) but potentially also in non-action (i.e., as indifference or an individual equilibrium). It will be a matter of linking vital parts of Mises's interpretation of agency with other philosophical backgrounds. Reflections will provide the basic argument for a paradigm shift in the interpretation. In Section 4, I will focus on describing the paradigm shift of the interpretation that will provide the interpretive context. This section will provide us with

[2] Hülsmann (1997, p. 47) partly points out the problem. Pošvanc (2019, 2021b) is also critical.

the foundations for reinterpreting the principles of economic calculation. The paradigm shift will be based on the introduction of the continuously-constructed Idea of economic orientation. I will present the concept as a phenomenological-informational structure of mind (Hayek, 1952), where the interpretation provided in the Phenomenology of Spirit (Hegel, 2019), or the post-Brentano phenomenological tradition of gestalt psychologists (see Smith, 1996), will also be inspirational. The Idea will be presented as an individual utility - the idea of an agent's satisfaction through a portfolio of goods, where needs as a *whole* are satisfied by the portfolio of goods as a *whole*. In Section 5, I will describe the universal principles of economic calculation (valuation-based) based on the dynamics of the differences between the desired-potential-actual state portfolio of goods. The interpretation will be subjective and individual - applicable even in an autarkic version of the agent's action, based on universal principles, future-oriented, will not face the logical problems of reasoning in a circle and infinite regress, and will be universally applicable to a non-monetary (mutatis mutandis, also to a monetary) economic system. I will then show how an agent sets prices from an individual perspective without assuming the existence of supply and demand. Finally, in Section 6, I will summarize and outline further potential research.

2 Problems of Mises's interpretation of calculation

Mises (1998, pp. 11, 13, 18) argues that human action is aimed at changing the future. This claim is logical. We cannot change the past. The present, as Shackle (1992) reminds us, is already happening and escapes us towards the past. As Bil'o (2004) points out, we act in such a way that our goal in acting is not to change what has happened or what is currently happening. The goal of acting is to remove the potential disconformity that would occur if we did not act/intervene. There is nothing to object to here.

The problem arises when describing the principles of economic calculation based on the existence of past (monetary) prices. For Mises (1990, p. 10), a price is an objectified reference point at which the subjective valuations of the participants in an exchange are objectified. Mises does not actually provide an interpretation based on values.[3] He follows Čuhel's theory of ordinal marginal utility (see Rothbard, 1956, p. 5; Hülsmann, 2007, pp. 218–219 and p. 390; Hudik, 2007), which says that we cannot calculate value in units (utils) and that we can only subjectively compare what we prefer more and less (a claim we must of course deal with in this paper). This ordinal "limitation" leads him to use prices (exchange values) in explaining calculation, which are objectified or, more precisely, inter-individual value communication tools that provide the unit of calculation - in monetary economics, the money price; an explanation of in-kind calculation is avoided by Mises (see, e.g., Mises, 1990, pp. 8–9; 1998, p. 699).

Mises (1990, 1976, 1953, 1998) anchors the principles of subjective calculation on past prices which do not change that rapidly; see Mises (1990, p. 11, 1976, p. 168, 1998, p. 213), even though his formulations are from time to time also two-sided; for example, Mises (1998) writes in detail:

> [T]he entrepreneurs never make these prices enter into their calculations without paying regard to anticipated changes . . . [**however**] . . . The prices of the immediate past are for them only the starting point of deliberations leading to forecasts of

[3] On the basis of this shortcoming alone, we could reject Mises' interpretation without providing further details; see Mises' refusal to describe calculus in value terms (Mises, 1998, p. 332).

> future prices . . . [**however**] . . . The prices of the past do not influence the determination of future prices. (p. 333, emphasis and bold notes mine)

And:

> [**Again**] *The prices of the past are for the entrepreneur*, the shaper of future production, *merely a mental tool*. The entrepreneurs do not construct afresh every day a radically new structure of prices . . . They merely transform what the past has transmitted in better adapting it to the altered conditions. How much of *the previous conditions* they preserve and how much they change depends on the extent to *which the data have changed* . . . [**but**] . . . action is always directed toward the improvement of future conditions . . . [**fine, but**] . . . man has within his reach only two aids: experience of past events and his faculty of understanding . . . [**ok, so we have**] . . . *Knowledge about past prices* is a part of this experience and *at the same time the starting point* of understanding the future . . . [**but logically then it is not possible that**] . . . If the memory of all prices of the past were to fade away, the pricing process would become more troublesome, but not impossible. (Ibid, p. 334, emphasis and bold notes mine)

At this point the reader may ask, "Yes, and from what else can we possibly derive calculation as such, if not from some reference point in the past?" The step in question is, after all, a logical one. It follows some kind of human experience from the past; the past certainly influences us (what else should influence us if not our individual/social past?). One phenomenon in the form of a past price (objectified individual valuation) is followed by another, in the form of a new individual subjective calculation/valuation inspired by the past price, followed by a new result (i.e., a newly formed price), etc., in a round and round repetition from the past ad infinitum. What is wrong with this notion?

The past-realized price takes into account individual valuations and the economic context at the particular time when seller-buyers just accepted the bid-ask/demand-offer. However, if the action is aimed at changing what may come to pass (i.e., the agent thinks some worse state would have occurred without his intervention), then the past price is not inspiring. This is because the past price logically took into account what an agent imagined about the future at that point in time (in the past) and not what his actual problems are today. In other words, the past price is not inspirational within action because the agent is faced with a new economic context in acting, which defines his new intentions over time, which he then translates into action.

The fact that entrepreneurs do not create "a radically new structure of prices" daily, hourly, or in seconds does not apply at all in some markets. Even if an entrepreneur repeats a bid-ask price from the past, it only means that his updated calculation leads him to do so. The fact that prices are similar has nothing to do with it; it is just an empirical fact. Moreover, Mises faces the empirical question of exactly which past price he is talking about. Which price from the past is supposed to be inspirational? Mises (1990, p. 11; 1976, p. 168; 1998, p. 213) argues that these should be prices that have occurred only recently and have not had a chance to change much yet; therefore, they take into account the current valuations of individuals and are therefore applicable. However, the argument is both empirical and problematic because valuations *can change easily*, and a potential change in valuations destroys the whole interpretation. Why? Because if valuations change, and so past prices become meaningless, then on what basis are we calculating?

The interpretation provided by Mises is equally a circular argument. Price is the consequence of action, individually ongoing valuation, and calculation of two agents. The

consequence/effect cannot act as the cause. This does not explain anything. Mises claims that the cause of price is the calculation of two individuals, but the latter is based on past price. The past price is therefore already a consequence of the calculation of two individuals anyway. This means that he claims that the calculation is based on the (past) calculation (circularity in the argument), which is based on the past one. We are thus also faced with an infinite regress, where it is questionable how the initial price came into existence (whether monetary or non-monetary) if the price is based on a calculation derived from past prices (whether expressed in money or as in-kind), and these in turn from those before.

The answer that that calculation is subjective is correct, but it does not answer the question of what universal principles are. The individual calculates subjectively; I have no doubt about that. But I am interested in the universal form of the process of calculation. The principles of calculation that Mises describes are not logically correct. Arguing in a circle, in an infinite regress, Mises contradicts his correct statement that action is future-oriented. The interpretation needs to be modified.

3 Philosophical background of the problem: Intentions and actions in the time continuum

Mises puts the action at the beginning of his argumentation system. However, the act is a consequence (albeit an integral and related consequence) of man's intentional conscious-mental-sensory-neural processes. Internal intentional processes are imagined as mental in general. Mises (1998) works with mental interiority only implicitly; he writes, "Action *is will put into operation and transformed* into an agency" (p. 11, emphasis mine) and, "Action means *the employment of means* for the attainment of ends" (ibid., p. 13). Employment is already an objective consequence of defining, determining, and composing, where interiority implies a will that thinks how to define the means and how to compose and combine them towards a new (more appropriate, more satisfying) determination of things. Action, in other words, is already an unfolded intervention (employment of already defined means) into the reality, the purpose of which is, as Mises (1998) writes, "to substitute a more satisfactory state of affairs for a less satisfactory one" and to eliminate "felt uneasiness" (p. 13).

The calculation processes precede the action. They operate as intention assessments, where the action is derived subsequently from the chosen most relevant alternative/intention for the agent. To understand the processes, we therefore need to analyze in depth precisely these intentional states that are linked to the action. We need in-depth analysis of intentions and action. We face three basic questions: what it means "to act," what it means to act in the reality and time continuum, and what it means to act or not to act as well.

3.1 Acting as an informational determination of state of affairs and intervention

An action implies a human endeavor to make an informational coincidence of his idea of the state of affairs with the resulting achieved state of reality. Acting is thus a real and practically realizable potentiality in the reality of which man is at the same time a part; of course, the intervention is done only to the extent to which man knows reality, or to the extent of various givens of reality that man's mind cannot influence and change by knowledge alone.[4]

[4] If we theoretically imagine the maximum of a given state (i.e., absolute universal knowledge of the principles of reality), then the minimum givenness and immutability should be the God-Spirit as the Creator of the reality. Here

We make a change by action. We change operation of reality, however, which is not anyhow stable, but it changes as such at the same time—reality is in Aristotelian motion.[5] We can say that agency is a purposive Aristotelian movement/change, a purposive informational determination of reality, aimed at bringing about a change in the state of affairs that causes a higher degree of satisfaction, *where the affected state of affairs itself* is in Aristotelian motion as well. In other words, the change that the agent instigates is a change in how reality has operated up to the moment of the intervention in question. It is an intervention into the movement of reality (i.e., into how the unfolding of potentiality of reality itself manifests into the actualized state), while its potentiality is also actualized and so prepared for new movement/change (for a description of Aristotelian movement, see, e.g., Sachs, 2005).

Aristotle describes the movement of reality simultaneously in the context of the double-meaning notion of *entelecheia*, which Sachs (2005) translates as at once "being-at-work-staying-itself," due to Aristotle's linking of the formal cause with the final cause, or claiming that these two causes coincide and respectively act simultaneously in movement/change (see Falcon, 2023, sec. 3, Phys. II 7 for more details). Thus, our purposiveness is about changing the motion of reality, which is defined by nature itself (by its formal and final cause[6]), so that a given altered state of reality (its form) corresponds to the needs of the agent (the goal/final cause defined by him).

This unfolding (unbending/uncurling) of potentiality into a new actuality (which becomes again something potential) can be thought of as recognizing that potentially anything can happen (the agent considers several alternatives), but only something actually happens (the agent chooses only one option), achieving some change while at the same time not stopping at all. The agent lives on (i.e., again evaluates different potentialities and actualizes only the one chosen), achieving some change, etc. Acting is, from this perspective, an intentional intervention that affects the logical-informational, automatically running determination of a reality that would look different without the action.

Let us just note that the implementation of action defined in this way does not take place only physically, by some direct intervention of the body (work) or an instrument, but also informationally (e.g., as a set of commands and ideas) (see also Mises, 1998, p. 13, "Under special conditions a word is all that is needed"). In the same way, action can be implemented automatically (e.g., as a previously executed set of commands for some automatic process or for an automatic tool) (automatism), or on the basis of the design of things (the informational determination of the structure of things), where the design (formal cause) determines the boundaries of possibilities of the use of things. It can also be implemented contractually through another agent.

3.2 Action and the problem of an empirical event-based timeline and internal (intentional and knowledge-based) determination within the time continuum

The usual interpretations concerning the notion of "in time" are conducted on what I call an event-based empirical line of interpretation (i.e., action/change at t1 is cause and has an effect

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the reader may conceive not only of God but of some absolute principle of absolute creation, which would be equally given to us and could not be overcome by us; this is due to the fact that we ourselves are the result of this creation.

[5] Simplistically, the reader can imagine movement defined by Aristotle as a change on some layer of reality in general. Aristotle thinks of motion as the realization of the possible as such (*Met*. XI 9, 1065b 15-17).

[6] I define *final causality* in the appendix.

on action/change at t2; this is cause and has an effect on action/change at t3, etc.). However, this is not accurate. Indeed, the perspective is different when we realize that action/change is an effect that manifests itself as the event-based line *empirical outcome*. This result is both conditioned by intention and based on the knowledge of reality; the knowledge of its normic determinations.[7] So, we are looking *all at once* at both phenomena: the *empirical story* of events and the *internal-normic* determinations of action as well as internal-normic determinations of reality, both of which produce this "story."

This problem can be summed up in the question of what is the cause of something and what is the result of that cause, and in a time continuum. When interpreting anything within the time continuum, we are looking at two realms at once: a) the event-based line (arrow of time or time continuum)—that is, what man empirically did in the time continuum (as an effect)—and b) the individual intentionality within the time continuum—that is, why (intention; formal and final cause) and how one did this or that (based on knowledge of normic conditional of reality; efficient and material cause) within the time continuum. This b) is a description of the cause of the "flowing" empirical effects of a).

We have to also realize that what exists is realized motion/change—whether in terms of human existence or reality; the reality is not the static environment we are in. While humans unbind their potentiality for a new actuality in the mode of awareness, reality is equally an unfolding of its internal essential-normative structuring (i.e., potentiality for some new actual state); otherwise, we would not be able to know it and intervene in it. That we intervene in reality is, in principle, evidence that reality itself is in motion. If it were static, it would be unchanging.[8]

Here we face a non-trivial problem: everything is in constant motion. Motion and change have been an interpretively complicated phenomenon since the time of Zeno (on the problem of motion and change, see, e.g., Boccardi's response to Priest in Boccardi, 2019, and the description of Zeno's paradoxes in Huggett, 2024). There is no fixed point, a standing past, that influences the direction of movement/change; in other words, even the past, when it *had come*,

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[7] The distinction is already perceived by Plato, who draws attention to the difference between the perceived-appearing world, i.e. εἶδος (eidos) and the normative world (the world of forms). See e.g. in Plato: Theaetetus, Parmenides or in The Republic (allegory of the cave). The notion of a normative conditional, expressing some internal determination of a thing, in the case of a person his conscious thought, is used also by Bashkar (2008) and Fleetwood (1996). See also Hegel (1986, primarily the book on Essence), where Hegel describes this inner essentialism that unfolds itself into the particular substance.

[8] Platonists may argue here that there must also be something stable, meaning form(s), otherwise we could not know reality; cf., e.g., Plato: Theaetetus or Chappell (2024). I only partially agree with the claim in question, because I think that the very concept of form is dynamic (and this is so regardless of whether it exists per se or only through a thinking agent; on the self-existence of forms, see Fine, 1984, pp. 252–300, or Wilhelmsson, 2023). Indeed, in Plato, it is possible to identify a kind of, we might say, 'ideal' of forms (setting, as it were, a standard of what is what; see, e.g., Hales, 1991), whereby this ideal is copied by particular things—seeking to resemble it / to be in coincidence with it—and / but also, retrospectively, thereby co-constituted by it. By recognizing the forms, we can at the same time manipulate them, reshape them. Therefore, forms must also be dynamic. This is best imagined on an absolute scale. The knowledge of form/s should culminate in (what Hegel describes as) the Absolute. Then, theoretically, subjective knowledge as idea and concept (i.e., ἰδέα (idea) in its totality) is in coincidence with the Idea and Concept of the thing-in-itself (i.e., μορφή (morphe)). In a given state, we should have universal knowledge about everything, or more precisely about all forms-formation. However, if we theoretically reach a given state, we should also control the given forms. This in turn implies that they are not absolutely given, but dynamic. In the context of Plato, this dynamism is, in my view, given by the principle of "Indefinite Dyad" (indefiniteness from which difference or contradiction is sourced). However, the argument for stability is also correct; something must be stable over time for it to be knowable, comparable over time, and allowing for the registration of change. This, however, should be the whole of the thing—its unity, the Platonic One (or logicity); not some ideal self-standing form. The concept of the whole, as a stable element in interpretation, is appropriate because of its relative character (not absolute); for it is always whole (i.e., it manifests as stability) in the time continuum, regardless of the fact that its (cardinal) structuration changes, which manifests as a change in particularity.

has come, *came* into being, was in motion. When we perceive the past, it is not static; it is merely factual—because it had/has happened. When the past was, it was also in motion.

When we intervene, we intervene with our "movement" into the "movement" of reality in Aristotelian parlance. We do this a) intentionally and b) on the basis of our knowledge of the movement of reality (its internal normativity). This creates an empirical event-based line influenced by us. We should also realize that the empirical events were in motion prior to our movement into reality, and that movement (without our intervention) was equally conditioned by some normative conditionals, just without our intervention. When we change something, we change that informational-normativity.

So, an empirical flow of all events within reality is created based on the abovementioned internality (as potentiality, normicity) while this internality (as potentiality) is also actualized within the motion/change. This (actualized potentiality), at the same time, provides information-normic background for a "new" internal causality of motion/change and so creates a new (empirically perceived) temporal period in the time continuum; so empirical perceived time is a consequent of internality (potentiality, normicity) of motion/change.

This problem is also dealt with in great intensity in Aristotle's *Metaphysics* (see, e.g., *Met*. XI 8), where Aristotle argues that actuality *necessarily precedes* potentiality; which it does from an empirical perspective. At the same time, however, Aristotle claims that essence and form (i.e., the normic-informational-determination of a thing) are equally actuality (*Met*. XI 8; see all of 1050a, esp. 1050b 2-3); Aristotle is clearly faced here with a circular argument, which he can only avoid by applying the idea that *what is actualized includes also* its potentiality as internal cause; *at once*.[9]

Sachs (2005) points out here that Aristotle himself says: "the act is an end, and the being-at-work is the act, and since energeia is named from the ergon, it also extends to the being-at-an-end (*entelecheia*)" (*Met.* 1050a 21-23, as cited in Sachs, 2005). The description of this state (*entelecheia*) is apparently a condensed expression of multiple views of one single phenomenon (internality of thing and its particular empirical explication); as Sachs (2005) writes, "[t]he use of the pun for the serious philosophic purpose of saying at once two things for whose union the language has no word was a frequent literary device of Aristotle's teacher Plato."

From the point of view of our interpretation, it is therefore relevant to distinguish "the pun for the serious philosophic purpose of saying at once two things for whose union the language has

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[9] This ambiguity is due to the fact that Aristotle's interpretation of motion is an empirical event-based timeline; or substantial one (see e.g. Vezina 2007); this can be seen in his tracing of potentiality and actuality towards the first mover—God—as pure unchanging actuality and essence (1050b 5-6, *Met*. XII 6 and 7). This, in turn, I think, is due to his departure from the Platonic conception of forms/ideas, a doctrine which seeks precisely to describe the intrinsic normic-informational characteristic of the thing-in-itself. A problem associated with the theory of Forms for Aristotle was the separation of Forms and Substance; Platonists do not explain how Forms constitute substance, whereas Forms themselves are not substance (see briefly in Vezina, 2007). However, Aristotle thus faces an infinite empirical regress and does not expose the intrinsic causality of things; he ends the regress with God as pure unchanging actuality and essence. In doing so, however, he merely affirms the necessity and existence of internal cause in the interpretation.

It is Hegel who tries to link Plato with Aristotle and emphasizes the internal (logico-informational determination of the thing), which only subsequently manifests itself on the event-based empirical line. This is most evident in Hegel's description of the problem of the essence of a thing while empirical causality between two things is a result of essentialities of things in question (Hegel argues that the effect is by necessity connected to the cause and vice versa); see primarily Hegel (1986, book on Essence); briefly in Harris (1983, pp. 153–214). However, as Rosen (2013) shows, Hegel does not explain how empirical-substantial particularity arises anyway. In the context of the account conducted here, particularity should be the continual manifestation of essence in the context of the spontaneous emergence of particularity on the event-based line, and this through the coincidence of informational-logical-normic determination with its empirical manifestation; see also appendix.

no word." In Section 3.3, we will thus conduct the argumentation along several lines over time, regardless of the fact that from the empirical point of view we view the phenomenon as one whole (e.g., we observe man as a whole mind-body or we see an action at once, but which at the same time contains the whole complex of the decision-making process).[10]

The potentiality and actuality appear simultaneously on the event-based line, where it is the unfolding of a potentiality into a new actuality, which is again some potentiality. The potentiality is, therefore, *only logically prior* in the context of interpretation—as the logico-informational essential determination of the thing in question (essence and form). It follows from the given that part of any act of creation of a thing/phenomenon that becomes empirically actual within the empirical event-based line is its logico-informational essential determination that must come into being in order for the thing-in-itself to be part of the empirical event-based line as something "being-at-work-staying-itself."[11]

The empirical event-based line is, in fact, something that occurs as a result of the agent(s) acting and what they want and aspire to, and at the same time it is the result of normative determinations of reality, some part of which we influence, some of which we ignore, some of which we cannot influence, or some of which we do not yet even know about, while even those that we ignore, cannot influence, or do not know about operate to determine how everything (as state of affairs) appears with/without our intervention.[12]

3.3 Action in the time continuum: future orientation of action and by future determination of action

Man's existence is future-oriented, as Mises rightly points out, and at any point in time. But man also creates his event-based line history. This creates a logical split between the influence of the past and future orientation. After all, how can the past have an influence when all that matters is the future state of affairs related to man's satisfaction? But equally, how can the past not have an impact when all one has experienced is one's past?

The *factual empirical past* is, of course, important to us. It provides us with an object of inquiry from which we construct universal knowledge that we seek to apply towards a future that we can influence. It also provides us with a reference point for change; against it we compare and see the difference. Nature, in the context of its past, provides us with what constitutes our environment, and at the same time we use parts of that environment. In the same way, our ancestors have left us something, and we have created something within our individual past.

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[10] Cf. here Dekker and Remic (2024, p. 13): "…Austrian economics should move forward with a far weaker distinction between decisions and actions." I disagree.

[11] It follows that, in the context of the absolute first event ever (today we consider that to be the Big Bang), no other event precedes it in time (time originated on an event-based timeline). So, there was Nothing. However, this does not mean that the absolutely first event in question was not an unfolding of some (as yet unknown to us) actuality-potentiality of the state of something (as prime matter?) that we just do not know or cannot describe precisely today; on the concept of prime matter among Scholastics, see, e.g., Kronen, Menssen, and Sullivan (2000); Vaughan (1943).

[12] Aristotelian analysis of motion implies that reality is equally future oriented (as action is). For reality to endure (in the context of was / is / to-be) is equally an unfolding of its own potentiality into the new actuality. Hence, it is its future potential state, constituted as the logical-informational essential determination of a thing (an idea—or more precisely, logicity—behind the operating of reality), from which actual state the context of the flowing event-based line (the arrow of time) is derived. If reality were not actualized in the context of its future potential state, it would not be right now; this is due to the fact that "any" now has just passed and turned into the factual past. Time is, therefore, the outcome of internal processes of potentiality-actuality of reality (cf. here Aristotle *Met*. V. 11 a 1071b 10).

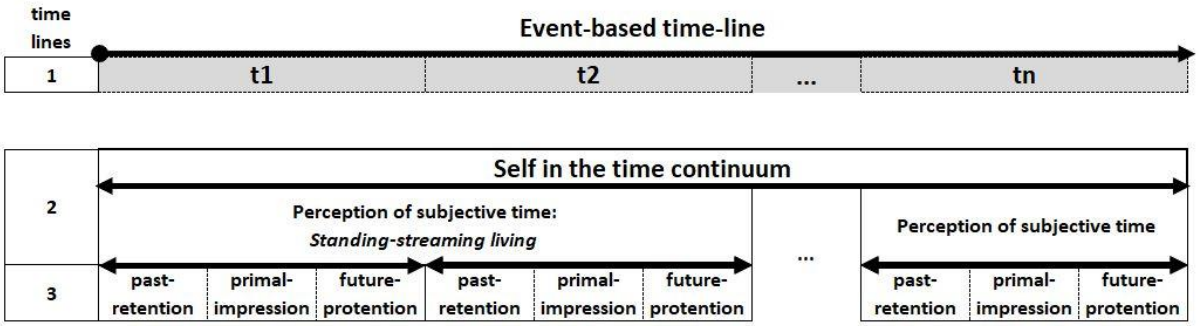
However, it is also true that man abounds with knowledge that allows him to understand reality and at the same time to change it. This means that by acting, we are re-determining something as it should be; we are re-determining the logical principles of reality by virtue of knowing how to manipulate them. Therefore, on the one hand, the past is essential to us (we construct universal knowledge based on it), but at the same time, we are freeing ourselves from past informational determinations through action. We replace nature-given determinations because they do not suit us. We are also replacing incorrect determinations created by us in the past or, so to speak, the obsolete determinations of our ancestors.

The problem of individual intentionality in time within these past-present-future lines is aptly described by Thomson (2007), who explains the problem on the basis of Husserl-Zahavi's conception of the individual perception of time within two levels: a) the whole (the perception of the self per se; so-called "standing-streaming living") and b) the individual parts of this perception—the intentional internal causality existing in time (i.e., how the self perceives itself as that concept per se in the time continuum):

> The absolute flow is the standing-streaming living present. On the one hand, the living present is streaming because it is the continuous transformation (intentional modification) of the about-to-happen into the happening into the just-happened. On the other hand, the living present is standing, because the threefold structure of protention-primal impression-retention that constitutes the streaming is always present and unchanging. (p. 328)

Interpretation in the time continuum therefore requires, from the point of view of the individual, on the one hand, a holistic perception of *standing-streaming living* as a time-stretched image of individuality (i.e., some whole perception of oneself in time). At the same time, the individual totality of the Self is continually being composed round and round by the dynamic partial change of the individual as flowing protention, primal impression, and retention. The result, as we showed, is an event-based line (the operation of reality and actions of other individuals) that appears to us as a final empirical product.[13] Schematically, we can outline the situation as follows:

Scheme 1:



On the upper portion of the scheme is the historical event-based line that forms the arrow of time and our perceived factual time continuum: our entire past, present, and future. However, man himself is equally a part of the given event-based line and equally exists in the time that makes up his subjective time continuum. Subjective perception in time is, in the context of the

[13] See also Houlgate (2005), who explains Hegel's perception of time in terms of dialectical movement: "*The whole process of time consists, therefore, in the present's becoming the past and the future's becoming the new present (that immediately becomes the past)*" (p. 128).

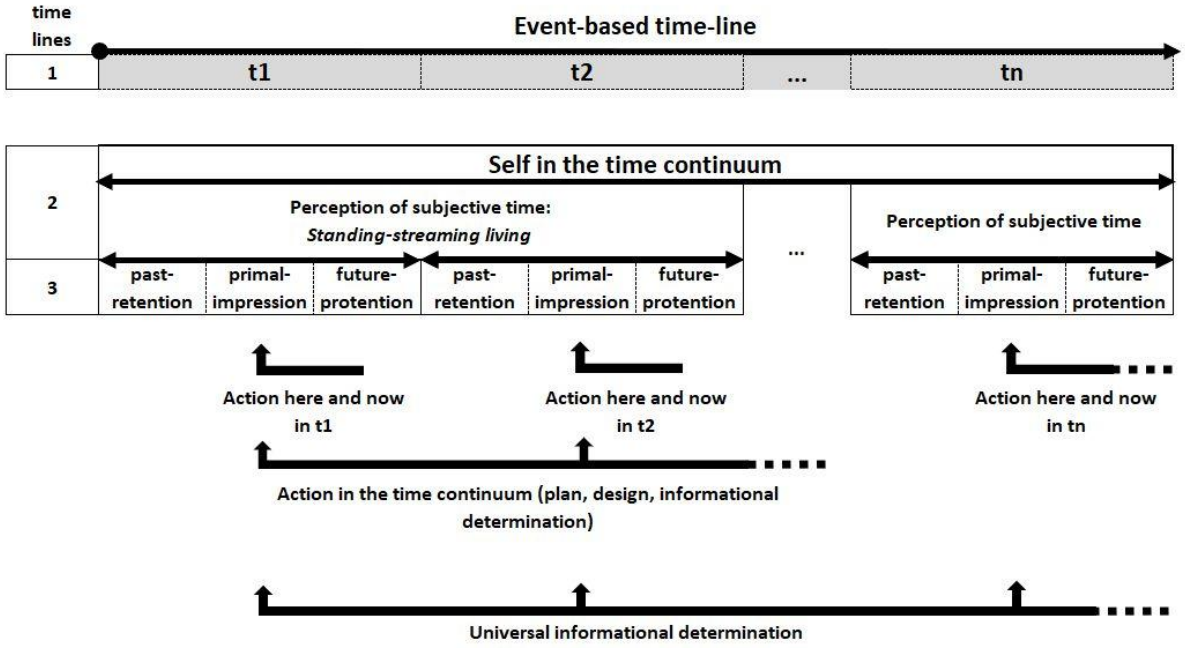
Husserl-Zahavi concept, a composite concept—a whole that is composed of parts (retention-impression-protention).

The whole picture of the human time continuum can thus be imagined as if on three layers: (1) the event-based line of total reality, (2) the perceived Self as a whole (*standing-streaming living* in the context of the wholeness of the individual time continuum), and (3) a layer at each moment composed of past-retention, primal-impression (now), and future-protention, whereby the Self forms its idea of itself in this way.

However, we need to incorporate the notion of action, as a future-oriented intentional change, into the interpretation. Satisfying needs is possible through action, which can be actual (here and now), long-term (as the implementation of a plan), initiated and implemented in the past, and still ongoing (e.g., set through some automatism, design, contract, or command), as well as just a (new) informational determination (e.g., a past combination of existing goods is only newly combined). However, satisfaction can also occur without agency: automatically.[14] But let us deal with agency first; the characteristics of automaticity will be dealt with subsequently in Section 3.4.

Action types can be demonstrated by the second schema, where action is the conscious unfolding of the potentiality of man into a new form of actuality—a change that man believes (ax ante) will lead to a higher satisfaction of needs. Schematically, we can portray this as follows:

Scheme 2:



[14] The satisfaction can occur automatically in such a way that reality itself is set in terms already suited to man and provides so-called general conditions of human welfare (i.e., it is in a state that reality, as if "for free," satisfies some human needs) (cf. Mises, 1998, p. 93; paragraph on free goods satisfying needs automatically, without the need for action-intervention). The second possibility is associated with the spontaneous emergence of rules (cf. Hayek, 1988, esp. pp. 35–52 on spontaneous rule emergence), which arise in a non-purposeful mode against the background of concrete human actions (Pavlik, 1999) and which bring satisfaction to the human being just as automatically, without the human being having to think about the rules in question and purposefully compose them into action.

As can be seen, the drawing of actions in the schema above is counterintuitive—moving from the future to the present. But that's exactly the point in the context of meeting human needs over time. Acting is the informational unfolding of potentiality (of what can be, while what can be is potentially more diverse than what will eventually happen) towards actuality, when something happens in the context of the future so determined. For we act in such a way as to change the future, or, in other words, we shape a more suitable future for us, which immediately becomes the present and thus the past.

The action on the diagram is therefore indicated as if from the future; the idea of how something is supposed to be impacts what is happening now. So, if Mises interprets action as future-oriented, this implies to me only a time course flowing from the past into the future, but this is not a complete insight. Acting is also future-imagination-determined, where it is an unfolding of some potentiality that the agent wants to occur.

The context of future orientation and from future-idea-defined action might best be perceived by the reader within the action of here and now; it is about the future state that something in the time continuum is to achieve, for we cannot affect anything but the future.

However, this is also the case for acting in a broader time continuum—a plan with a temporal determination or some informational determination (design, command) without a temporal determination or for universal rules.

The plan is realized as a future vision in the time sequence of the event-based line; that is, the plan is an unfolding of the future state of affairs (as something should be) into the flow of actual particular actions with a time limit. From the fact that it has a temporal boundary, it is quite intuitive that it is the future that is played out against the present, or it is the future as potentiality that is always actualized in the present.

An untimed plan of an informational determination of reality (e.g., the design of goods that we put into some combination of things from reality) is likewise an informational determination that satisfies needs along a time continuum, where the informational determination in question was/is constructed as a future idea of the use of the good. If the design does not satisfy needs, it ceases to be used (the informational determination ceases to be actualized).

However, universal rules or systems of knowledge and other kinds of institutions can be problematic to interpret. Clearly, rules, knowledge, and institutions are built over time. A given system, whatever it is, changes anyway, but its universal parts remain valid over time. The past has "provided" the temporal space for the acquisition of universal knowledge, which we then use to satisfy needs along the time continuum. So far so good. But then shouldn't we be suggesting the impact of the universality of knowledge and institutions in the context of the event-based line (as Layer 1) (i.e., from the past to the future)?

In fact, the very bottom of the figure of Scheme 2 looks as if universality is "playing" on us from a distant future that we have no way of knowing. This is reminiscent of the Hegelian character of the Absolute Idea (for a brief description, see Harris, 1983, pp. 287–297). At that point (theoretically), subjective Spirit (order of ideas—mind—as a subjective idea and concept) should grasp in its entirety the Kantian thing-in-itself—the object of reality (as objective Idea and Concept) in its universal-logical form (*morphe)*. This would mean for man that he would abound in absolute knowledge. It would be a state of absolute possibilities of control of reality as such and of objective knowledge of the thing-in-itself (a possibility which, for example, Kant rejects). I am not here going to argue (in the context of Hegel) whether the idea of the Absolute is merely a convenient thought construct necessary for interpretation or the actual real goal and direction of the development of everything.

For the purposes of this thesis, it suffices to point out that this universal structure of knowledge, rules, and institutions is future-based in character. These are determined by their potential absolute (or final) state. We use knowledge, rules, and institutions that are not correct within the context of this future only to differentiate and delineate against what we consider right and true, and we apply what we consider right and true appropriately to manipulate reality in the context of our needs towards the future. In principle, this final state can be said to be gradually revealed (in the sense of Hegel's terminology—the Spirit comes to know not only itself as Spirit, but also God-Spirit as reality in its entirety[15]) when we seek to understand the thing-in-itself and to use that knowledge to satisfy our needs.

So, I think it is really as if the Absolute is "speaking to us and showing us" from the distant, vague, and nebulous future that we (as humanity) are moving towards on the event-based line we are constructing, and of course only in the context of that knowledge that is universally valid; whether we will reach that state in its absolute state is another question. Institutions and knowledge are therefore equally future-oriented and future-derived. These considerations lead us to the idea of final satisfaction and automaticity.

3.4 Non-action as informational coincidence and indifference

One of the main problems of interpreting a calculation problem is to determine what the denominator of the calculus is. This is not a trivial problem (see Mises, 1920; Salerno, 1994; Herbener, 1996). Indeed, economic calculation is not an arithmetical operation on some number of goods. Economic calculation is a calculation of the agent's subjective evaluation; the agent calculates the individual importance of goods for the satisfaction of his needs.

In other words, the agent does not calculate the number of apples and oranges, but the importance of some number of apples and oranges, where at the same time the importance of apples is different from the importance of oranges. As Herbener (1996) aptly writes, "The arithmetic problem of [economic] calculation is not the inability to add common units together; it is the absence of such units" (p. 153, footnote 7; see also Salerno, 1994 to whom Herbener refers in the note 7).

However, the calculation must be based on value determinations. Indeed, the diction of economics is that it deals with the value determinations of agents. In other words, reasoning requires defining the individual state of the utility as a whole (i.e., the denominator of the utility, from which we will then be able to derive the cardinal unit "util"—namely, the nominator of this whole).[16] The non-triviality of this problem lies in the fact that we are faced with a subjective attribution of value to goods that is dependent on the individual and changes continuously in every single action and, of course, over time. The problem is therefore the instability of this unit over time and its absolute divergence between agents.[17] However, the maximum state of individual satisfaction/equilibrium is relatively conceivable as stable. This is, then, what the interpretation can be reflected from.

It is evident that Mises (1998) thinks of satisfaction as a state (the whole); he writes that:

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[15] Here I follow the Spinoza-Hegelian idea of God, where God is a separate entity from reality (see interpretation of Hegelian logic by Rosen, 2013), but at the same time, as the Creator of reality, He has put Himself into reality as Spirit (logicality) and is thus also reality (Deus sive Natura).

[16] The term "util" was introduced into the interpretation by Irving Fischer; see Moscati (2019, pp. 56–57).

[17] What is interesting in this respect is that the fathers of marginalism believed that such a phenomenon as a unit of utility could exist and sought it; see Moscati (2019, p. 27).

> Acting man is eager to substitute a more satisfactory *state of affairs* for a less satisfactory. . . his *action aims at bringing about this desired state*. (p. 13, emphasis mine)

He also writes:

> A man perfectly content with *the state of his affairs would have no incentive to change things*. He would have neither wishes nor desires; he would be perfectly happy. He *would not act*; he would simply live free from care. (Ibid., p. 13, emphasis mine)

If the agent is satisfied, he would have no reason to act. The concept of non-action is briefly described in Mises (1998) and Rothbard (2004) and is part of the notion of the so-called *plain state of rest* and the *final state of rest*. Mises (1998) writes:

> The only method of dealing with the problem of action is to conceive that action ultimately aims at bringing about a state of affairs in which there is no longer any action . . . Action thus tends toward a state of rest, absence of action. (p. 245)

These ideas culminate in the imaginary scholar-based concept of the ERE (see Mises, 1998, pp. 247–251; Rothbard, 2004, pp. 320–329). This state of absolutely final equilibrium must be of interest to us precisely in the context of the notion of an individual's state of equilibrium.

The reason is that the equilibrium of the individual *as a stable state* can only be defined in the context of total equilibrium. If, as a thought experiment, we consider the individual equilibrium of Alice, we must also imply an individual equilibrium for Bob, David, Charlie, etc., and we must also imply that reality is determined by all of them in the way that the agents in question wish something to be. If we consider only Alice's individual equilibrium, then the omission of Bob, David, and Charlie, and the fact that reality is set as they all simultaneously wish it to be, would automatically have to lead to a deflection of the equilibrium in Alice. Thus, we can only speculate about the stable state of individual equilibrium in the context of the total, or we can only imply the individual in the context of the total equilibrium.

Mises (1998, pp. 247–251), along with Rothbard (2004, pp. 320–329), describes the state of the ERE on an event-based line. They illustrate that if we remove change from the analysis (so no change in prices happens, "the market prices of all goods and services coincide with the final prices" (Mises, 1998, p. 248), illustratively price stability would be introduced, "no changes in the market data occur," (Mises 1998, p. 248) . . . "values, technology, and resources remain constant"(Rothbard 2004, p. 321), identical evenly rotating activities would take place in the ERE (i.e., "the same activities tend to be repeated in the same pattern over and over again" Rothbard, 2004 p.321), because change would be absent; "The system [would be] in perpetual flux, but it remains always at the same spot" (Mises, 1998, p. 248).

This is again circular arguing, for change is an agency consequence. This "perpetual flux" remaining "at the same spot" is the same in their description because the agent calculates over and over again in the same way along the time continuum since the invariance of the content of the calculation is, in their interpretation, due to the fact that market prices are equal to the final price. But we know prices must be a result, not a prerequisite. The consequence—the coincidence of the market price with the final price—is again constructed as the cause (lets "no changes in the market data occur").

The line of argumentation pursued here, in Sections 3.1–3.3, implies the contrary: that the state of satisfaction must be agent-determined, must persist over time, and must be an explication of potentiality into a new actuality. Thus, the ERE state should be the result of the agents' action.

However, the state of the ERE and its even rotations must also be the result of individual non-action. This does not sound logical at all.

However, Rothbard (2004, p. 321) shows a two-step final process: a period of transition and an unchanging round of economy. In principle, this is a situation where all individuals reach a state of equilibrium by (some "last") action and then do not act because everything is already happening the way they want it to happen. Then the result is the ERE where everyone's non-action persists as long as everything is *automatically* the way the agents want it to be. In other words, for the ERE to persist, any additional wish would have to be automatically fulfilled.[18] Otherwise, intervention (action) is again required.

In this illustrative state of even rotations, change (Aristotelian motion) would occur; unlike Mises and Rothbard, we do not eliminate it from the interpretation. However, agents would be indifferent to this motion/change because it would automatically take place as they wish (hence they would not act—they would not intervene).[19] The state of the system would be in the same place in the context of our indifference-non-action and also in perpetual flux because it would be determined to be automatic-causal; the costs of achieving and preserving the ERE must be equally expended but their allocation would have to be such that what agents demand is (automatically[20]) achieved (see also Pošvanc 2024a). This is due to the fact that everything would change automatically so that every wish would be automatically-causally satisfied; in principle, resources would have to be spontaneously-automatically allocated accordingly so that the agents' satisfaction would be at a perpetual maximum.[21]

There is no need to doubt that this is a purely illustrative idea. This state of affairs is at the same time an illustrative maximum of social utility, which would be a structured combination of a maximum of individual utilities (on the problem of aggregation of the individual into the social phenomenon, see the note at the end of this paper; I do not address this problem in detail in this paper), and these are at the same time individually at a maximum if and only if this social maximum is reached and persisting.

From this idea, however, we can derive the maximum of individual utility, and the denominator has the character of that against which something is measured (standard, whole, ground).[22] The maximum of utility is therefore the denominator we are looking for—the standard, the whole, the ground; the individual meaning of some combination of goods in its whole, the theoretical

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[18] From the perspective of action theory, which concerns wanting, believing that something will happen, and that it will actually happen (see Davidson, 1963, or briefly Oliva Córdoba, 2017), this is a state in which only willing is present. In the ERE state, we are indifferent to whether we believe it will happen and whether it will happen, because it would happen automatically. We would not pay attention to the belief concerning the outcome and the actual attainment of the state. The latter would have to automatically be. If we reached a state of ERE and it ended for some reason, we would be rather surprised, annoyed, or outraged at the dis-equilibrium in question and the fact that this or that is not happening the way we want it to.

[19] In principle, agents would be indifferent to the change, just as we breathe or feel sunlight today (unless, of course, we are underwater or being suffocated or in a cave).

[20] Rothbard's last period of transition (2004, p. 321) to reach the final equilibrium is in principle the setting of such automatism. However, by simultaneously facing a fully open system (its potentiality), the automatism in question cannot exist by definition.

[21] Cf. Mises (1998): "It is even out of the question to carry the imaginary construction of an evenly rotating system to its ultimate logical consequences. For it is impossible to eliminate the entrepreneur from the picture of a market economy. The various complementary factors of production cannot come together spontaneously" (p. 249).

[22] The general etymology of the word shows that it is a standard against which we measure something; in mathematical terms, it is a whole whose numerical part (the numerator) expresses some part of a given whole. In terms of meaning, a denominator is the "one who, or that which, gives a name" (Harper, Online Etymology Dictionary).

maximum, and the theoretical automatic-static/dynamic-evenly-rotated state. This total state can manifest itself at the same time in only one way: by non-action. Why? Because the agent would then have no reason to change the given state and intervene in the surrounding reality, and would be indifferent with respect to the automatic self-operating state of affairs. He would be satisfied.

Once a given state of affairs was disrupted, whereby there must be a marginally significant dis-coincidence of the agent's ideas about the state of affairs as a whole in the potentiality of that dis-coincidence (i.e., of what has yet to happen), the agent would act (intervene) to establish a new individual equilibrium. The loss of the illustrative state of the maximum therefore also provides us with the characteristics of a marginal change in individual utility. The minimum of utility, as the unit of change in this total utility, is thus some quantum associated with the establishment of the state of the maximum.

From this we may imply that the agent either acts—determines some new state towards the state of the individual equilibrium; further, in the case of reaching the equilibrium, enjoys a state of satisfaction, which comes about by the agent acting to set the automatic mode of running everything—or must submit to the automatic mode, which is determined by reality. In that state, the self-actualization of the factuality and counter-factuality of reality would take place in coincidence with man's conception of reality.

This (automatic) maximum has two more parameters: a) the agent in a given state is aware that he cannot realistically affect something in the context of its knowledge; for example, it can probably never change the arrow of time, even if it could theoretically reach the ERE state (it is thus working with some givenness that we cannot change by knowledge[23]); and b) some changes that would automatically occur would be irrelevant to the state in question either by the nature of things or by the agent's decision (e.g., by the nature of things, the agent might not care what happens in the Andromeda galaxy or might not care whether he gets 0.99999 or 1.00001 ounces of butter).

In this (theoretical) satisfactory state, the agent would still be calculating because he would be conscious and has ideas about how something should be, but the result of calculation would still be non-action because the agent's individual factual notion would coincide with what he wants to happen. Non-doing (even if only theoretically defined) is thus not some kind of unconscious vegetative state or robotic (programmed) notion of human (automaton) functioning. It is a state of informational indifference where one does not intervene and reality behaves *relatively* as man *relatively* demands (cf. here Rothbard 1956). Man would enjoy unlimited personal freedom or divine essence. It is, therefore, just imagination but suitable for interpretation.

4 Paradigm shift of interpretation: Coincidence of the Idea of economic orientation and the state of reality

To change the paradigm of interpretation of economic events in the context of the philosophical-methodological considerations described above (i.e., in the context of subjective future-oriented internality of interpretation in multiple lines of the time continuum and in the context of some finality), it is possible to use the concept of the Idea of Economic Orientation (Pošvanc, 2024a, b). Pošvanc argues that the Idea as a mental idea is transformed into a conception of an

[23] Knowledge reveals these immutable givens; everything else is just limitations or constraints that man tries to overcome with knowledge.

individual portfolio of goods—a real state of affairs in reality; the agent thus satisfies needs in their totality and over time with a portfolio of goods.[24] The Idea is formed as a future-oriented prediction of how something ought to be, while knowledge creates the agent's idea of how to achieve that state.

The dynamic between future-oriented prediction and knowledge of how to achieve the predicted state is aptly described through the analogy of the model and map in Hayek (1952, sec. 5.33–5.49). Hayek speculates there that the mental-informational order (the mind within humans) arises from a multi-layered universal classification of neuronal stimuli, whereby the classification of stimuli becomes more general than particularistic in the higher classification layers; thus, the universal knowledge applicable to a particularistic reality is formed. This process produces a kind of "orientation map" that (any) organism can use in the actual and particularistic context of some prediction (model). In the same way that a map does not provide particularistic accurate information, so too universal knowledge does not deal with particularist states of reality. On the contrary, its universal characteristics are applicable to a wide range of particularistic situations.

In this way, Hayek is actually describing an informational concept regarding the orientation of any organism in reality. This idea encompasses information about how something ought to be (the Model). It also includes information on how to achieve this (the Map). At the same time, the organism is equipped to compare this internally constructed concept (information-idea) with what actually occurs in reality, based on its sensorimotor apparatus (the body). The comparison, while taking place internally, relies on sensorimotor and informational cues from the environment.

Applying Hayek's interpretation to a conscious agent seeking a higher state of satisfaction, at the mental level of the MODEL, a formulation of an idea of 1) how something ought to be (the ideal state of the agent's needs and the means of satisfying them) is formed; at the MAP level, an idea of 2) how the agent will get closer to what he can realistically achieve is formed (the realistic possibilities of satisfying the state of needs with some state of the portfolio of goods; a potential portfolio of goods that will become the new actually perceived portfolio is defined), and these ideas are compared against REALITY (i.e., whether the sensory perceived holistic processing of reality cues, meaning what goods and combinations of goods the agent has in reality, and potentially will have, corresponds or does not correspond based on sensory stimuli to the ideas in question).

Roughly speaking, we can say that the Idea consists of three mental ideas and an informational verification of the actual state in reality. Ideas are in the form of 1) how something ideally should be as a state of affairs, 2) how something could be as a state of affairs (potentiality), and 3) how something is (later in time will be) as a state of affairs (actuality), where these ideas correspond (later will correspond) with 4) the actual state of affairs in reality. The idea "folds over" (reflexively) into reality, where we compose a portfolio (i.e., the combination of goods and their properties that we possess).

The basic point of the interpretation is that mentality as an idea or special informational order is transposed into reality through reflection of the structure of wholes (i.e., the structural idea of needs with some portfolio vis-à-vis real goods as the real structural state of the portfolio). The mind influences reality on the basis of the reflexive coincidence of the mental shape-structure (idea as a whole) against the shape-structure in reality (portfolio as a whole). It is the

[24] Shackle (1992, p. 427) takes a similar approach to the problem, arguing that we orient ourselves towards an uncertain future through all the goods and knowledge at our disposal.

reflection of the mental-informational shape of thought/imagination (gestalt) into the shapes of reality on the basis of coincidence. The desired form-structure of the portfolio of goods as an idea relatively corresponds to or relatively resembles, on the basis of its shape (gestalt), the actual structure and combinations of goods that are realistically achieved in reality as real things.

That reality has a form-shape and that we determine the form and shape of reality need not be surprising to the reader; everything in reality has a form. But does the information-thought-idea itself have a form-shape? The Idea has a logico-linguistic structuring (see, e.g., Piaget, 1970); it is equally related to the characteristics of the whole; it has a separate organizing element, a universalizing concept that, as if in Kantian fashion, brings order to chaotic reality, which von Ehrenfels calls Gestalt-qualität or "form-quality" (Smith, 1996). But that is not all. Pošvanc (2024a) notes in Thomson (2007) that thinking about something is not constituted in any particular neuron or neural sub-region. Rather, it is formed as a network originating in different parts of the neuronal-brain structure in the context of interconnected and combined neural areas; the thought-imagination is thus the result of some neuronal-mental information network complexity.

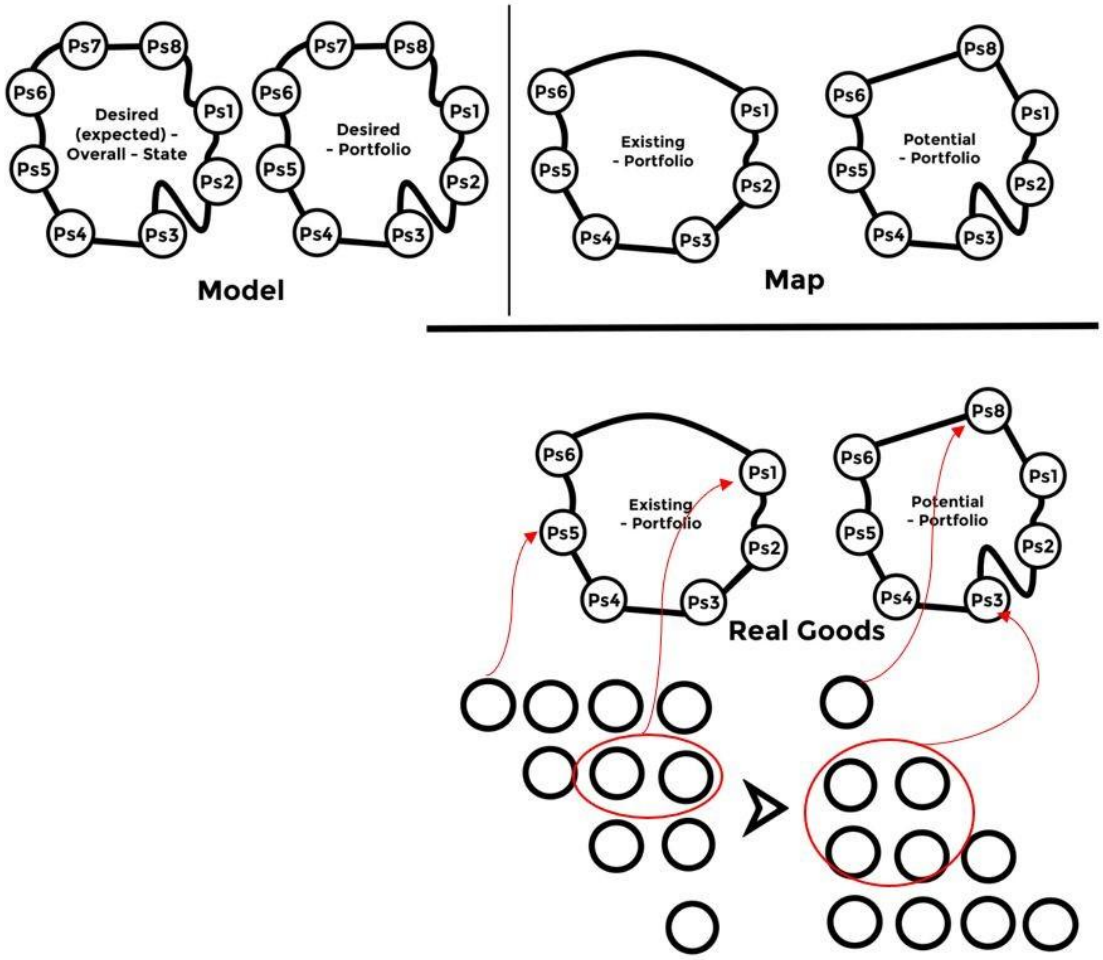
Illustratively, if we imagine the given areas as connected points (or spheres) (i.e., their interdependence and how one area conditions another and thus another and so creating a network), this produces the idea of some shape-gestalt-form or the information structure in-question (the structure emerges by these illustrative connections). The geometric shape of the neuronal-information-mental structure produced, *as a representation*, can then be anything from a simple perception of an apple up to a complex knowledge of any concept.[25]

The action is then related to the informational-mental determination of a new potential state of the portfolio corresponding to the real activity in reality that triggers the change in question. The structure of the Idea is thus reflected into the surrounding reality, whereby in reality the agent induces the physical change in question (e.g., by a new production of goods, an exchange, a combination, or just a new arrangement of goods). The physical change is a kind of informational "imposition" of some knowledge of the reality onto the reality—again by virtue of the coincidence of some normative-thought-informational form (i.e., knowledge of the manipulation of reality against the normative-informational form of reality).

The Idea of Economic Orientation is introduced in Pošvanc (2024a, b) through the following sketch representing the structure of needs, thought portfolios, and the reflection of thought structure of portfolio into reality:

[25] Thus, the line of interpretation suggests to us that cognition is actually the search for the ideal (precise, correct truthful) coincidence of form and shape of the informational representation (as thought-knowledge-model) of what we cognize (i.e., the thing-in-itself in its various empirical-informational levels). This mini-coincidence is actually a partial, slowly, evolutionarily, on the basis of the determination of the thesis—the detection of the error and its correction—produced state of the coincidence of the Absolute knowledge of the Idea and the Concept in the state of the Absolute described by Hegel.

Scheme 3:



Source: Pošvanc (2024a, b)

The scheme shows the mental-information spheres (Model and Map) on top. These are combinations of ideas as different partial states (Ps) of some overall desired state (the whole sphere); for example, Ps1 may represent all the ideas about an individual's housing conditions, Ps2 about his satiation, Ps3 about leisure activities, etc. The given Ps states are also some even more detailed combination of ideas about the partial state in question (e.g., the partial state as an idea of housing conditions may be a combination of the idea of area and location of the dwelling, its furnishing, accessibility, provision of utility networks, etc.). All together, these partial states form the overall structure of the Idea of economic orientation, which is constantly changing dynamically in the concrete form of its structure but at the same time remains some kind of structured whole (mental-informational) sphere, produced by thinking.

The top part of the diagram is illustratively indicated as a mental area (of the Map and the Model). The top left side of the diagram represents the sphere of desires and the idea of an ideal portfolio of goods by which the given desires could theoretically be fulfilled (the Model). It is thus some image of an ideal state. The top right side of the scheme represents what is potentially-actually attainable in the form of a portfolio of goods (based on knowledge)—that is, what the agent currently has and consequently what his potential portfolio state may be (what it can realistically have); this side of the idea (Map) also has a reflection into actual reality,

where the actual state means what the agent actually has and the potential state means what he can have.

The goal of the agent is to make the desired state (as a thought/idea) as similar as possible to the perceived actual state, which is a continuous unfolding of the potential state into the actual state (as a thought construct), which is at the same time reflected in reality by the actual change/movement of the form of reality and the form of the real change of the combination of goods that the agent possesses and that he uses to satisfy his needs.

Thus, there is a reflection between the desired and the attainable state (between Map and Model), the second between the unfolding of the potential to the new actual state (within the Map), and the third between the thought structures and the actual (generated) structuring of reality (between Map and reality); this is indicated in the diagram by the spheres being more or less similar in shape.

It holds that the higher the coincidence between the desired and actual-potential state of the portfolio as a thought construct with what really occurs in reality, the higher individual satisfaction is achieved and vice versa. All three reflections simultaneously imply the existence of an identity and difference in the form of a spread. They also define marginal states as the boundaries of a given form/shape (margins).

It should be clear that this interpretation is not about some preference for a higher number of goods but about the coincidence of ideas with what occurs in reality; the *causa finalis* is not about some number of goods but the pursuit of coincidence. It may therefore be the idea of maximizing the attainment of a higher number of goods, but also of a smaller number or even of the same number of goods but just differently combined, just as it may be only psychological satisfaction.

The idea of economic orientation can be thought of as an individual utility structure. The individual utility must be seen as the complete whole of this Idea—that is, as an attempt for coincidence of an ideal (desired, in principle unattainable) state against the real attainable states on the mental level, and at the same time a reflection of the whole mental dynamics of the states into the surrounding reality in the form of an individual portfolio of goods (as a result of this idea). Individual utility is meant as all of these structures as well as their manifestation in reality.

Within the coincidence of the given structures should be the origin of the human-based conception of value, which does not take on any particular agency-future-history character (the particular state of the portfolio can be any), but is derived from the coincidence of the structures in question. Simply put, what the agent ascribes value to is what produces a higher degree of coincidence of the given information structures, and vice versa.[26]

Since it is not directly about any particular state of needs and portfolio but about their coincidence, the unit of utility (individual util) must be associated precisely with a measure of deviation between some ideal state and an achievable state of satisfaction, as well as an unfolding of the potential achievable state of satisfaction into a new actual state; the former is the reference state of maximum (final state of rest), and the latter is the reference state of simple

[26] As these are information-mental-structures that persist over time, it is possible in the context of this interpretation to consider also value-stabilized individual states (see partial states—Ps in Scheme 3) whose "shape" remains more or less preserved over time, even though their particular combination may change (e.g., repeated preference for shopping, which is inter-individually similar regardless of our being fully distinct individuals; cf. with Stigler, & Becker, 1977). Why not consider also value-stabilized inter-subjective informational-structures per se, which are part of the cultural and social institutional context, such as artistic, musical, fashion, cultural-beauty, but also love or sympathy, etc.?

equilibrium (plain state of rest). The rate of deviation should then correspond to some cognitive structure that can at the same time cause a tendency towards maximizing the coincidence between the notion of needs—the notion of the actual-potential portfolio—and the actual state of the portfolio in reality.

The overall concept of utility is, of course, a dynamic phenomenon, which is statically sketched in Scheme 3 for purposes of interpretation only; the given sketched spheres can be imagined by the reader in one mental grouping with each other and as changing—dynamic according to the agent's current ideas.

If the individual shapes of this desired-potential-actual portfolio are identical at the mental level and the sensory apparatus informs us about the achieved identical grouping of goods of affairs within the reality, then the agent achieves maximal individual satisfaction (maximal utility). Conversely, if one of the outlined parts of this Idea is different from any other, a state of what Mises describes as "uneasiness" arises (cf. here Locke 1694, book XXI, esp. sec. 29 and 31-37). This can occur: a) by changing the shape of the needs (by inventing new needs, new combinations of them); b) by the ideas of how to achieve some portfolio (by new possibilities of satisfying needs based on our knowledge); or c) by changing the general state of affairs in reality.[27]

5 Principles of individual economic calculation and pricing

Principles of economic calculation and pricing must be part of the intentional internal ideas about how something should be when the agent perceives that something will not be as he wants it or that a given desired/potential state is threatened. Calculation must be future-oriented; it is a notion of potentiality to be achieved later in time. Calculation must also take place between counterfactual ideas. Only one alternative can be chosen, which then becomes the subject of action. It is a calculus about the informational determination of the structure of the state of affairs (based on knowledge). It takes the form of an idea of a state. Its purpose is the highest degree of coincidence of potentially achievable state with a desired state. The chosen alternative is enforced by the agent through the application of costs in reality, for without incurring costs, we cannot achieve desired states (see Grassl, 2017; Pošvanc, 2024a). The calculation is thus a process, conscious or automatic-learned, that leads to action (a new informational determination) or to leaving some already-set automatism running insofar as the agent evaluates the nature of the utility of the automatism in question as part of the calculation.

The fundamental question, of course, has to do with how we cardinally calculate value. This is not a trivial question. The reason is that we do not know the unit of valuation (util). However, the description of the calculation process must be value-based, given that it is part of the process of evaluation, and at the same time, the aim of the interpretation is to describe the process of calculation outside the monetary economy. In the interpretation, we have chosen not to use the common denominator of calculation in the form of a monetary unit. But even if we had allowed the assumption, it would not have made things any easier. The principles of calculation are not dependent on the concept of money; these merely specify the agents' calculations in higher

[27] The portfolio concept creates an equally convenient tool for orienting the agent within an uncertain future because it relativizes the importance of the particular future; by varying the combination of goods, the individual can reduce the importance of the particular future state, thereby relativizing the particular meaning of what will happen. Simply put, we can use the combination of goods as house-sofa-dog-fireplace-heat-wine in different combinations to satisfy different needs and thus different particular states in the future and be more satisfied than if a given person possessed only a dog or wine. The portfolio concept also allows for comparisons over time, responding appropriately to the problem of learning over time or defining economic error; see Pošvanc (2021a) for more details.

detail. Value calculus is unavoidable. The Čuhel-Mises ordinate approach is correct but, as we shall see, incomplete. The above paradigm shift in interpretation points to the use of ordinal calculus but equally suggests the existence of cardinality in its background. But let us begin with the ordinal part of calculus.

5.1 Ordinary calculation as a comparison of portfolios (wholes)

The basic notion of calculation is ordinal. It allows us to ordinally compare multiple ideas of portfolios with each other as well as over time (comparing the structure of portfolios with each other) and to select the more preferred ones when the diversity of the portfolios themselves is defined by different combinations of goods. The action is then aimed at achieving the most preferred portfolio structure. This principle is also applicable to any partial state of the portfolio idea (i.e., we can also calculate only the partial states, as in the examples of housing conditions, satiation, leisure, etc.).

What are the characteristics of the most preferred portfolio or its partial state? It is the one whose structure is closest to the ideal state. The agent perceives the difference (spread) between the ideal state and the actual-potential state. Which combination of goods and affairs in the portfolio does he choose? He chooses the one that most narrows the spread between the ideal and the actual-potential perceived state. However, and this is equally important, the agent also evaluates the realism of the given potentiality (i.e., whether it is possible to unfold the given potentiality into a new actual state of affairs). Otherwise, the narrowing of the gap will not realistically occur. In other words, the spread between the actual and potential state of the portfolio must also be taken into account in the calculation; the new (potential) state cannot be achieved at the snap of a finger.

These two spreads also define the two basic areas that are part of the Idea—the areas of individual profits and individual costs. The first spread (the difference between the ideal and the potentially achievable portfolio) implies the area of gains; the higher the coincidence of the potential state of the portfolio with the ideal, the higher the satisfaction, meaning the narrowing of the difference that the agent perceives is, in fact, the perception of individual gains. The second spread (the difference between the actual and potential portfolios) is related to what the agent must do (what costs must be applied) to reach the new potential state.

The states of the given ideas and the actual combination of goods into the portfolio that the agent possesses and their comparison with each other define equally the margins, their marginal changes, the extent of the difference of the given margins, and also the state of maximization of their coincidence. The coincidence of given boundaries is always relative; this is due to the fact that we are dealing with structures that are wholes, which, by the nature of things, have universal characteristics, and thus their state is always relative—the particulars may be different, but the whole remains preserved.

If the given boundaries were in (absolute) exact agreement, this would be a congruence of the given structures. The agent is in principle striving for congruence, but this is only possible in a fully automatic-causal mode—that is, in a mode where the determination of the event-based line of the state of affairs would be realized in such a way that the agent would not have to be alert to the informational determination in question, neither in the details defined by him nor in the change of his behavior and in the change of his particularistic preferences and desires (the ERE condition described above).

A partial state of such congruence is possible in the case of the institutionalization of an informational determination, which subsequently happens against the background of action and is not perceived by the agent at all—it is taken as a fact (e.g., the arrow of time given by nature,

or the universal validity of property rights as domain of humans). In principle, we do not intentionally calculate with these givens; we take them as givens. More precisely, these givens are automatically composed into the background of the calculative processes; we do not have them in mind when calculating whether we can change the course of time, and we perform calculations automatically in the context of the legal system (unless the agent is a thief, of course).

So, in the interpretation we have the whole, its composition of parts, determined boundaries and their ranges, various counterfactual states, spreads (profit-cost domain), maximal states of coincidence (which are also dynamic), congruent institutionalized sub-structures as givens (e.g., property rights), ordinal choice/preference, and unfolding of a given choice in an action (informational determination). So, to ordinarily compare outcome and preferential action is quite simple. We can proceed to describe the course of cardinal calculus and attempt to define the unit of utility, in this case as a preliminary definition.

5.2 The problem of the util and cardinal calculation

Let us start with a simplified idea. If we think about calculation processes, they are mental. Thus, we are working with representations. A portfolio, or its partial state, is simultaneously constructed by goods. We calculate at the same time with the meaning of the goods related to the construction of the portfolio or its parts. The potential constructions of portfolios are, as we have said, then compared ordinally (as wholes). The preference system is thus preserved in the context of the Čuhel-Mises ordinal evaluation. At the same time, individual portfolios differ in their combinations of goods, which generates cardinal changes in the portfolios or their partial states. Thus, what makes the difference between ordinal representations of portfolios' states (or partial states) is their cardinal composition (i.e., the form of the structure of the portfolios per se). But this simplified notion is not the full picture—it skims the surface of the problem and can only serve as an introduction to a more detailed description.

If we imagine a calculation, it is a mental process. The agent seeks to maximize his satisfaction by action as intervention. When we calculate, we consider not only the number of goods but also their quality, the combination of their properties and their interrelation, and their inclusion in the already existing state of affairs at our disposal. The calculation is also some kind of calculation with some units, but our units are not numbers of goods or properties and combinations of them.

My reasoning about the util is therefore as follows. If by some miracle we could achieve absolute individual equilibrium (i.e., the desired-ideal state of the portfolio coincided with the potentially attainable one), and the latter was also (automatically) the actual state, the agent would not act—he would not tend to re-determine anything, because everything would be the way he wants it to be. However, he would calculate because he would still be a conscious agent defining desirable states. These would "just be" automatically realized.

In a given theoretical state, calculus would always turn out the same way—the agent would find that the desired-potential-actual states are in coincidence, he is fully satisfied, and there is no need to intervene (i.e., to look for and compare some new utility structures that would again cause a state of coincidence). At the same time, it would have to be the case that the given states automatically adapt to the agent's potentially changing desires, or the agent would have to define such states that could be automatically satisfied and not others.

This is, of course, an illustrative, unattainable idea. However, from this idea it is possible to deduce that, in a given state, the agent's utility is maximal. When will it change—decrease? When the desired-potential-actual states are not in coincidence. This change shows the limit of

the maximum, the structuration of the maximum, and consequently the degree of divergence because the difference in a given illustrative coincidence defines a reduction in utility. The latter changes by what we can consider a quantum of utility.

The question is how to define it. The problem is that the change in the portfolio itself does not tell us about the unit of the change. If we consider different ideas of structuring portfolios, we can only say that one is preferable to the other, not by how much. Would calculation in money help us in this matter? Money only expresses more precisely the boundaries and structuring of portfolios, but it does not express the util, for the utility is in the given coincidence (*causa finalis*). In other words, portfolios whose calculus and preference differ by one dollar are only exactly different by one dollar, not by one util. By means of money and valuation portfolios, the agent can only more precisely prefer one over the other.

The util itself must be a relative (percentage) unit that determines the relative (percentage) degree of coincidence between the desired-potential-actual portfolios. How can we define the util ontologically?

Given that this is a coincidence of thought states of portfolios, what increases the coincidence is some *knowledge-information structure* that is both knowledgeable and feasible, which causes the change in the coincidence sought above. At the same time, its characteristic is such that the given knowledge, when implemented in the surrounding reality, simultaneously induces the change that the agent requires and actually causes it.

We need to define an ontology for this knowledge quantum. In this area, we can take inspiration from Burgin, Mikkilineni, and Mittal (2017, p. 4), who show that knowledge has a structuration that is given by a) the domain of knowledge—the object of knowledge, b) an aspect of the domain of knowledge as an object, c) a symbol that defines the naming of the object (or a class of naming), and d) a set of values of the property on the names of the object. This is a quantum knowledge structure. However, not every knowledge structure can be the util.

The util, as the quantum of knowledge in question, must contain a set of values such that the agent assumes (ex-ante) that by implementing them, the informational determination will change such that a higher degree of coincidence between the desired-potential-actual state of the portfolio *will occur*. A given quantum may have individually different characteristics because evaluation and meaning are fully subjective. Thus, the util is a fully individual by its shape but at the same time a generalized knowledge structure.

Here, however, it must also be stressed that the given characteristics of a knowledge quantum are not merely subjective, even though the implementation of knowledge is a subjective matter. A given quantum is a combination (a) objectified characteristics and (b) intersubjective (institutionalized) characteristics, and both (a) and (b) are subjectively interpreted. In fact, an agent calculates about a given structuration by judging the objectified properties and the intersubjective characteristics and, at the same time, interpreting these characteristics subjectively.

Thus, the structure of the util is also dependent on objectified knowledge—for example, that water quenches thirst or that acid is not drinkable (or more precisely, only one time); that water, not acid, is good for watering flowers; that an orange tastes sweet and is juicy if it is ripe—as well as on intersubjective characteristics—for example, the water/orange is supplied by the supplier and the agent has to pay a price when he buys it, accepting the institutionalized system of rights; he subjectively interprets that he wants to quench his thirst or water his favorite flower, the cultivation of which brings him individual satisfaction or satisfies his craving for something juicy and sweet.

It follows that the more accurate and better the cognition of the operations of reality, the more it affects the very structuring of the util and the overall utility. Indeed, the utility calculation would look different if we knew how to manipulate time, for example, while the arrow of time is immutable and the utility calculation looks different today than it did 100 years ago. Knowledge of reality and the possibilities of manipulating it brings out completely different objectified contexts in terms of the portfolio of goods and thus a different structure of utility.

The intersubjective context, in turn, implies that individual utility will be objectively influenced by, for example, the institutional, political, or cultural-social environment. Calculation in a socialist/dictatorship environment will have a different character than in a free market/society.

It follows that a util should therefore be a specific structured knowledge that the agent believes/knows (ex-ante) will cause the desired change and unfold the potential state of the portfolio into a new current state that is also more similar to the ideal state than the state was before. The util is a mental-cognitive determination, a mental-cognitive force with respect to the surrounding reality; it is not just speculative but also an objectivized-practical structure of knowledge related to controlling the surrounding reality such that a desired marginal change of 1 quantum of util in the portfolio state causes an individually-minimally possible increase in the agent's satisfaction of the needs of the portfolio of goods.

Why is this an individually-minimally desired increase?[28] This is due to the fact that we are interested in defining the util in general, but at the same time, everyone has a particular individual utility increase defined purely subjectively. Although the agent is concerned with utility maximization, at the same time this maximization is limited by his knowledge, by constraints of reality, which the agent overcomes with new knowledge (by introducing new product), and by the givens of reality, which the agent must submit to (such as the arrow of time). Thus, the desired marginal change in coincidence of 1 util is bound by the minimum possible change that brings the agent closer to the desired state; and this is basically represented by some combination of goods the agent includes in the portfolio in question.

Cardinal calculus is, therefore, related to defining the knowledge quantum regarding how to realistically change the structure of an individual portfolio (or part of a portfolio) so that it resembles its desired state as closely as possible (in shape). What we calculate mathematically is actually the composition of the portfolio shape, the parts of which we use to satisfy our needs either directly or indirectly through exchange.

5.3 Some remarks on the (sub)theory of pricing

The posterior section is devoted to remarks on pricing theory; the aim and scope of this paper obviously do not allow for a detailed response to pricing theory. The discussion here allows us to confront "just" a similar question to the one we have also posed; namely, Inoua and Smith (2020a) write: "If everyone in the economy takes prices as given, where do these prices come from?" (p. 80). In presenting their interpretation of price formation, Inoua and Smith (2020a, b, 2023) depart from the marginalist version and subscribe to and modify Adam Smith's classical interpretation of pricing. In contrast, the interpretation presented here offers some combination of the classical and utilitarian versions.

Inoua and Smith (2020a, b, 2023) use the assumption of supply and demand in their interpretation. However, the emergence of demand-supply must be an (empirical) consequence in the interpretation, not the cause of price setting. The causes must be individual and

[28] Question set by František Chroustal; Chroustal, F. personal discussion, Vienna, (12.12.2024).

intentional. At the same time, the interpretation should have a universal character valid in the context of all competition, monopoly, and oligopoly, where competition, monopoly, or oligopoly only have an impact on the particular level of prices and not on the principle of price setting. The interpretation presented in Inoua and Smith (2020a, b) works with intentionality in the form of a "willingness to accept bid or ask price" in an agent participating in a social interaction, which is based on Adam Smith's concept of "beneficence and justice" (see Smith, 2005), which is in fact supposed to lead the agent to a "propensity to truck, barter, and exchange" (Inoua & Smith, 2020a, p. 86).

However, the question is: Why is the agent demanding or offering anything at all? Why and how does he change his willingness into a non-willingness to accept, while (and this is important) even unwillingness to accept is a correct outcome under beneficence and justice? Neither the willingness/unwillingness to accept nor the beneficence and justice simultaneously explain the very act of exchange (and the emergence of an objective reservation price). On what basis does the inclination or willingness change to pure acceptance, the act of coordination, and the eventual (empirical) outcome? These questions inevitably lead us precisely to individual utility, the rational evaluation of an agent's actions.[29]

The theory of pricing is a sub-theory of the problem of economic calculation. When setting prices from an individual point of view, the agent calculates. The phenomenon of price implies a second agent; the interaction takes place socially. Judgment of the intentions of others enters into individual calculation; these appear in the bid-ask price (here I only caution the reader that the bid-ask spread is a consequence of agents' calculation, not a cause of calculation).

Our questions are: Why does the interaction occur? How does the agent calculate price? Why does he decide to accept some bid-ask in a haggling and bargaining process, even if he originally wanted to achieve better bid-ask terms? What boundary conditions does the agent face when considering an exchange: when does the agent intend to enter an exchange, when does he continue intending to enter an exchange, and when, conversely, does he stop intending, and when is the agent indifferent to any bid-ask?

Why does agent interaction occur—how do individual demand and supply arise?

The goal of the agent in the context of the interpretation of individual utility presented here is to achieve a coincidence between the combination of desired needs and the desired-potential-actual portfolio and the reflection of that state in reality. Satisfying needs is also possible in a community through exchange. However, the latter is not necessarily guaranteed. Agents must simultaneously demonstrate (e.g., as a speech act; see, e.g., Megger & Wysocki, 2023) intentionality; this implies that agents have knowledge that the exchange provides some higher satisfaction. However, when does an agent demonstrate interest in exchange?

When he anticipates that the potentially announced exchange relatively narrows the individual spread between some thought desired-potential-actual portfolio state. This implies that what the agent is willing to offer is less important to him than what he wants to acquire in return. The agent thus defines the desired marginal state of the exchange and equally the marginal state of what he no longer wants to lose. In other words, he wants a new potential portfolio state that is more similar to the desired one, and at the same time he does not want the spread between the currently perceived and the desired portfolio state to widen too much; the latter widens relatively because the agent must also give up something in the exchange. The exchange is therefore simultaneously a *relative narrowing* and a *relative widening* of the spread among

[29] The author does not question the existence of the willingness to accept or the existence of the beneficence and justice; on the contrary, the author searches for the phenomenological causes of these phenomena.

thought portfolios, and the agent prefers to exchange if the overall spread narrows and vice versa.

If the agent does not anticipate a narrowing of the spread through exchange, then the incentive to exchange does not exist. Thus, when exchanging, he must anticipate a potential portfolio state that is more similar to the desired one. It is important to recall here that it is the achievement of some total of the portfolio in question, and therefore the spread narrowing is only relatively significant to the agent. In other words, the agent may also ignore some (even his own) potential improvements in his state, which in turn is an opportunity for more vigilant actors/entrepreneurs (cf. Kirzner, 1999; Pošvanc, 2021a). An agent can also be indifferent to the demonstrated intentions of others, and this is if he does not assume that additional exchange would narrow the spread in question in a relatively significant way.

How does the agent set the bid-ask price?

The agent determines the amount of his bid-ask spread according to the spread between the thought desired and potential portfolio and between the potential and actual portfolio. The bid or ask price is actually the marginal change in the thought portfolio as a whole, which is compared (ordinally) to another portfolio state in case the market exchange does not occur.

Thus, the agent is not calculating, in simplistic terms, by subjectively comparing what it means for him to exchange 3 apples for 10 pears. The agent is calculating what it means for him to lose 3 apples in the portfolio (or some partial state of it) and to gain 10 pears in the portfolio or partial state of it. He does not equate or compare attributed use value of apples to pears or their attributed exchange value in the exchange. Ordinarily, he is comparing what some potential portfolio without 3 apples but with 10 pears means to him with what a current portfolio of 3 apples without 10 pears means to him.

Why is he willing to get rid of just 3 apples and get just 10 pears? The agent is after a new potential portfolio that is more like the desired portfolio but also has some current portfolio. In exchange, he has to give up something at the same time. The degree of what he gives up implies an extension of spread. The agent is therefore concerned that what he gives up in turn does not cause the spread to widen too much. Thus, the structure of the potentially achieved portfolio must correspond to the accepted change in structuring expressed by the loss of 3 apples and the gain of 10 pears; it is possible that if the agent has to give up not 3 but up to 8 apples, he will prefer not to make the exchange at all, because he considers the new potential state of the portfolio to be worse overall. Hence, it demonstrates just this kind of bid-ask in the apples-to-pears market and not the other.

Why do participants out-bid and out-ask, and why does the agent accept bid-ask?

The behavior of agents in an apples-and-pears market is already intersubjectively influenced. An agent in the market finds that he does not bid for apples and demand pears himself, but let us suppose that anyone has access to the market. If his bid-ask is disadvantageous to others, and at the same time others are able to agree on different terms, the agent must either exit the market or change his business behavior. For example, he has to change the way he produces apples in order to satisfy his need by exchange and so to be more competitive (on competition as rivalry, see Oliva Cordoba 2024). The degree of change in bid-ask depends on the assessment of the state of the potential portfolio. This may mean that it is feasible for him to give up, for example, 7 apples to get even just, say, 8 pears. This is actually his bargaining position within which he is willing to engage in "haggling and bargaining." The limits of "haggling and bargaining" are determined by the assessment of the desired-potential-actual state of the portfolio.

How is the bid-ask finally accepted? It is this act that involves assessing not only what the agent wants but also what intentions are manifested in the market in the form of other bid-ask prices. In the context of others, the agent must consider what he wants to achieve and what he is willing to accept as the final price. Outbidding and out-asking are then related to the degree of narrowing and widening of his individual spreads, where he considers whether he is more satisfied with at least some exchange or none in the context of what intentions he observes from others in the market in question.

What is coordinated by prices?

The prices achieved are already the result of coordination and belong immediately to the past. So, prices per se don't coordinate anything. Agents coordinate on the basis of manifested intentions, which appear in bid-ask spreads. Coordination is actually a mutual and voluntary narrowing-widening of the individual spreads between what agents want, what they can achieve, and what they have at their disposal. If the bid-ask spread narrows in the market, we observe a higher tendency for coordination and vice versa.

In order for agents to coordinate with each other, it is necessary for them to coordinate at the level of expectations, which are then transformed into the already coordinated actions of the agents. Thus, of importance for coordination are those institutions that provide the best space for signaling agents' expectations in the form of price spreads.

Price spreads are the result of individual spreads between the desired-potential-actual portfolios, and when market price spreads are tight, agents achieve (given the circumstances and knowledge) the maximum possible individual coincidence between the desired-potential-actual portfolios. Again, the state of maximum coordination does not imply any particular state of affairs, but only that it is no longer possible (given the circumstances and knowledge) to achieve a higher degree of coordination and satisfaction of needs in the market, and vice versa.

6 Conclusion

The critical attitude towards Mises's interpretation of the principles of economic calculation based on past prices is due to the fact that Mises implements the interpretation as if along an event-based timeline, which is the result of the intentionality of the agent. This idea must inevitably face circular argumentation and infinite regress.

Changing the perspective of interpretation introduces the notion of action as a conscious informational determination of how something ought to be when an agent intervenes in the surrounding reality. Intervention is aimed at removing the anticipated less satisfactory state and attempting to replace it with another state that should (from an ex-ante perspective) be more satisfactory to the agent.

The time continuum was presented from the perspective of a) the empirical event-based line, where what happens empirically in reality is a constant unfolding of some individual potentiality into a new actualization (as a potentiality), and b) the individual perspective who creates the event-based line. The individual time continuum is represented as a streaming living present, which is at the same time composed of a permanent past-retention, primal-impression, and future-protention.

The conjunction of these three timelines shows that action is directed towards changing the future—it is the imagining of the future that influences what is happening, while it is this future orientation that ultimately causes the creation of an empirically traceable event-based line: our past. The past is not a stable point; it is factual. The time continuum is actively being created. The past is, of course, important. It provides the object of inquiry and the reference points of

change, and we define universal knowledge based on it. But the past is not determinative in economic calculation when the agent is concerned with redefining things, with change, with intervening in the course of their motion.

Interpretation in the time continuum implies equilibrium as a state of coincidence of the idea with the way something is supposed to be. The characteristic of *causa finalis* so defined has the advantage of describing no particular state; it is dependent on a coincidence dynamic between how something ought to be and whether or not it comes to be that way, whatever that may be. The final equilibrium, as the pursuit of absolute automatic coincidence, is defined as an open and dynamic (but) state.

The Idea of economic orientation creates a space for defining the internal dynamics associated with economic calculation, where it provides a denominator (individual utility), whose partial sub-changes are considered mentally (by calculation) and result in the choice of the subjectively most appropriate alternative (action). The Idea allows for guiding the interpretation of calculation in the context of value determinations.

The calculation was presented as ordinal-cardinal. At the ordinal level, the agent considers mental representations of portfolios or some partial states of portfolios (wholes) that change based on cardinal changes in the structure of these wholes while the agent prefers a more preferable whole to another.

This also led us to initial speculations about what the util is from an ontological point of view. The latter has been presented as an individual, yet universally given, knowledge structure that marginally alters the notion of some attainable portfolio whose form is attainable through action in reality.

The remarks on pricing theory are only a logical consequence of the introduced argument on the dynamics of reasoning about the desired-potential-actual portfolio of goods. Bid-ask prices arise on the basis of calculating and reasoning about the degree of narrowing-widening of the spread between the thought desired-potential-actual state of the agent's portfolio; this is also behind their dynamics and changes in the process of haggling and bargaining as well as the acceptance of the reservation price. The argument also implies that agents coordinate already at the level of individual intentions, and we are informed of the extent of this coordination in the market by the extent of price spreads displayed by the pricing system.

The interpretation presented has a number of implications that could not be presented to the reader given the already considerable scope of the work.

For example, I did not address monetary calculus, which is still based on the ordinal principle, where agents calculate mostly with a partial state of a portfolio of goods (as a whole, e.g., they set a budget for purchases for some partial state concerning housing) and where the given partial state has its (monetary) budget constraints defined, and these are determined with respect to the total (monetary) value of the agent's portfolio.

When we calculate, we are assessing whether accepting the bid price, in the context of the budget constraint, will produce the desired result for the partial state as such (as a whole). Therefore, the monetary calculation is only more accurate. The agent judges more accurately what a more and less advantageous state of affairs means for him, where he can compare potential portfolio states more accurately and define the meaning of individual utility more precisely.

I did not address the problem of calculation within socialism. Here, however, it is obvious that the agent under socialism/dictatorship does calculate, but the calculation processes must be more constrained compared to other alternatives because of the process of setting bid-ask prices,

constrained competition, or higher levels of regulations, which decrease entrepreneurship opportunities.

Another implication of the interpretation is that prices are not a coordinating condition for social affairs; they are already the result of some better or worse coordination. Rather, the causes of higher and lower coordination rates must be sought in the institutional social framework and intentions of agents.

Nor have I addressed the problem of aggregates (e.g., demand and supply or aggregation of agents' coordination within the ERE); here I will only suggest that it is not some *accumulation* or *mere combination* of individual intentions which creates the notion of aggregate, but that it must be an inter-individual informational and institutionalized structuration that persists over time and that is continuously updated by agents, and that it, therefore, appears to be self-existent.

Appendix 1: Final Cause

The *final cause* is not about some specifically defined future-history empirical outcome, a particular state of affairs of things or state of some organism, in the case of an agent of particular satisfaction, goodness, or freedom. It follows from presented interpretation that it is about the coincidence of formal (informational-logical-normic) and material-effective (empirical) causes. So, the final cause is the *tendency* of the coincidence in question—meaning here the tendency to adapt different informational-logical-normic forms to each other, as if to organize them "to fit together" within related material-effective causation. In this way, final causality is part of internal informational normativity.

In the case of a living organism and a conscious agent, it is relatively easy to imagine. For in the case of a living organism, we see a separate differentiated self-relation of the organism to inanimate nature (life as a self-relation is described, e.g., by Kant—see, e.g., Ginsborg, 2004, pp. 38–39; but also by Hegel—see, e.g., Ferrini, 2009, p. 48). This means that the living organism as a system (i.e., a self-relation differentiated from inanimate nature) informatively defines for itself, within its given possibilities and limitations, its inner uneasiness. The uneasiness is due to the informational dis-coincidence between the representational information about the organism (about itself) and the information about the empirical state of the organism's body as part of the ecological niche. That is, the information of the ecological niche, the sensory-information of the organism's body as part of the niche, and its internal interpretation by the organism do not reach coincidence first, because orders in question have a mutually "inappropriate" informational form/shape. This causes the organism to subsequently, by its possible (instinctive, pre-set) reactions, "try" to reach some state of internal equilibrium/semi-equilibrium, where its informational "idea" of its internal state is in coincidence with its empirically perceived one within the ecological niche (e.g., by finding the food provided in the ecological niche and being satiated). In doing so, it achieves a kind of plain state of rest (to use Mises' term), which means that the information forms that the organism produces about itself and information about the empirical state within the ecological niche are in coincidence. The differentiated (living) activity of the organism is thus derived from this striving for informational coincidence (final causality). In the case of an agent, so as a system of body, conscious mind, society, human-based customized reality, or environment, the final causality is a coincidence of conscious information-normic state that agents define as something that ought to be from their subjective and intersubjective perspective, with a corresponding empirical structuring of reality that, as was presented above, (automatically) takes on the character of how agents wish their reality to be.

But can we apply this definition to inanimate nature? The problem is that in inanimate nature, the formal-material-effective causality of a thing merges and appears on the empirical event-based line in its entirety. In terms of inanimate nature, it may seem that in defining the final cause (tendency to a coincidence) I am describing trivialism, claiming that form-essence (as the informational determination of a thing) is in coincidence with efficient-material empirical causality. The problem is: When is this not the case? Because it always is. Here, however, the reader should be warned that it is always so because we observe reality (as its eidos) on the empirical event-based line, which is already the result of the coordination of its potentialities, which are "only" actualized on the event-based line (i.e., a given coincidence is *also* the result of a final causality).

One interpretive strategy for finding final causality in inanimate nature is the possibility that final causality arises spontaneously in the interaction between levels and parts of reality, where one part of a level or part of reality implies another, which would implicitly create a purpose

for one over the other. However, this is a view in the context of an emergent empirical event-based line, and that view leads inevitably to circular reasoning and infinite regress. Reality, on the other hand, is precisely this empirical whole in the time continuum.

Final causality must be an internal part of the co-causation of the causalities of things and must be institutionalized within reality in the context of what ultimately happens in reality as its consequence as well. But what is in coincidence with what in this case, when formal, material, and efficient causality (and, in the background, final causality) implies *at once* the thing as such? Here one must ask at what level of interpretation this implied "at once" is meant. The answer is that it is only at the empirical event-based level, but that this is already a co-consequence of the emergence of potentiality into an (old-new) form of actuality. The potentiality of a thing is given more broadly (in a normic way) than what is eventually empirically manifested. So, the mutual coincidence of formal and material-effective empirical causality is final causality. It follows that final causality, at the level of inanimate nature, is the tendency of the coordination of potentialities in question and will manifest itself as existence per se. Final causality at the level of inanimate nature, then, manifests itself in the context of the preservation and existence of a whole—as a system or a sub-system—of reality, the potentialities of the parts of which are coordinated so that the whole is and exists over time. This creates an implicit purpose that is necessary for final causality.

Does this mean that inanimate-reality (the environment) is actually still in equilibrium? In principle, yes, but only on the event-based line. Reality always comes to (partial) equilibrium on event-based lines, a kind of plain state of rest (to use Mises' term again); that is, it is actualized to a given state—in other words, the normative determinations (potentialities) of the parts of the inanimate-nature system in question are coordinated at all its relevant levels, which manifests itself as the continued existence of the system in question.

However, it is also a state that is at the same time fully dynamic-open, which at the same time creates a complex phenomenon of change. Therefore, on the one hand, we observe a constant movement of reality, and at the same time, there is a certain normative-integral future-oriented and future-derived stability behind reality. In other words, even at the level of inanimate nature, it is about achieving coincidence among informational-logical-normic structures of things within the system in question (formal causes of things; their "design") with the corresponding empirical state of things (their material and efficient causes). Then the given relative, but automatically induced, coincidence, which signifies the formal-shaped "interplay" of the forms of the parts of the system with each other, implicitly determines from within, at the level of the whole system, what part of the system has a purpose for another part of it.

In a certain state of ideal but nevertheless relative coincidence of causes in a given system, the given system would reach a state of equilibrium, while the future-historical empirical result would have a dynamic form and the event line would still have an "open end." This is thus a definition of the state of dynamic equilibrium as some causa finalis; however, the state in question is open by its definition and can thus be overcome and further evolved.

See here also Aristotle's *Physics*, where Aristotle writes that formal and final causality coincide (see Falcon, 2023, Sect. 3, and Aristotle, *Phys*. II. 7. 198a 24-27). Aristotle provides inspiration, even though he describes the given state of coincidence of causes just in a context of the empirical event-based line. Instructive for this claim is Hegel, who implies in the Absolute the coincidence of subjective knowledge of idea and concept about the thing-in-itself with objective informational order of the Idea and the Concept of the thing-in-itself per se (see above, the end of Section 3.3).

References

Aristotle. (2008). “Aristotle's Physics.“ Translated by Waterfield Robin. Oxford University Press.

Aristotle. (2021). “Metafyzika” [Metaphysics]. Translated by Kříž, A. from translation by Christ, W., L. 1934. Nakladatelství Petr Rezek. Praha.

Bhaskar, R. (2008). “A Realist Theory of Science.” Routledge London and New York.

Biľo, Š. (2004). “The Theory of Imputation: A context of value spreads between means and ends.” Online available: http://www2.gcc.edu/dept/econ/ASSC/Papers2004/Imputation_Bilo.pdf; Accessed on January 9th, 2019.

Boccardi, E. (2019). “Change and contradiction: a criticism of the Hegelian account of motion.” DOI: 10.21452/LnA_serie_n_v01_book_seminario-logica-no-aviao-2013-2018_emiliano-boccardi_p.135-148.

Boettke, J. P. (1998). “Economic Calculation: The Austrian Contribution to Political Economy“. Advances in Austrian Economics, Vol. 5, pp. 131-158, 1998. Online available: https://ssrn.com/abstract=1531112

Burgin, M.; Mikkilineni, R.; Mittal, S. (2017). “Knowledge Processing as Structure Transformation.” Proceedings, 1, 212. https://doi.org/10.3390/IS4SI-2017-03988

Butterworth, B. (1999). “What Counts.: How Every Brain is Hardwired for Math.“ Michigan University. The Free Press.

Caplan, B. (2004). “Is socialism really “impossible”?“ Critical Review: A Journal of Politics and Society 16 (1):33-52.

Chappell, S-G. (2024). "Plato on Knowledge in the Theaetetus", The Stanford Encyclopedia of Philosophy (Fall Edition), Edward N. Zalta & Uri Nodelman (eds.), URL = <https://plato.stanford.edu/archives/fall2024/entries/plato-theaetetus/>.

Davidson, D. (1963). “Actions, reasons, and causes. In: Essays on actions and events.” Oxford University Press, Oxford.

Dekker E. and Remic B. (2024). “Hayek’s extended mind: on the (im)possibility of Austrian behavioral economics.” Journal of Institutional Economics 20, e19, 1–19. https://doi.org/10.1017/S1744137424000055

Einzig, P. (2014). “Primitive Money: In its Ethnological, Historical and Economic Aspects.” Pergamon Publisher.

Engliš, K. (1930). “Teleologie jako forma vědeckého poznání.” [Teleology as the form scientific knowledge]. Praha: F. Topič

Eshelman, L. (1993). “Ludwig von Mises on Principle.” The Review of Austrian Economics Vol. 6, No. 2. Online available: https://mises.org/library/ludwig-von-mises-principle

Falcon, A. (2023). "Aristotle on Causality", The Stanford Encyclopedia of Philosophy (Spring 2023 Edition), Edward N. Zalta & Uri Nodelman (eds.), URL = <https://plato.stanford.edu/archives/spr2023/entries/aristotle-causality/>.

Ferrini, C. (2009). “From geological to animal nature in Hegel's Idea of life.” Hegel-Studien 44:45-93.

Fine, G. (1984). “Separation.” Oxford Studies in Ancient Philosophy, 2. repr in Fine (ed.). Plato on Knowledge and Forms: Selected Essays. Oxford: Clarendon

Fleetwood, S. (1996). “Order without Equilibrium: A Critical Realist Interpretation of Hayek’s Notion of Spontaneous Order.” Cambridge Journal of Economics, vol. 20, no. 6, pp. 729–47. JSTOR, http://www.jstor.org/stable/23599833. Accessed 10 April 2024.

Ginsborg, H. (2004). “Two Kinds of Mechanical Inexplicability in Kant and Aristotle”, Journal of the History of Philosophy, 42(1): 33–65. Doi: 10.1353/hph.2004.0005.

Graeber, D. (2011). “Debt. The First 5000 Years.” Melville House.

Grassl, W. (2017). “Toward a Unified Theory of Value: From Austrian Economics to Austrian Philosophy.” Axiomathes 27: 531-559.

Gunning, P. (1989). “Mises on the Evenly Rotating Economy.” Review of Austrian Economics, 3, pp. 123-122. Online available: https://mises.org/library/mises-evenly-rotating-economy

Gunning, P. (August 27th, 2001). “The Praxeological Concept of Equilibrium.” Working paper. Online available: http://www.nomadpress.com/gunning/subjecti/workpape/log_equi.htm. Accessed on December 29th, 2024.

Hales, D. S. (1991). “The Recurring Problem of the Third Man.” Auslegung 17 (1):67-80.

Harper, D. "Online Etymology Dictionary". Ohio University. Online available: https://www.etymonline.com/word/denominator#etymonline_v_29510. Accessed on January 6th 2025.

Harris, E. E. (1983). “An Interpretation of the Logic of Hegel”. Lanham, MD: University Press of America.

Hayek, A. F. (1945). “The Use of Knowledge in Society.” The American Economic Review, Vol. 35, No. 4. pp. 519-530. https://www.econlib.org/library/Essays/hykKnw.html?chapter_num=1#book-reader

Hayek, A. F. (1952). “The Sensory Order”. Kessinger Publishing, LLC.

Hayek, A. F. (1998). “Law, Legislation and Liberty”. Routledge. London.

Hegel, W. F. G. (1986). “Logika ako veda I a II.” [Logic as a science I and II.] Pravda. Bratislava; translated by Münz Teodor from German original: Hegel, W. F. Georg. 1932. Wissenschaft der Logik. Lasson. Berlin.

Hegel, W.F. G. (1977). “Phenomenology of Spirit.” Translated by A. V. Miller, with analysis of the text and foreword by J. N. Findlay. Translation has been made from the fifth edition, edited by J. Hoffmeister, Philosophische Bibliothek Band 114. Felix Meiner Verlag, Hamburg, 1952. Oxford University Press. Oxford, New York, Toronto, Melbourne.

Hegel, W.F. G. (2019). “Fenomenologie ducha.” [Phenomenology of Spirit]. From the German original Meiner Felix. Phanomenologie des Geistes. Hamburg. 1980. Translated by Jan Kuneš and Milan Sobotka. Filozofický ústav AV ČR. Praha.

Heidegger, M. (1929). “What is metaphysics?” Translated by Miles Groth. Online: <https://wagner.edu/psychology/files/2013/01/Heidegger-What-Is-Metaphysics-Translation-GROTH.pdf.> Accessed on November 6th 2022.

Heidegger, M. (1943). “Postscript to "What is metaphysics"” Translated by Miles Groth. Online: <https://wagner.edu/psychology/files/2013/01/Heidegger-What-Is-Metaphysics-Translation-GROTH.pdf.> Accessed on November 6th 2022.

Herbener, M. J. (1991). “Ludwig von Mises and the Austrian School of Economics.” The Review of Austrian Economics, Vol. 5, No. 2: 33-50.

Herbener, M. J. (1996). “Calculation and the Question of Arithmetic.” The Review of Austrian Economics Vol. 9, No. l: 151-62

Heyne, P., Boettke, J. P., Prychitko, L. D. (2013). “The Economic Way of Thinking.” (13th ed.) Pearson Education.

Hoppe, H. H. (1996). "Socialism: A Property or Knowledge Problem?" Review of Austrian Economics 9, no. 1. pp. 147–54. https://mises.org/library/socialism-property-or-knowledge-problem

Hoppe, H. H. (1997). “On certainty and uncertainty, or: How rational can our expectations be?”. Rev Austrian Econ 10, 49–78. https://doi.org/10.1007/BF02538143

Hoppe, H. H. (2010). “A Theory of Socialism and Capitalism.” Kluwer Academic Publishers. Auburn, AL: Mises Institute. https://mises.org/library/theory-socialism-and-capitalism-0

Hoppe, H. H., with Hülsmann, G., J. and Block, E., W. (1998). “Against Fiduciary Media.” Quarterly Journal of Austrian Economics. Volume 1, No. 1. https://mises.org/library/against-fiduciary-media-0

Houlgate, S. (2005). “An Introduction to Hegel: Freedom, Truth and History.” Blackwell Publishing; 2nd Edition. USA, UK, Australia.

Hudík, M. (2007). “František Čuhel (1862-1914).” New Perspectives on Political Economy. Volume 3, Number 1, 2007, pp. 15 – 25

Huerta de Soto, J. (2012). “Socializmus, ekonomická kalkulácia a podnikanie.” [Socialism, Economic Calculation and Entrepreneurship]. Bratislava: Konzervatívny Inštitút M. R. Štefánika.

Huggett, N. (2024). "Zeno’s Paradoxes", The Stanford Encyclopedia of Philosophy (Fall Edition), Edward N. Zalta & Uri Nodelman (eds.), URL = <https://plato.stanford.edu/archives/fall2024/entries/paradox-zeno/>.

Hülsmann, G. J. (2003). “Introduction to the third edition: From value theory to praxeology.” In Mises, Ludwig. 2003. Epistemological Problems of Economics. New York: New York University Press. Third edition. Auburn, AL: Mises Institute. https://mises.org/library/epistemological-problems-economics

Hülsmann, G. J. (1997). “Knowledge, Judgment, and the Use of Property.” Review of Austrian Economics, 10 (1), pp. 23-48. Online available: https://mises.org/library/knowledge-judgment-and-use-property

Hülsmann, G. J. (2000). “A realist approach to equilibrium analysis.” Quart J Austrian Econ 3, 3–51. https://doi.org/10.1007/s12113-000-1025-1

Hülsmann, G. J. (2002). “A theory of interest.” Quart J Austrian Econ 5, 77–110. https://doi.org/10.1007/s12113-002-1007-6

Hülsmann, G. J. (2003). "Facts and Counterfactuals in Economic Law." Journal of Libertarian Studies 17, No. 1. pp. 57–102. https://mises.org/library/facts-and-counterfactuals-economic-law-1

Hülsmann, G. J. (2007). “Mises: The Last Knight of Liberalism“. Auburn, AL.: Mises Institute. https://mises.org/library/mises-last-knight-liberalism-0

Inoua, M. S. and Smith, L. V. (2020a). “Classical Economics: Lost and Found.” The Independent Review, 25(1), 79-90. Online available: https://www.independent.org/publications/tir/article.asp?id=1493

Inoua, M. S. and Smith, L. V. (2020b). “Classical versus neoclassical equilibrium discovery processes in market supply and demand theory.” ESI Working Paper 20-19. Online available: https://digitalcommons.chapman.edu/esi_working_papers/314/

Inoua, M. S. and Smith, L. V. (2023). “Adam Smith’s Theory of Value: A Reappraisal of Classical Price Discovery”. Online available: https://arxiv.org/abs/2307.00412

Kinsela, S. (2016). “The Great Mises-Hayek Dehomogenization / Economic Calculation Debate.” Article. February 8. http://www.stephankinsella.com/2016/02/the-great-mises-hayek-dehomogenizationeconomic-calculation-debate. Accessed on 17.12.2024.

Kirzner, I. (1988). “The Economic Calculation Debate: Lessons for Austrians.” The Review of Austrian Economics Vol. 2. https://mises.org/library/economic-calculation-debate-lessons-austrians

Kirzner, I. (1999). “Creativity and/or Alertness: A Reconsideration of the Schumpeterian Entrepreneur.” The Review of Austrian Economics Volume 11, pages5–17.

Kraut, R. (2022). "Plato", The Stanford Encyclopedia of Philosophy (Spring 2022 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/spr2022/entries/plato/>.

Kronen, J. D., Menssen, S., and Sullivan, T. D. (2000). “The Problem of the Continuant: Aquinas and Suárez on Prime Matter and Substantial Generation.” The Review of Metaphysics, 53(4), 863–885. http://www.jstor.org/stable/20131445

Krummel, W. M. J. (2018). “On (the) nothing: Heidegger and Nishida.” Cont Philos Rev 51, 239–268. <https://doi.org/10.1007/s11007-017-9419-3>

Lavoie, D. (1981). "Critique of the Standard Account of the Socialist Calculation Debate." Journal of Libertarian Studies 5, No.1. pp. 41–87. https://mises.org/library/critique-standard-account-socialist-calculation-debate-0

Locke, J. (1694). “An essay concerning human understanding.” LONDON:

Printed by Eliz. Holt, for Thomas Basset, at the George in Fleet Street, near St. Dunstan’s Church. The Project Gutenberg e-book 10615. Online available: https://www.gutenberg.org/files/10615/10615-h/10615-h.htm. Accessed on January 3rd 2025.

Megger, D. and Wysocki, I. (2023). “Coercion, Voluntary Exchange, and the Austrian School of Economics.” Synthese 201:8. https://doi.org/10.1007/s11229-022-04005-1.

Menger, C. (2007). “Principles of Economics.” James Dingwall and Bert F. Hoselitz, trans., New York: The Free Press, 1950. Online edition, Auburn, AL: Mises Institute. https://cdn.mises.org/Principles%20of%20Economics_5.pdf

Mises, L. (1953). “The Theory of Money and Credit.” New Haven: Yale University Press. Online available: http://www.econlib.org/library/Mises/msT3.html

Mises, L. (1976). "Epistemological Problems of Economics." Translated by George Reisman. German edition 1933; first English edition, 1960; Bettina Bien Greaves gave her permission for this online edition based on the 1976 edition, New York: New York University Press. Online available: https://mises.org/library/epistemological-problems-economics

Mises, L. (1990). "Economic Calculation in the Socialist Commonwealth." In Collectivist Economic Planning, Friedrich A. Hayek, ed. Clifton, NJ: Kelley Publishing, 1975, pp. 87-130, and Auburn, AL: Mises Institute. Online available: https://mises.org/library/economic-calculation-socialist-commonwealth/html

Mises, L. (1998). "Human Action." Scholar edition. Auburn, Ala.: Ludwig Von Mises Institute. Online available: https://mises.org/library/human-action-0/html/pp/663

Moscati, I. (2019). "Measuring Utility. From the Marginal Revolution to Behavioral Economics." Oxford University Press.

Nozick, R. (1977). "On Austrian Methodology," Synthese. Vol. 36, No. 3, Mathematical Methods of the Social Sciences, Part II (Nov. 1977), pp. 353-392. https://www.jstor.org/stable/20115233

Oliva Cordoba, M. (2017). "Uneasiness and Scarcity: An Analytic Approach Towards Ludwig von Mises's Praxeology." Axiomathes 27 (5):521-529.

Oliva Cordoba, M. (2024) "On the philosophy and logic of human action: A Neo-Austrian contribution to the methodology of the social sciences", Philosophical Problems in Science (Zagadnienia Filozoficzne w Nauce), (76), pp. 107–150. doi: 10.59203/zfn.76.681.

Packard, M. (2020). "Autarkic Entrepreneurship," Quarterly Journal of Austrian Economics 23, nos. 3/4: 390–426.

Pavlík, J. (1999). "About the Spontaneous Emergence of the Norms of Distributive Justice and Catallactic Rules." E-Logos – Electronic Journal for Philosophy, ISSN 1211-0442. Online available: https://e-logos.vse.cz/artkey/elg-199901-0023_on-the-spontaneous-emergence-of-the-norms-of-distributive-justice-and-the-catallactic-rules.php

Pavlík, J. (2004). "F. A. Hayek a teorie spontánního řádu." [F. A. Hayek and the theory of spontaneous order]. 1. vyd. Praha : Professional Publishing. Praha.

Pavlík, J. (2006). „Austrian Economics and the Problems of Apriorism." E-Logos – Electronic Journal for Philosophy. Vol. 13, pp. 1–73. ISSN 1211-0442. Online available: https://elogos.vse.cz/artkey/elg-200601-0005_Austrian-Economics-and-the-Problems-of-Apriorism.php.

Pavlík, J. (2010). "Spontání geneze jazyka." [Spontaneous Genesis of Language]. Professional Publishing. Praha.

Piaget, J. (1970). "Structuralism." Translated and edited by Chaninah Maschler. Basic Books, Inc. Publishers New York.

Plato. "Parmenides." Translated by Benjamin Jowett. Online available: http://classics.mit.edu/Plato/parmenides.html. Accessed on: December 27th 2024.

Plato. "The Republic." Translated by Benjamin Jowett. Online available: https://www.gutenberg.org/files/1497/1497-h/1497-h.htm. Accessed on: December 27th 2024.

Plato. "Theaetetus." Translated by Benjamin Jowett. Online available: https://www.gutenberg.org/files/1497/1497-h/1497-h.htm. Accessed on: December 27th 2024.

Popper, K. (1975). "Objective Knowledge. An Evolutionary Approach." Oxford University Press. Ely House, London.

Pošvanc, M. (2019). "Evolutionary possibilities of the emergence of economic calculation and money. The problem of the impossibility of socialism." Working paper. Online available: https://www.researchgate.net/publication/334084336_Evolutionary_possibilities_of_the_emergence_of_economic_calculation_and_money_The_problem_of_the_impossibility_of_socialism. Accessed on February 16th 2022.

Pošvanc, M. (2021a). "The Evolutionary Invisible Hand. The Problem of Rational Decision-Making and Social Ordering over Time." Palgrave Studies in Classical Liberalism. Palgrave Macmillan Cham. DOI: https://doi.org/10.1007/978-3-030-71800-8

Pošvanc, M. (2021b). "Two Problems of Regression Theorem." New Perspectives on Political Economy. Vol. 17. No.2.; the Journal is not online anymore. Online available:

https://www.researchgate.net/publication/353261432_Two_Problems_of_Regression_Theorem. Accessed 23 March 2024.

Pošvanc, M. (2024a). “The Problem of Cost. A Proposal for a Phenomenologically-based Synthesis.” Cosmos + Taxis. Vol.12. Issue 7+8. Online available: https://cosmosandtaxis.org/ct-1278/

Pošvanc, M. (2024b) “The law of diminishing marginal utility as law of mental order-ness”, Philosophical Problems in Science (Zagadnienia Filozoficzne w Nauce), (76), pp. 317–358. doi: 10.59203/zfn.76.601.

Rickless, C. S. (2007). “Plato’s Forms in Transition: A Reading of the Parmenides.” Cambridge: Cambridge University Press.

Rickless, C. S. (2020). "Plato’s Parmenides", The Stanford Encyclopedia of Philosophy. (Spring Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/spr2020/entries/plato-parmenides/>.

Rosen, S. (2013). “The Idea of Hegel's "Science of Logic".” University of Chicago Press.

Rothbard, N. M. (1956). “Toward a Reconstruction of Utility and Welfare Economics.” Online available: https://cdn.mises.org/Toward%20a%20Reconstruction%20of%20Utility%20and%20Welfare%20Economics_3.pdf

Rothbard, N. M. (1991). "The End of Socialism and the Calculation Debate Revisited," Review of Austrian Economics 5, no. 2 (1991): 51–76. https://mises.org/library/end-socialism-and-calculation-debate-revisited-0

Rothbard, N. M. (2004). “Man, Economy, and State.” Auburn, AL.: Mises Institute. Online available: https://mises.org/library/man-economy-and-state-power-and-market

Sachs, J. (2005). “Aristotle - motion and its place in nature.” Internet Encyclopedia of Philosophy.

Salerno, T. J. (1990a). "Ludwig von Mises as Social Rationalist," Quarterly Journal of Austrian Economics 4. pp. 26–54. https://mises.org/library/ludwig-von-mises-social-rationalist

Salerno, T. J. (1990b). “Postscript. Why a Socialist Economy is “Impossible”.” In Mises, Ludwig. 1990. Economic Calculation in the Socialist Commonwealth. Auburn, AL: Mises Institute. https://mises.org/library/economic-calculation-socialist-commonwealth/html

Salerno, T. J. (1993). “Mises and Hayek Dehomogenized.” Review of Austrian Economics, 6(2), pp. 113-148. https://mises.org/library/mises-and-hayek-dehomogenized

Salerno, T. J. (1994). “Reply to Leland B. Yeager on Mises and Hayek on Calculation and Knowledge.” Review of Austrian Economics, 7(2), pp. 111-126. https://mises.org/library/reply-leland-b-yeager-mises-and-hayek-calculation-and-knowledge

Samuelson, P. A., Nordhaus, D. W. (2020). “Economics.“ (20th ed.), McGraw-Hill.

Sartre, P. J. (1969). “Being and Nothingness.“ trans. H. E. Barnes, New York: Washington Square Press.

Shackle, L. S. G. (1992). “Epistemics and Economics: A Critique of Economic Doctrines.” Routledge.

Sheffler, D. T. (2024, June 14). “The Language of the Forms.” Essay. Available online: https://www.dtsheffler.com/notebook/2024-06-14-the-language-of-the-forms. Accessed on December 27th 2024.

Silverman, A. (2022). "Plato’s Middle Period Metaphysics and Epistemology", The Stanford Encyclopedia of Philosophy (Fall 2022 Edition), Edward N. Zalta & Uri Nodelman (eds.), URL = <https://plato.stanford.edu/archives/fall2022/entries/plato-metaphysics/>.

Smart, W. (1931). “An Introduction to the Theory of Value.” NY: McMillan. https://mises.org/library/introduction-theory-value

Smith, A. (2005). “Teorie mravních citů.” [Theory of moral sentiments]. Česká předmluva Jiří Schwarz a Ján Pavlík; český doslov Ján Pavlík ; český překlad Hana a Vladimír Rogalewiczovi ... et al. [Czech preface by Jiří Schwarz and Ján Pavlík; Czech afterword by Ján Pavlík ; Czech translation by Hana and Vladimír Rogalewicz ... et al.]. Liberální institut, 2005. Praha. ISBN: 8086389391.

Smith, B. (1996). “Austrian Philosophy. The Legacy of Franz Brentano.” Open Court Publishing Company. Chicago and LaSalle, Illinois. ISBN: 0812693078

Stigler, G. J. & Becker, G. S. (1977). De Gustibus Non Est Disputandum. The American Economic Review, 67(2), 76–90. http://www.jstor.org/stable/1807222

Symington, P. (2020). “Powerful Logic: Prime Matter as Principle of Individuation and Pure Potency.” Review of Metaphysics 73 (3):495-529.

Tabak, M. (2015). “Plato’s Parmenides Reconsidered.” New York: Palgrave Macmillan.

Thompson, E. (2007). “Mind in life: Biology, phenomenology, and the sciences of mind.” Belknap Press/Harvard University Press.

Vaughan, T. C. (1943). "First Matter in the Philosophy of Suarez" Master's Theses. 413. Online available: https://ecommons.luc.edu/luc_theses/413

Vezina, B. (2007). “Universals and Particulars: Aristotle's Ontological Theory and Criticism of the Platonic Forms.” Undergraduate Review, 3, 101-103. Online available: https://vc.bridgew.edu/undergrad_rev/vol3/iss1/16

Wikipedia contributors, "Plato's unwritten doctrines," Wikipedia, The Free Encyclopedia, https://en.wikipedia.org/w/index.php?title=Plato%27s_unwritten_doctrines&oldid=1259724005. Accessed on December 27th 2024.

Wilhelmsson, J. (2023). “Separation in Plato's Phaedo.” Uppsala University. Department of Philosophy. Bachelor’s thesis. Online available: https://www.diva-portal.org/smash/get/diva2:1830756/FULLTEXT01.pdf. Accessed on: December 27th 2024.

Yeager, B. L. (1994). “Mises and Hayek And Calculation and Knowledge.” The Review of Austrian Economics Vol. 7, No. 2. https://mises.org/library/mises-and-hayek-and-calculation-and-knowledge

Yeager, B. L. (1997). “Calculation and Knowledge: Let's Write Finis.” Review of Austrian Economics 10(1), pp. 133-36. https://mises.org/library/calculation-and-knowledge-lets-write-finis