The Problem of Cost. A Proposal for a Phenomenologically-based Synthesis

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Abstract: I am critical of the absence of a coherent theory of costs. I criticize existing cost concepts that define cost externally, through an objectified phenomenon (input price, scarcity of goods, the value/utility of the alternative which is forgone or sacrificed) and similar Böhm-Bawerk´s attempts derived from the value of a marginal product. The critique of the opportunity costs concept, which are regarded as an agent´s economic costs regardless of the fact that they are forever lost in the alternative course of history, is under scrutiny as well.

The initial proposal for a modification of the cost theory is presented. The proposal is based on the introduction of the concept of individual utility as a mental structure, called an Idea of Economic Orientation. Agent defines how something should be desirable as well as possible, and thus creates the Idea. It is reflected in reality in the form of an agent's portfolio of goods. The individual utility is based on a structural coincidence of an Idea as a mental structure with the real economic state of affairs of an agent.

I claim that an integral part of the individual utility is the structure of cost, which is reflected in reality as one part of an agent´s portfolio of goods. The cost structure thus has its factual status (recorded by accounting operations), which is at the same time influenced by the opportunistic (counterfactual) consideration of the cost structuring; so, what is contrafactual shapes the factual. The proposal thus enables the synthesis of some vital elements of previous cost theories.

Keywords: Cost, Opportunity cost, Theory of subjective value, Idea of Economic Orientation

I. INTRODUCTION

"What are costs?" The answer will depend on who you ask. Any "practitioner", i.e., an accountant, a business economist, and/or a layman, views cost in the production sense of the expenditure of some good (*mutatis mutandis* a monetary unit) in order to achieve a desired result.

Economists add, in a quite unprecedented agreement, that the above view doesn't describe total economic costs, but only production costs, and one faces another kind of costs, the so-called opportunity costs (Buchanan 1969, 1991, 2008; Coase 1938; Collander 2004; Hayne, Boettke, and Prychitko 2013; Gravelle and Rees 2004; Samuelson

and Nordhaus 2020; Thirlby 1946a, b, 1952). Following this rare consensus, economists subsequently begin to differ on how to define these costs.

This is also pointed out by the recent debate triggered by Ferraro and Taylor (2005) about what do economists consider an opportunity cost (henceforth referred to as OpCs).[1] The OpCs differ in their emphasis on either the value sacrificed (but measured in monetary terms) or the good sacrificed, the consumption/production of which had to "give up" to more preferred alternative. Newman (2018) faults the approaches in question for a cardinal or objective approach to evaluation, where the OpCs are presented "alongside production tradeoffs, and the two terms are used interchangeably" (Newman 2018, p. 13), where it is not clear "whether the opportunity cost is the actor's forgone satisfaction or a quantity of goods" (Ibid., p. 14).

Austrian economists, in turn, explain that OpCs are the ascribed value of the closest alternative that an agent gives up in order to achieve more valued and preferred goal by the agent. This follows from the neo-Misesian preference scale, where we decide between alternative goals from which we choose the most preferred one (Rothbard 2004, pp. 5-6) and whose realization becomes the object of our action, relegating the other goal to the counterfactual domain. The OpCs are, therefore, future-oriented, subjective and hence immeasurable, and are constantly being discovered. However, Riesman (1998, p. 460) calls the OpCs doctrine as "obfuscation, not perception", because these costs are according to him an "imputed cost—a cost which doesn't actually exists … but which is treated as though it existed" (Ibid., p. 459).

The reader's attention on the ambiguity of cost could be also shown by the findings of empirical economic behavioral studies (see, e.g., Friedman and Neumann 1980; Larrick, Morgan, and Nisbett 1990; Larrick, Nisbett, and Morgan 1993; Van Osselaer, Alba, and Manchanda 2004; Shane et al., 2009; Spiller 2011), which suggest that people *do not always use* the OpCs concept when making decisions, whereas training and education in the field increases awareness of the importance of the concept. Of course, a critic may point to the empirical ambiguity of the research in question. However, if this is a necessary part of the decision-making process, surely the question of why people (more specifically, those who have been part of those studies) are not aware of what the economic costs actually are, is legitimate. To what extent, then, are the OpCs a part of the decision-making process, or are they merely an economic tool or "a framework for telling stories" (Polley 2012, p. 6)?

The question we should be interested in as well is why do we have multiple versions of attempts at costs at all? Is there any relationship between them? While Buchanan, Coase, and Thirlby view the OpCs as those real costs, distinct from production costs, Collander, Hayne, Boetke and Prychitko, Gravelle and Rees, Samuelson and Nordhaus suggest that production costs are not the whole picture of a person's economic situation, implying that there are some total costs that consist of production and opportunity costs. But what are these total costs? Are they a combination of production and opportunity costs? And if so, how are they connected? Thirlby (1946a, b), for example, points out that opportunity costs are ex-ante costs and production costs are ex-post in nature, i.e., they are realizations that occur after the decision. When a new choice is made, a new (real) economic cost reappears, from which the newly-constructed production cost is derived. A similar view is taken by Buchanan (1969), who uses terminology along the lines of "cost influencing and cost-influenced". So, are production costs a consequence of opportunity costs? Or are opportunity costs and production costs a part of some overall cost concept? The overall cost concept is suggested by examples that point to the existence of OpCs in economics textbooks, where economists add the OpCs to the valued direct costs. Does this mean that the agent has a coherent cost concept, but we don't know what it is, because we can measure production costs, but there is a problem with measuring the OpCs unless we conflate it with production costs as the mainstream does?

The claim that we don't have a coherent theory of costs in front of us, and that we are rather looking at some sorts of bits and pieces of theory that sometimes fit together and sometimes don't, should be obvious. The aim of this paper will be to provide an *initial phenomenological synthesis* of cost theory; *initial* in the sense of a conceptual background. The reason for a phenomenological path is that the agent's action is preceded by a mental process that has formal-phenomenological regularities. Simply put, I conceptually an-

chor the concept of cost (as part of the concept of utility) in the human mind and at the same time I show its transposition into the reality.

This will be possible by introducing the individual concept of utility, which will be presented as a mental structure of the mind (Idea of Economic Orientation) reflected in reality through the concept of a portfolio of goods. The reflection will be interpreted as the agent's effort for a coincidence of the *form* of the mental structuring (representational economic-information about reality) with the *form* of the structure of the portfolio of goods in reality. Within this framework, the individual cost structure will also be presented in the same manner.

A description of the mental regularities associated with the cost/utility concept and their mutual dynamics will subsequently allow us to provide a synthetic view of cost theory. I will also eliminate the inconsistencies of current approaches but retain their vital parts, define the factual nature of the cost structure as well as its relation to the counterfactual cost domain, and anchor cost as an apriori part of individual decision, choice, and action. I will also show its overlap with marginal utility theory and economic equilibrium in the context of the Evenly Rotating Economy (henceforth referred to as ERE).

I will proceed as follows. In the second section, I define the methodological problems associated with cost theory. In the third section, I will present the solution. Finally, I will provide a summary and some possible follow-up research.

II. MAIN PROBLEMS AND METHODOLOGICAL BACKGROUNDS OF THESE PROBLEMS

The fragmentation of the theory of costs established in the introduction is connected with the interpretation of what costs are derived from, in my opinion, and not what costs are. Within the framework of current interpretations, it is possible to trace down two methodological problems. The first is the derivation of costs from some externally given input (input price, marginal product, scarcity of goods as an objective feature of reality, the value/utility of the alternative which is forgone or lost). The second is the derivation of costs from something which is contra-factual, which is conducted either as a subjective interpretation (subjectively foregone or lost goals) or as something sacrificed, but what is scarified is, once again, externally determined, e.g., by the price of the foregone alternative, foregone value, or foregone production usability.

These two fundamental problems are intertwined in different ways in different approaches; so, it is useful to look at the problem also from the point of view of two types of schools: The mainstream and the Austrians, which can be summarized as follows:

1. The mainstream interpretation is based on an external definition of cost, whether we deal with production costs or OpCs:

The interpretation defines costs externally, through an objectified phenomenon; e.g., an input price or the existence of an independent utility/cost function, and this is so for both production costs and OpCs. Production costs are treated as money spent, input price paid, or good/money expense, or the utility loss carried by goods that the agent cannot use because the agent exchanged or spent it. The counterfactual domain of the OpCs is given as a tradeoff between two productions (potentially existing; and as such possibly measurable) or as a price, which is the value of the alternative which is forgone (Newman 2018), or as a foregone utility because of an existing objective scarcity of goods.

So, it is the absence of a purely subjective interpretation within mainstream which is the base for the Austrian-Mainstream controversy about costs; the notion of subjectivity is here only "behind the scenes", as something which is presupposed or implicit, but not as a crucial "interpretative force". The Austrian-Mainstream cost controversy is, therefore, conducted in the context of measurability, objectivity-subjectivity, and considered market alternatives, such as existing vs. the discovery/creation of those alternatives.

2. The present-time Austrian interpretation is twofold, but in any case, it is not better compared to the mainstream:

- The Austrian subjectivist version of the OpCs (treated as real subjective costs) is defined on the basis of a sacrificed goal; and this makes the interpretation purely subjective compared to the mainstream. However, it causes that costs are inferred from something that has never happened, meaning here some subjective goal that is only considered. This creates a threefold problem: a problem of comparison of costs as OpCs over time (it isn't possible to compare a foregone alternative with another foregone alternative later in time), an interpretation isn't resistant to Nozick´s (1977) criticism of incurring the cost as an OpCs from the choice and not from the preference scale (the line of the argument should be the definition of a preference scale and then choice, and not the existence of choice and then incurring some OpCs), and the third problem of what costs actually are (the problem of a void structuration of OpCs, and a non-existent factual concept and its dynamism),
- However, within Austrians, there is a branch of theorists based on Böhm-Bawerk works who equally define cost on some external assumption. This kind of interpretation lacks a solely subjective perspective. This is because costs *are not specified* as a regularity within the individual's decision-making process without an externally defined assumption; the external assumption is given in the form of price of a marginal product, which plays some limit role of cost.

The methodological background of the problem of external-objectified phenomena and of counter-factuality is worth describing in more detail.

Externally defined assumption (position of Mainstream and Böhm-Bawerk)

Suppose Alice produces oranges and Bob sells petrol (and he likes oranges), and Alice needs petrol to deliver oranges to clients. Buying gasoline for oranges is an expense for Alice if she accepts Bob's asking price. Cost is defined here as the difference between the value of using some of the oranges to obtain gasoline today versus using them later (cf. Keynes 2018, p. 62), or the loss of utility provided by the (owned or produced) oranges. If the interpretation is made in money, the cost is the money Alice spent (e.g., for petrol) in order to continue to produce oranges and to deliver them to clients. However, the interpretation leads to Alice's costs being determined by Bob's supply; mutatis mutandis, Alice determines the costs for someone to whom she supplies oranges (e.g., a café owner selling orange juice), etc., etc., round and round throughout the economic system. A change in the scarcity of a commodity (e.g., Bob produces less / more gasoline) in terms of the quantity of the supply of the commodity changes the supply of the commodity and its price, which in turn causes costs to rise or fall.

External inference and definition of costs is also unavoidable in the more market-anonymized Böhm-Bawerk method, which derives the value of costs from the value of an (anonymized) marginal product that is located somewhere in the market (Reisman 2002, p. 31). The value of cost is determined by the alternative (marginal) use of good in question in other productions; i.e., the value of the cost is expressed by the value of the marginal product that will no longer be produced because the factors of production are used to produce the last economically meaningful good in the current production.

The requirement for the existence of an external assumption—either individually historical or derived from the evaluation of others—to define the evaluation of costs derived from the value of the marginal product can be seen explicitly in Böhm-Bawerk (2002, p. 59), when he writes that we must assume "the existence of other, preceding valuations" ... which come "from the same or, more often, other people",[2] or when he mentions the example of Robinson, where he argues that we must assume "a valuation he himself must have made on a previous occasion and which he still 'knows".

Böhm-Bawerk, in other words, turns to either a historically defined cost valuation derived from an individually produced marginal product (whereby a given notion arises vis-à-vis a historical notion of some alternative individual production) or derives a cost value from the marginal product provided by other agents in the market (whereby the marginal product offered by them arises vis-à-vis the potential alternative productions considered by them). However, as Bukharin (1927, pp. 39-42, 48-54) shows, this is a circu-

lar argument. Indeed, an externally defined valuation that is expressed by nothing more than the price of a marginal product or a historically realized valuation that is known to the agent (Robinson) is already a sought-after consequence and cannot be the cause of the cost assessment. The interpretive problem is that the price or historically realized valuation is/was the *result* of an evaluation process that involves the assessment of costs and profits. To use price or an individual historical evaluation of production alternatives to explain cost is to interpret individually perceived costs/profits by individually perceived costs/profits (an argumentative circle).

In other words, if Alice's costs are defined by Bob's ask price (or the price of some related marginal product), and Bob's costs are defined by David's ask price (or the price of some related marginal product), etc., and Bob, David, and etc., set their ask price based on their individual assessment of costs and profits, we argue for Alice, Bob, David, and etc., about costs in the circle, or, as Bukharin summarizes his critique of Böhm-Bawerk; Bukharin (1927, p. 100):

> … the value of the productive commodities (production costs) is determined by the value of the product; the value of the product depends on its quantity; the quantity of the product is determined by the costs of production, or, in other words, the costs of production are determined by the costs of production.

As can be seen at the same time, the problem of costs in this interpretation is related to the quantity of goods, or scarcity, from which the value attributed to the input product/marginal product is derived as something objective. This is a *crucial problem* for an argument conducted on the basis of an externally defined cost assumption; input prices/marginal products prices and hence costs vary according to the objectively defined availability of commodities—an externally defined objective factor. However, this is a methodological flaw because the given objective characteristic of reality in the form of scarcity doesn't exist. This claim seems to be wrong because reality intuitively appears to us as scarce. The key point, however, is that it *appears* that way to us, or that we *interpret* it that way; not that the scarcity *is an objective characteristic* of it.

The scarcity isn't an objective feature of reality.[3] We don't live in the Garden of Eden, of course. The reality is what it is. However, its characteristic features, e.g., the impossibility of time inversion, or the quantity of a commodity are just sufficient conditions for the decision-making process and our perception of reality. A necessary condition is an agent's consideration. Mises (1998, pp. 13-14) reminds us that human action is aimed at eliminating uneasiness. Not the one we are currently experiencing, but the one we might experience if we do not act. For we cannot change the past and, as Shackle (1992) reminds us, the present is in the same position because it is just happening. What matters to the agent, then, is the future state she wants to achieve. What she wants to achieve is determined normatively; i.e., *how something ought to be* whereas *it is not currently so*. From this comparison, the agent infers scarcity. The scarcity is given by how something is not, and not by how something is. If something is as the agent thinks it ought to be, automatically, without the need for intervention by the agent, the agent doesn't economize the domain in question. A given domain is already the way the agent wants it to be; for the agent it is automatically given *general conditions of human welfare* (Mises 1998, p. 93).

The problem of scarcity is usually considered as an objective fact of reality. However, even in its general interpretation it is stated: "Scarcity implies limited quantities of resources to meet unlimited wants" (O'Sullivan and Sheffrin 2003, p. 4). What I am arguing is in principle just that in defining scarcity I take as a necessary condition the unlimited wants of humans that are applied to reality and therefore, we perceive it as scarce. That scarcity isn't an objective fact of reality can be demonstrated by the following example. Suppose we lived in a reality where every person would always find an apple in his hand as soon as he opens his eyes in the morning. The apple's appearance would therefore be a fact of reality. Would the apple(s) in question be scarce? The answer is related to the wishes of an agent who receives the apple, and is in no way dependent on whether or not the apple appears; indeed, it always appears in our illustrative example. If an agent wishes for only one apple a day, she will regard it as a general condition of human welfare; but if she

wishes for two apples a day, she will interpret the fact of reality in the context of scarcity, because reality is not as she wishes; and if she isn't interested in an apple for whatever reason, she may even ignore this fact of reality. We recognize scarcity by *what reality is not*, which is also a characteristic *we attribute* to reality. It is not what reality is that is crucial within the interpretation and which is its objective characteristic. In order for reality to be interpreted as scarce, in other words, we must first have some desires that cause us to want reality to be other than what it is, thereby actually creating a perception of scarcity that wasn't previously present in reality. For reality has no obligations to our demands.

Scarcity, as an external limit condition for the existence of costs given by reality, is therefore inapplicable in interpretation. The existence of costs is related to the subjective condition of how something is not and the agent demands that it be otherwise, i.e., the way she wishes it to be. This, in turn, implies a cost associated with changing the given condition and overcoming the externally defined nature of reality. Therefore, the nature of reality in the context of its quantitative and qualitative givens is only a sufficient condition for the decision process. Reality isn't scarce *per se*. It is what it is. It is humans who interpret its elements as relatively scarce with respect to the goals they set.

What we define as a normative (teleological) idea of how something should be, therefore, equally implies at the same time—dichotomously—both cost and profit. By having to change something, we equally imply economic activity without which we cannot get to that state (if we can get to that state without our intervention—then we have no reason to intervene by acting—we would be passive). As Grassl (2017, p. 12) writes, one of the fundamental insights of the Austrian economic-philosophical, post-Brentano, tradition is the insight that "benefits can be realized or obtained only at a cost to the valuer; benefits are in this sense inversely related to the costs of obtaining them". This dichotomy is unavoidable given the intentionality of our view of reality.

Any relevant conception of costs must therefore be derived from the *agent's view of reality* and economic-social processes. Its anchoring *cannot be* defined by external conditions; neither those that are the results of other agents' economic activities in economizing reality, nor those that are defined by nature itself or those that we have already experienced and that are equally the result of our economization of reality. We must seek an inner and subjective interpretation. It is the Austrian School, or part of it, that requires cost to be a wholly subjective phenomenon. However, their interpretation based on the OpCs concept faces other serious problems.

Opportunity costs—individual but counterfactually defined costs

As was already stated, the diversity of perspectives on the OpCs problem is no exception within the Austrian school. Newman (2018) points to Reisman (1998) or Braun (2014, 2016 a, b) when he explains (see also Howden 2015, 2016a, b) that both Reisman and Braun make the mistake of viewing the OpCs from an ex-post perspective. The OpCs should only be seen from an ex-ante perspective. But that is precisely the problem. I don't deny the future orientation of costs, of course, but a purely *ex-ante* guided interpretation implies that the OpCs are a kind of one-off, never repeatable and thus necessarily incomparable over time discontinuous phenomenon present in the domain of consideration, where we compare a *potential* increase in utility (a preferred—but unrealized—idea that may have led to an action) in the context of a *potentially* sacrificed utility (preferred as a second-ordered, but still only under consideration, alternative).

If so, the key question is (see also Herbener 2018) how do we actually apply costs over time? The concept of OpCs implies a one-time character related to a decision at a given moment, "here and now"; in other words, further cost decisions over time are apriori in a different economic context, and thus different alternatives are considered; in other words, the OpCs at t1 are incomparable to the OpCs at t2. So, can the OpCs be evaluated ex-post at all? Rothbard (2004), Newman (2018), Howden (2016a, b) suggest this possibility, but how to evaluate a one-time non-repeatable event that we do not even have something to compare against? Doing so isn't just a matter of establishing a denominator for comparisons over time. *The point* is that the

sacrificed value never occurred and was lost in the counterfactual domain at the moment the decision was made, and comparing nothing to nothing and even over time is a nonsense.

Braun's comment (2014, p. 33) that the OpCs concept "creates costs where they do not exist—in decisions—and neglects costs when they actually arise—in action" is therefore correct. Howden (2016a, b) defends the traditional interpretation by merely stating that decision, choice, and action require coherence, and that choice is (usually) followed by action, and that the distinction in question isn't substantive. Much more precise is Buchanan (1991), who *requires a direct association* of the OpCs *only with choice* and argues that otherwise the OpCs don't even arise.[4]

However, this direct association of OpCs only with choice is a problem pointed out by Nozick (1977, pp. 372-374). It is an *interpretive problem* related to a choice, preference scale (on the basis of which Austrians interpret the OpCs), and action. Indeed, the value scale implies that the cost of the realized choice A was some less preferred one compared to the *second* in order, alternative B. The latter is followed by, e.g., alternatives C (3rd), D (4th), etc... However, only B is an OpCs, because claiming that the cost was the sum of all the alternatives (B to N) makes no sense according to Nozick. However, to make this claim, according to Nozick, Austrians need a concept of weak preferences[5] that basically allows the existence of an independent scale and ranking B to N on a scale so that alternative B is second, C is third, D is fourth, etc... However, the concept of weak preferences is categorically rejected by Austrians, which causes them to infer the existence of an alternative opportunity B *only from choice as action* (from chosen option A), thereby merely implying the existence of B.[6] The choice A, however, is a consequence of preferential scale. The line of argument should identify first the scale, the best alternative of which is A and which is eventually realized, and the alternatives B to N ranked below it. If neo-Misesians cannot identify B as second without it being derived from A, they have no concept of cost. In the words of Nozick (Ibid., p. 374): "If the Austrians were correct in speaking of scales of values as existing only in actual choices, there could not be a particular cost of a choice."

Nozick´s correct observation can be demonstrated, e.g., by Howden (2016a, p. 183, Table 3) who provides us with this example of scale:

Table 3: Opportunity Costs

Rank	Alternative	Opportunity Cost
1st	red apple	yellow apple
2nd	yellow apple	red apple
3rd	granola bar	red apple
4th	1st reading, Braun (2014)	red apple
•	•	•
•	•	•
$(n\text{-}1)^{th}$	death	red apple
n^{th}	2nd reading, Braun (2014)	red apple

Howden shows, using the example of a tourist's scaled preferences, that in terms of the 2nd alternative (yellow apple), the 3rd alternative (granola bar), and the 4th alternative (1st reading of Braun), their inverse OpCs is only a choice as the 1st preference (red apple), whereas *the* choice itself has the opportunity cost only as the 2nd alternative (yellow apple).

Howden realizes exactly the logical error that Nozick points out. He derives the OpCs from choice. This is evident because the choice (red apple) is listed as the OpCs for all other alternatives and not only for the second one in the sequence (yellow apple). If the scale were determinative and primary, Howden should indicate in his Table that the 3rd one (granola bar) should have inverse OpCs to the red and then the yellow apple (as more preferred) as well as the 1st reading of Braun and something 5th (as less preferred). Only then he could subsequently deduce what was first, second, third, fourth, etc.. However, once he determined that to the 2nd, 3rd, 4th (and so on) preference there is an alternative choice (red apple) in the form of OpCs, then he shouldn't know whether the alternative-preference yellow apple is second, the granola bar is third, or the 1st reading of Braun fourth, unless he presupposes the first choice and subsequently adjusts the preference scale to this presupposition.

The Austrian line of reasoning related to the determination of the OpCs has no logical way to avoid the fact that it must determine first: 1) the preference scale shaping the decision and 2) then the choice must follow. The primacy of the preference scale isn't important for neo-Misesians because they are satisfied with Mises's claim (1998, p. 95) that scales have no independent existence from action. However, the primacy of scale is logically necessary *within this line of interpretation*. Otherwise, these scholars wouldn't know what is second and what is preferentially third, fourth. This is why Nozick points out that unless Austrians subscribe to the concept of weak preferences which should somehow exist outside of choice (a kind of quasi-choices between which we are indifferent and which we rank on the preference scale), *they have no theory of costs* because agents cannot logically know what is second, meaning sacrificed, and this way costs.

But can these scholars accede to the theory of weak preferences? As Block (1980) already shows, this would be an illogical step. To separate preference from choice, or to claim that preferences/quasi-choices are at first somehow weak or that we are just indifferent between them, is an illogical step which is contrary to everything that a choice means. For choice is always framed as strict, and it is linked to a particular action.

The interpretation creates a logical paradox; neo-Misesian interpretation is logical from the point of view of choice but at the same time illogical from the point of view of preference scale. This could only lead to the conclusion that it is the interpretation which is incorrect. But let's further show that even just thinking about what exactly OpCs are has its own problems. I claim that the definition of cost as the OpCs is indeed void or shapeless.

If we think about it in detail, it must lead us at least to some uncertainty about how to grasp the cost concept as the OpCs. Consider, for example, the explanation in Buchanan (1969, p. xiii):

> You face a choice. You must now decide whether to read this Preface, to read something else, to think silent thoughts, or perhaps to write a bit for yourself. The value that you place on the most attractive of these several alternatives is the cost that you must pay if you choose to read this Preface now.

Uncertainty with the definition should increase with further description:

> This value is and must remain wholly speculative. It represents what you now think the other opportunity might offer.

However, if this value is purely speculative, to what extent does it actually represent the true alternative under consideration? He continues:

> Once you have chosen to read this Preface, any chance of realizing the alternative and, hence, measuring its value, has vanished forever. Only at the moment or instant of choice is cost able to modify behavior.

Does this mean that the agent did or did not evaluate the alternative? At the very least, the agent should know that it is a less preferred target than the one he chose. But on what basis (what criteria?) did he know it was less preferred? I mean, except the answer that the lesser preference was determined subjectively. The agent had to determine the value to know it was less preferred. However, how, when it is only "wholly speculative" and "represents what you now think the other opportunity might offer" and "any chance of realizing the alternative and, hence, measuring its value, has vanished forever?"

Another of the related questions is why consider only "to read something else, to think silent thoughts, or perhaps to write a bit for yourself" as alternatives in the context of reading Buchanan's introduction? Why not something else as well? Costs are ex-ante in nature, they are in the realm of plans and expectations, and they are just what we consider. So why can't they be literally anything? For example, couldn't I have sacrificed my plan to build a time machine and a carrot-wrap-powered rocket, which would have allowed me to travel with Buchanan and Hayek at the speed of light to the Andromeda galaxy? Obviously, I made this reason up. Our knowledge and technological means don't allow us to fulfil this dream. However, I can demonstrate to my surroundings the accumulation of economic resources that I can save for a given goal, e.g., in the form of time, monetary savings, carrots, and I can claim to everyone that I need exactly these resources for the given plan, and in the end, I will decide to read Buchanan, and I will be munching carrots while I do it. So, the question is, what *exactly* have I sacrificed? Did I sacrifice "to read something else, to think silent thoughts" or my fanciful dream as well? And if it's just a dream, can dreams be costs?

Is it possible to identify any criteria for which an idea is sacrificed and how it is sacrificed, and on what basis do we consider the concept of costs as the OpCs? If we define a sacrifice as *just* something which is second as non-preferred, the concept of costs as the OpCs stays empty. For example, can we sacrifice an idea or plan that we haven't even thought of yet? And if we have thought of a plan and an idea, have we sacrificed it, and does that mean it is/was our economic cost? We can have infinite thoughts and ideas, many of which we don't even remember, many of which come as nonsensical figments of the mind, and others may be gibberish.[7]

Based on the traditional Austrian concept of the cost (as OpCs) we can only say that costs exist but, frankly speaking, Austrians don't know what the cost are; under the interpretation, there is no room for individual factual concept of costs persisting over time with the possibility of being evaluated, and their interpretation faces logical inconsistencies, and it is void.

III. PROPOSAL

The concept of cost requires a subjective approach without anchoring cost in any objectified (external) information. It is necessary to require that cost be subjectively factual and counterfactual in nature so that it can be seen as an economic regularity related to economic causality, and the theory is sufficiently universal so that it is applicable to any agent. The theory needs to be equally anchored in a time continuum, i.e., we need to be able to evaluate costs ex-post.

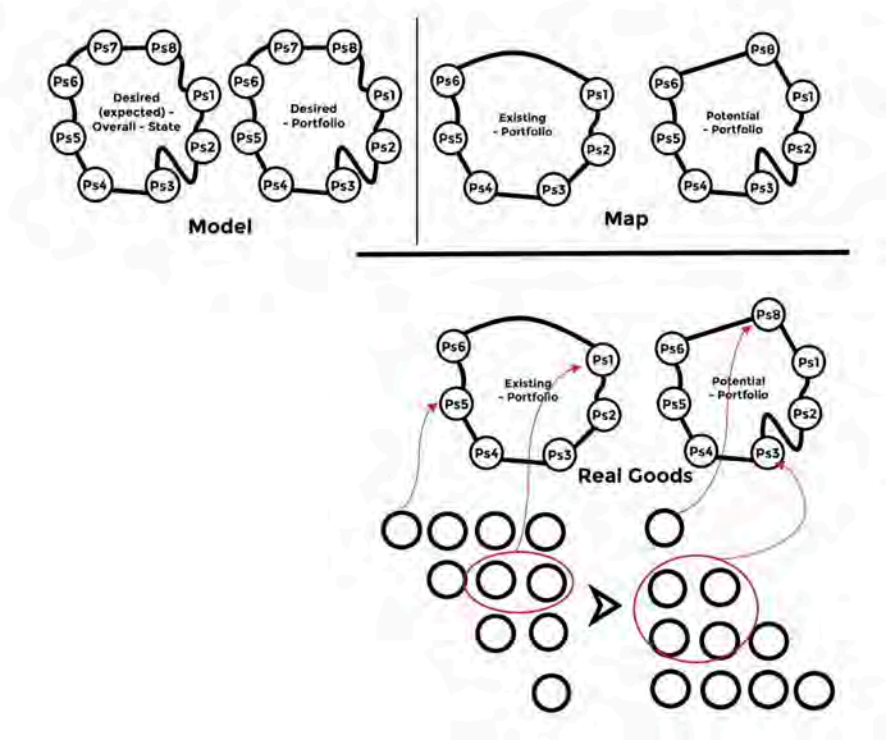
However, approaching costs as something sacrificed or foregone is problematic. The costs don't arise from some foregone utility of the good that an agent sacrifices to achieve something else; as if utility was given and we just lost it while incurring costs. The costs are related to the agent's dissatisfaction with the state of affairs. They are related to the agent's perception of how *something is not,* and an agent *wants to be something different* because the way she wants it is more satisfying to her needs. Therefore, for an agent, the costs must be useful. She must ascribe value to the costs, and they shouldn't be interpreted in terms of loss or foregone value. Their ascribed value/utility is directly related to the fact that via costs an agent will change the state of affairs; otherwise, otherwise something will happen that does not suit her and that she does not want to happen. The concept of cost must, therefore, be anchored within the concept of individual utility.

These aren't new requirements. O'Driscoll and Rizo (1996, p. 35) require for cost theory that "cost must be seen in a way that takes account of both its foundations in utility theory and its forward-looking orienta-

tion". Thus, as a first step, we need to identify an appropriate description of individual utility and its structuring.

To describe the individual utility structure, we can use Pošvanc (forthcoming) focusing on the problem of the law of diminishing marginal utility. Pošvanc provides the description of universal utility structure on a mental level which is reflected in reality by the building of an agent´s portfolio of goods. He calls the structure the *Idea of Economic Orientation*; it is an agent´s knowledge on how to meet one's own needs. The concept of Idea is constructed by Pošvanc as a combination of the Hayek's theory of mind (and his explanation of functioning of mind by analogy of a Map and a Model)[8] and Hegel's dialectical method.[9] The Idea of Economic Orientation is described by the following scheme (source Pošvanc forthcoming); the logic behind the Idea lies in what it is composed of: the desired, actual-and-potential states together defining man's economic satisfaction and the dynamics between these states:

Scheme 1:



The scheme shows the Idea of Economic Orientation as part of the general mental Map and Model (top), and its reflection into reality (bottom—real goods). The Idea is outlined as a relational coincidence between mental desired state of satisfaction as fulfilled by some desired-ideal portfolio of goods (top left); mental objects are in full coincidence. This ideal is confronted still at the mental level with the state of existing portfolio (based on sensory information from reality; i.e., what the agent actually possesses in the reality) and a potential one, which agent is capable of achieving on the basis of her economic knowledge (top right); the existing portfolio is less similar to the desired one than the potential portfolio, and both are mirror-reflected in reality.

The goods in reality (bottom part of the diagram) are grouped into the portfolio based on reflection between mental states and the corresponding reality; so, existing state is mentally changed as an idea into a potential, and consequently, the agent performs an action to create a new composition of the portfolio in reality. Each portfolio is composed of some partial states, e.g., Ps1 may represent goods that provide housing, Ps2 goods related to food, Ps3 personal hobbies, etc.

Pošvanc argues that the Idea consists of knowledge of how to satisfy a combination of needs (as a whole) through a mental idea of a portfolio of goods (as a whole). Thus, at the *mental* level, there is a structure of needs (as a mental whole) that is linked to the idea of a combination of goods (as well as a mental whole). The phenomenological construct has an overlap with noumenal reality (i.e., something outside the phenomenological world of the agent) through reflection of this structuration.

In other words, the interference into reality is realized on the basis of "shape isomorphism", when the representational structures of the mind (in the sense of cognition) and structures of reality affect each other. We discover and get to know the structuring of reality, we create a representative information structure about it, which we compare with the real perceived structures of reality (we create a cognitive order), and then we shape the reality according to our ideas. So, an agent shapes her portfolio as things from reality based on knowledge about reality—what an impartial observer could see as just a sum of things that an agent controls; an agent thinking of the structure of the portfolio of goods. She creates/perceives relations among given things and interprets a structure among them.

In other words, the hoe, the clay, the water, the fertilizer, and the tree are relationally perceived by the agent, they do not have objectively defined economizing relations, and they are composed into the portfolio by the agent who has knowledge of their possible combination within some goals.

This whole-structure, as a diverse combination of things, gives her satisfaction because it is shaped and combined as the agent wills. The overlap with reality is thus conceptual: a thought structure is applied to reality, thereby also creating for herself a sensually verifiable structure in reality (a portfolio of goods).

The use of scheme 1 (or scheme 2 below) isn't, therefore, accidental; they are ideas of the mental domain. This follows from Hayek's (1952) notion of the mental-sensory-neuronal order of the mind. The mental order is imagined here as a geometrical, independently functioning information structure that is a kind of a new order, as if "grown up" from the biological functioning of the neuronal-sensory order. Indeed, the neuronal-sensory order produces different kinds of information, where the kinds are determined by a combination of what part of the brain the information is produced in, what sensory-neuronal stimuli are used, and what kinds of information are connected to each other[10] (see the phenomenological account of brain functioning, e.g., in Thompson 2007). The information produced thus constitutes a separate mental order as a stabilized (always evoked) but also dynamically changing information structure (mind). Its semantic content and syntactic relations are, in the author's view, determined geometrically; i.e., clusters, groups, combinations or areas of information generate representational meaning by their location, relation to other structures as well as by their own geometry or shape (*gestalt*); we basically call this differentiation of knowledge.

The Idea has also its semantic meaning as well as syntactic rules. By its geometry it creates a representative information about needs and their satisfaction. The content of the Idea is, therefore, determined by the structure, the relationships between the individual properties of things/goods (knowledge about properties) and their position within this "information cluster". A schematic/geometric representation of this structure therefore illustrates in principle the same thing that should happen at the mental level (as a simplified concept, of course). This meaning is also communicated by the agent to the other members of the community. The factual form of the Idea is even accurately recorded and communicated by accounting standards.[11]

We have to imagine the Idea in a dynamic mode. The desired state (how something should be) is confronted with the actual state (how something is). The comparison of the desired and actual states generates an "internal conflict" that forces the agent to change the existing perceived state so as to move closer to the desired state using her economic knowledge. However, not everything is possible, which causes the perception to update only to the potential state; i.e., the current state at time t1 updates to the potential state, which becomes the new actual state at time t2. At the same time, what is important in the time continuum isn't only that the potentially achieved state doesn't coincide with the desired state, which inevitably implies further action, but also that the agent can change the desired state itself (which is certainly happening).

The Idea creates a structure of individual utility as a whole and in a dynamic mode; a structure of whole needs is satisfied by a structure of portfolio of goods in a time continuum. The agent ordinally prefers the desired state to the actual state. A potential state that it can get to is preferred over the actual one in case the

potential one is structurally more similar with the desired one. From the coincidence of given states is also derived the attribution of valuation to goods and their preferences; those goods that cause a higher coincidence of the structure of the portfolio are preferred over other goods.

The concept of individual utility has several characteristics that are different from traditional interpretations. Higher levels of satisfaction are not interpreted as the achievement of a higher number of goods or goals (Hudik 2020). Utility and its changes are defined as a *representational coincidence*; i.e., as a *mental idea* of how something should be versus a *mental idea* (mediated by the senses) of how something is or how something could potentially happen in reality (based on knowledge). Utility is a purely mental phenomenon; and as such is the phenomenological structure of reality. Coincidence is realized in the mind in the form of the coincidence/mismatch of mental thought structures to sensory stimuli; basically, we compare Map area with Model area in Hayekian terminology.

The presented concept of utility is equally focused on maximizing, but not the actual number of goods/plans, but at *maximizing coincidence*. The higher the degree of coincidence between the desired state and the actual/potential state occurs, the higher the individual utility/satisfaction and vice versa. So, a higher degree of satisfaction can be achieved by a higher number of goods/plans, but also by a smaller number of goods/plans and even by an equal number of goods/plans between which the agent only changes the meaning of their relations.

Utility is basically ordinal, but as such it creates cardinality: so, we prefer (desired or potential) state A as a whole to some actual state B as a whole; but structures in question are only distinguishable in the way that they are otherwise cardinally ordered in their composition. The cardinal, unitary character of the utility (compositional element) is formed against the background of the whole of the utility structure.[12,13]

Marginal utility is associated with marginal change of the structural state of the Idea as a whole; *what is marginally changed is this whole structure*. It is changed by particular and *strict actions* which *cause a marginal change of the factual state of affairs*; and of course, it must be reflected into the change of an agent´s portfolio, or more precisely, her desired but at the same time only possibly attainable state of reality. Thus, individual utility is created as what is a factual state of the Idea; a state that is both perceived and actually achieved in reality.[14]

In interpretation, we do not have a neo-Misesian infinite vertical preference scale that changes after every action. The preference scale is only two-dimensional; preferences are, "as if vertically", factual and counterfactual. Needs (as a whole) are satisfied by a portfolio of goods (as a whole). So, the factual level is thus horizontally constituted by continuously updated combinations of preferences the satisfaction of which is realized by the portfolio. This structure is constantly changing after each action, but only marginally, because at the same time some parts of it remain relatively similar, and it is still a structure over time as a whole. The counterfactual level is made up of imaginary needs interconnected by imaginary goods that an agent cannot realize either in the context of being inherently impossible (enchantment, changing the flow of time), or because of insufficient knowledge when she is still searching for or creating a solution, and/or because of insufficient resources to fulfill her desires. In scheme 1, this is shown as a mismatch between structures in question under the concept of the mental Model and Map.

Thus, preferences are given in their entirety as a developing factual-contrafactual structure in a time continuum. This means that, e.g., the need for housing satisfied through owning/renting an apartment is temporally continuous, even if I am not thinking about it. Factual preferences are dynamically actualized at each point in time into a new structure of the Idea, where their satisfaction is realized by the portfolio of goods in the time continuum. When I decide whether to spend my leisure time either by the sea or in the mountains and I choose the mountains, at that moment I am relegating the alternative "sea" to the counterfactual domain, marginally changing the Idea in the form of spending time in the mountains and acting appropriately. At the same time, however, I still have an actualized factual preference within the Idea for housing (and therefore continue to pay rent) or satisfying hunger and thirst (therefore I eat and drink everyday), which seems to be as if silent, but it is there, and in the counterfactual domain I can speculate from time to time whether I will be able to go to the sea, e.g., next summer, or I'll forget about it completely.

Definition of costs

The structuring of individual utility allows us to identify an area within which we need to look for costs, and which also allows us to define costs as a factual and time-usable concept. The dynamics behind the interpretation ensures that the actually perceived state vs. the potentially achievable state and the potentially achievable vs. desired state, in the context of their potential coincidence or mismatch, create two kinds of spreads. These spreads are mental and implicit. Basically, they are derived ideas. Once I dream about what would be "ideal" for me to possess to satisfy my needs versus what I have and what I can practically have, I can derive the difference in question.

The range of the spread between the desired and the potentially attainable portfolio thus defines the degree of perceived potential satisfaction/dissatisfaction gain/loss, and the spread between the actual state and the potentially attainable state defines the difficulty/simplicity of getting from actual into that potential state. The first spread defines the degree of potential individual satisfaction (the gain/loss), and the second spread indicates the range of costs to narrow the difference; and it is in this area that we need to describe the structure of the costs first as a mental phenomenon and then as its outcome in reality in the form of a suitable combination of goods/actions we call cost.

Costs are created factually based on knowledge defining the processes involved in an individual's change from an actual to a potential state of satisfaction. This knowledge is reflected into the structure of goods/actions which is used by the agent to bridge (eliminate the difference) the currently perceived state of the portfolio and the potential state an agent *can* achieve (not wants to achieve!).

Here it is appropriate to respond directly to a question from one of the reviewers as to whether we should be looking for costs between the actual and the desired state rather than between the actual and potentially achievable state. This is an instructive question. The potential state will always become the new actual state later in time. A potential state is in principle an update of an older actual state (both states are under our mental Map but in different times). Cost is what makes change possible. Without them, asked change wouldn't occur.

So, costs, as opposed to profit, which is purely mental, also require real/actual changes in reality that an agent can record. In other words, she must change some combination of things in reality in order to reach a new potential state. The gain/loss is then derived as a result of a higher/lower coincidence of the desired and new state of affairs.

Thus, the cost structure is not merely mental (as opposed to the perception of profit); on the contrary, it must necessarily be real as well, i.e., it is the realized idea in reality of some combination of goods that *will cause* the new potential state of affairs to be achieved. This also implies OpCs and a counterfactual consideration of the cost structure.

If the agent could achieve the new potential state and it also equaled the desired state, this would imply his *absolute* maximum satisfaction and *absolute* maximum possible profit; there would be no room for achieving new profits (since the profit spread would have been eliminated) and the costs incurred would have *absolute* maximum efficiency. This is possible only as an imaginative construct within the ERE framework. That is, the reviser's remark is valid in the context of absolute equilibration, i.e., the assured perpetual coincidence of a potential and a desired state, which an agent seeks, but doesn't attain. Hence, cost, apart from this imaginative state, must be associated with the dynamics of the actual and potential states.[15]

Cost is therefore a semi-permanent cognitively defined flexible *sub-structure* of the Idea of Economic Orientation with direct overlap into the reality. It is continual. It is focused on changing the structuration of the Idea to get rid of the inappropriate actual state and achieve at the same time a higher (degree of) coincidence between any potentially achievable state of affairs compared to some image of a desired state of affairs. It is a kind of knowledge that is feasible and applicable to the change of reality; fanciful, unrealistic, and inappropriate ideas about costs never materialize. Costs are related to the satisfaction of potentially possible needs and the associated combination of goods. They are thus a build sub-structure by which the

agent *actualizes* the Idea of economic orientation into its new potentiality, which is reflected in reality by the change in the agent's portfolio construction. Costs basically shapes individual utility into the new state.

In reality, we see—as a consequence of decision about cost structure—the agent's actions associated with the transformation of the actual portfolio into the potential one: through the expenditure, exchange, productive use of goods, new combination of goods, which will cause a new composition of the portfolio. Since it is a sub-structure, we have to identify its boundaries within the Idea to be able to distinguish between costs and utility.

This is important since I claim that the structure in question is found in the structuring of the utility and it is necessary to distinguish between utility and cost. For this, we can combine the vital parts of the Böhm-Bawerk´s structural interpretation, the concept of OpCs, and the introduced concept of individual utility. Although Böhm-Bawerk composes a cost structure relying on external, *historically existing* assumptions (the value of marginal product), he is inspiring; he tried to find the structure of value based on the relationship of utility and cost;[16] in principle we do the same, except that our design has no external assumption; it is purely individual.[17] At the individual level, however, this requires the counterfactual nature of the costs, which sets the boundary for the factual structuring because costs must be both a mental idea of a change of reality and an actual change of reality. We also need the structure of the individual utility, which provides the context. The cost structure (so far as an initial proposal) arises, is build and permanently actualized within the Idea of economic orientation based on the following three-fold dynamism:

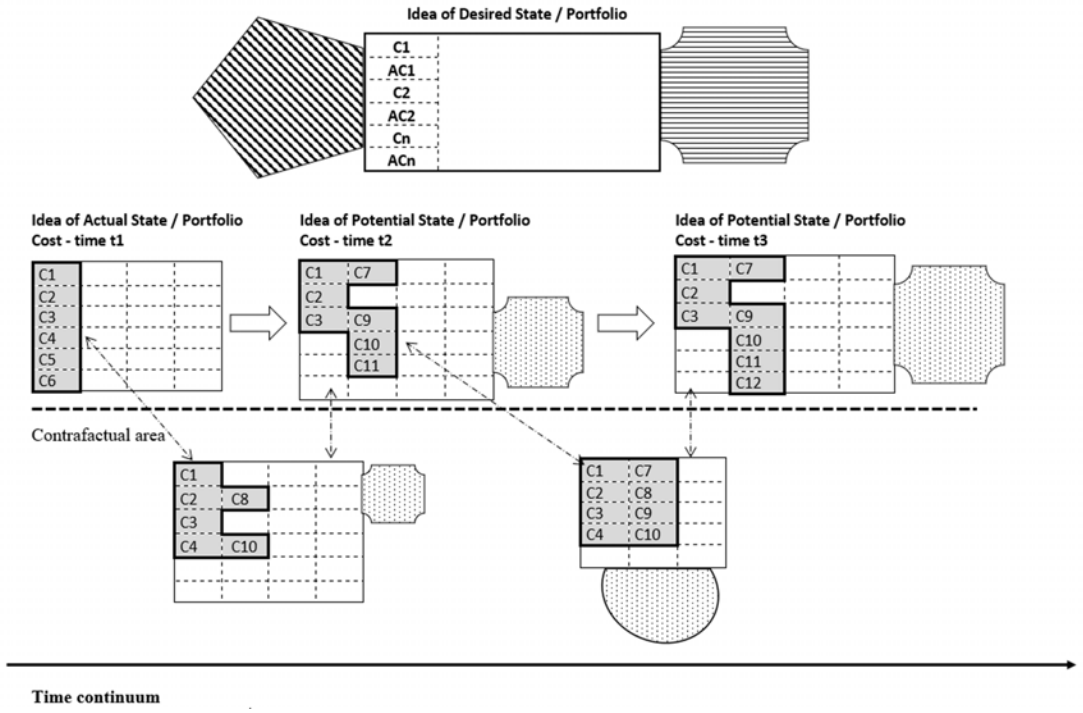
- the spread between the actual and the potential state of affairs is created in the context of the desired state of affairs. This dynamic has a factual character derived from an individual's normative notion of "how something ought to be", thereby defining the agent´s economic context.[18] This is the reason for the feeling of uneasiness (Mises 1998, pp. 13-14), which is perceived as: if something isn't done an agent will be worse off compared to non-action. It is based on an endogenous dynamism within the Idea; desired state of affairs is incompatible with the present one and an agent seeks some potential one which is more similar to the desired one.

- the maximum cost range (ex-ante) shouldn't simultaneously compromise or jeopardize the agent's continuous satisfaction of her needs over time. This boundary is defined so that the potential state shouldn't widen the spread between the potential and the desired state compared to the actual and desired state; in other words, costs shouldn't exceed revenues (at least ex ante),

- the consideration of OpCs which "shows" the agent how to potentially and realistically achieve the specified state differently. However, this domain isn't at all anything that an agent can reason about in the way that might have been implied by the traditional interpretation of the OpCs. Rather, it is defined by the desired state, within the framework of which the agent considers her alternative possibilities (as a regularity). However, these contra-speculations are not her costs! The OpCs are just one of the boundaries of the factual cost structure; of course, an important one.[19] Nozick's (1977) critique isn't concerned with interpretation. Costs are factual; counterfactual OpCs merely do-form them. The preference scale is always two-leveled; an agent prefers the factual cost/utility structure, and she "moves" the actual non-preferred cost/utility structures into the counterfactual domain accordingly.

Schematically, we can simplistically indicate cost-structure and its development as follows:

Scheme 2:



The illustrative scheme shows the simplified structure of some portfolio at time t1, t2, t3. Top is a representation of the ideal (desired) state, which is not changed just for simplicity; in fact, it changes as well. The idea of the difference between the actual portfolio and the desired one is shown by the shaded boxes. According to the utility interpretation above, the preferred potential state is such that it begins to resemble the desired state more closely relative to the actual state; this is indicated in t2 and t3. The scheme is further divided into a factual flow and counter-factual alternatives.

Under the actual state t1, the scheme indicates the existence of an overall cost structure composed of partial states of cost structure or "cost blocks" (schematically indicated as C1-C6). At the mental level, this is a combination of knowledge of how to use some parts of reality to achieve desired outcomes, which in reality manifests itself in the combination of goods we use as costs; C1 may be a production line, C2 a commodity mix, C3 labor, etc... The agent, in reaching the potential state at t2, considers at t1 a second alternative indicated in the counter-factual area as a cost structure (C1-C4 + C8 and C10). However, (C1-C6) is chosen and this is because agent presupposes that it will cause a higher coincidence of the new state with the desired state; thus, the second alternative is rejected due to its lower efficiency. In other words, I indicate that different cost structures cause different outcomes.

The achieved potential state at t2, which becomes the new actual state in the time continuum, in turn contains a new cost structure (which is schematically indicated as C1, 2, 3—the "cost-blocks" taken from the older structuring and the new "cost-blocks" C7, 9, 11) that reflects the newly perceived economic context in t2. Again, it can be weighed against another cost structure (combination of cost-blocks), which is rejected because it would result in a complete dis-parity, i.e., a deterioration of the agent's state. What I am trying to indicate here is that the cost structure may be based on older, proven/successful types of cost blocks, but the economic context may also necessitate a new combination of additional knowledge and resources at the agent's disposal in order to achieve a higher level of satisfaction.

The cost structure has a mental—phenomenological—character just like the Idea; therefore, it is permanently updated into a new particular form. I indicate that the agent builds the structure permanently in time continuum; so there is some new structure in t3, etc..

The structure emerges gradually, whereas in the early stages of human development it should have an implicit character, i.e., it is given instinctively as some unconscious set of processes which the not-yet-conscious individual uses automatically.

In the Ideal state, which forms a kind of reference point, I indicate also consciously generated automatically realized costs (labels AC1, AC2, AC-n), which will be dealt with in a moment on the topic of individual and social equilibrium.

The easier it is for an agent to achieve a potential state, the lower her costs are either in quantitative terms, which, as a consequence is manifested, e.g., by a lower number of issued, productively used goods from the portfolio (mutatis mutandis money), and/or the more efficient and effective the costs are in qualitative terms. This means that that knowledge which causes the fastest and/or most efficient way to reach the potential state is used to construct the cost structure.

It should be emphasized that I am not describing production costs. What we are describing is a mental structure reflected in reality that will result in a potentially higher perceived utility; a higher state of coincidence of what occurs with what is desired. This manifests itself in reality in many ways: sometimes as an issue of goods or an exchange, sometimes as a productive activity, consumption of goods, but also as a new/repeated combination of goods, or just as an intellectual process.

The range of a given spread says nothing about the robustness of the cost structure. The knowledge that causes the actualization of the potentiality of the Idea of economic orientation can represent both simple as well as robust production processes, or the structure of a given piece of information can consist of both simple individual combinations of knowledge (e.g., how Robinson grows an apple) and/or complex (e.g., how an automobile producer produces an automobile). This follows from the fact that the interpretation of utility and cost is in the nature of maximizing the coincidence of the desired state with the potential state that can be achieved, and isn't based on maximizing the number of goods or plans.

The above illustrative scheme can represent costs focused on different kinds of utility of an agent: it can be production costs but also costs related to leisure or socio-cultural costs. Above schematically described can be a production process composed of machines, input commodities, labor, and other related costs such as marketing or branding, sales network, or seasonal labor, where the outcome (shaded box) is some kind of products as part of the overall portfolio/balance sheet of the enterprise.

However, equally, the scheme may represent a combination of goods in conjunction with leisure or maintaining camaraderie. A higher utility may be in the nature of a good feeling that is created by the combination of, e.g., food, music, light, a sofa, a movie (as economic goods) and a company of another person or animal (non-economic factors), which, at the mental, level creates a change of a representational state of the utility "alone at home" into the utility "spending time with a loved one", which causes a good feeling and which reflects states of reality.

Various cost sub-structures

Interpretation based on the existence of a cost structure as a knowledge structure and its partial states (as "cost-blocks" in the Scheme 2), allows us not only to define very subjective cost structure, but also enable explain its inter-subjectivation. The reader should not get the impression that I am advocating the objective notion of costs. Cost is always individual and subjective; it is always based on an individual combination of knowledge that is unique in some economic and agent′s context. However, even an individual combination of costs is based on some intersubjectively discovered knowledge that predisposes, e.g., an entrepreneurial idea to build a wrap-drive rocket to an unequivocal economic failure (for now), but that doesn't mean that the project in question must be investment-uninteresting. However, cost structuring also allows for inter-subjective characteristics, given that cost as a mental structure is also a formal-logical con-

struct that is universal in principle and exactly that allows any Bob at least to understand any Alice´s individual cost mix.

Subjectively defined structures are of course based on the uniqueness of the agent's knowledge about the appropriate combination of goods and her interpretation of the surrounding reality (as shown in Scheme 2, the agent can combine any "cost-block" to create a unique individual cost structure). However, what makes a cost mix always individual are not only the individually defined quantitative combinations, but also the qualitatively defined relations among goods and their properties. Qualitative factors can play a role here, which are either fully psychological-individual, or are constructed in the context of the socio-cultural context in which the agent operates.

However, the agent also generates various types of automatisms (automatically performed activities)[20] and standards (relatively stable recurring activities) within the individual cost mix. Thus, these are objectified characteristics of individual costs. Examples are, of course, the production provided by machines, but also an employment contract by which an entrepreneur entrusts an employee to provide part of her planned schedule under predefined conditions, or any other contract related to the external purchase of some goods. Standardization is also important in this area, as well as defining practices, standards, processes or the quality characteristics of the products used.

These types of repetition of structuring allow for intersubjective cost perceptions that can be assessed by a third party, e.g., an investor or a competitor. The intersubjective assessment of these structures (from an individual point of view, these are logical-formal structures, which are therefore graspable by others) is furthermore identically possible to set universal benchmarks for their assessment.

The construction of cost within the line of the desired context, jeopardization of satisfaction of needs and OpCs creates for agents a possibility to realize parallel economic activities.[21] An agent evaluates counterfactual alternatives and her decision leads to the most advantageous alternative for the agent being implemented. Other combinations in the context of his goals are discarded into the contrafactual arena. However, credit relations allow for parallelization of counterfactual economical ideas, although not in absolute terms. The allocation of savings from creditors to debtors allows for the parallel implementation of several cost-benefit activities. They don't exactly correspond to individually defined alternatives, but they do so relatively; in fact, both creditor and debtor have to agree on some common conditions for the allocation of resources and the elimination of debt. This is what creates the inter-subjective notion of cost structure of projects that are carried out. The creditor allows the debtor to do something that the debtor couldn't otherwise do, and the debtor does something that the creditor wouldn't do on her own, thus allowing the emergence of cost-production structures that would otherwise remain in the counterfactual area.[22]

Given that these are knowledge structures within the Idea of Economic Orientation, the structures in question can be both long-term and short-term in nature, be more/less rigid, have the characteristics of automatisms, be related to intersubjective goals (e.g., the community), can have the character of various semi-stable plans, activities, or processes, and as such can be relatively flexibly modified or changed. But, of course, we can also change, remove, or eliminate them altogether if they prove to be inappropriate, i.e., as something that doesn't fulfill the agent-defined normative goal of "how something ought to be". So, the interpretation provides us with apparatus to distinguish fixed or variable costs and in the case of some extremely rigid structures 'sunk costs'.

Costs in the time continuum

Presented interpretation allows for a seamless interpretation along the time continuum. The implementation of the plan and its subsequent modification do not cause a value and cost discontinuity in the interpretation. By adapting to new contingencies, we do not change the plan-value/cost absolutely, but only relatively. Over time, of course, individual particular cost structure change, but by characterizing costs as a structural whole, comparison overtime is possible precisely at the level of that structure of the whole. Over time, we compare the (utility-cost) structure in t1 with the (utility-cost) structure in t-n. So what accoun-

tants record, in other words, also has a real informational and economic relevance for the agent (cf. contrary to Buchanan 1969; Thirlby 1946a, b, 1952; Coase 1938).

Agent can ex-post tell whether the chosen alternative was *relatively* correct, i.e., whether she was successful to narrow the spread between what she achieved (the potential state) and what she wanted, notwithstanding that both states are simultaneously dynamic and ever-changing. In this context, she can equally speculate ex-post on the rejected alternatives, i.e., whether the rejected combination might have narrowed the spread more than she eventually succeeded in doing so.

The associated gain yields a higher degree of coincidence between the potentially achieved and desired states than was the case for the original actual state and the desired state; she is in a loss if the realized activity eventually widened the spread between the achieved and desired states, relative to what she perceived the spread to be before. The interpretation allows us to recognize the dynamism between individual profits and associated costs and provides us with criteria to recognize profit/loss out of the monetary economy and demonstrated preferences which are an effect not a cause.

Here, we must note that the desired state is dynamic and its structure may have changed between t1 and t2; i.e., even if the agent anticipated at t1 that some action would lead her to a better state at t2, this anticipation may not materialize due to the fact that she herself redefines the desired state in the context of some endogenous or exogenous factors. Thus, the entire cost and utility structure is in a very dynamic mode.

Marginal costs are associated with some change of the structure of cost; what is marginally changed is the cost structure as a whole, and it is changed by a particular action/decision; marginal change, like utility changes, is defined in Pošvanc (forthcoming) as an economically meaningful and relevant change causing explicit and at the same time *perceived* (sic!) change in the state of the Idea reflected in the change of an agent´s portfolio. This means that marginal cost is what will change the nature of a given structure so that either the relative position of parts of the overall structure is changed or some part of the given structure is added or removed, or it may be a combination of all.

Individual and social state of ERE (as a thought construct)

The interpretation allows us to link the marginal utility and the cost theory with the Austrian equilibrium theory. Pošvanc (2021b, forthcoming) shows that a personal equilibrium is reached by an agent when the current-potential and desired states of the agent's Idea and portfolio structure in reality are in maximal coincidence. At that moment, the agent is indifferent, is in equilibrium (maximal individual satisfaction), and doesn't act because she has no reason to change the given state. However, we must look at this state dynamically, not in a static mode. It means that an agent doesn't change a given state because what she wishes is automatically happening. At a given moment, marginal cost and marginal utility must be zero, given that the spread between the actual and potential portfolio state and the spread between the potential and desired portfolio state don't exist. *Marginal utility and marginal cost* are zero due to the full identity of the desired state with the actual/potential state; remember, it is a coincidence of states that matters.

What is the cost structure of an agent within this state? Of course, we cannot claim that the agent achieves maximum utility without incurring any costs. Given that both the utility and cost structures are in a dynamic mode, in order to hold permanently marginal utility and marginal cost as zero and preserve the equilibrium over time, a given state must be reached for the agent in an automated fashion. So, there are costs, of course, at that state of affairs, but they should all be fully automated, standardized, and automatically reconciled (as if the ERE concept is applied to the individual). The reader may recall Scheme 2, where automatically executed "costs-blocks" are also defined in the ideal desired state. Although the concept of the ERE is a theoretical construct, agents already today use many automatically executed processes. These assist in achieving higher levels of individual satisfaction/utility, which implies that this theoretical construct has a practical character (practical interpretative character of the ERE construct is emphasized also by Rothbard 2004, pp. 322-323, 329).

However, only some theoretical imaginative full-range automatization could cause the actual-potential-desired structure of the Idea and the portfolio to be in a permanent coincidence. In principle, the agent would then permanently experience the *absolute general conditions of her welfare* and devote herself only to her freedom, since everything else in the form of satisfaction would accrue automatically as the agent wishes to be; in principle, the entity in question (which probably could no longer be a human being) wouldn't even be aware of this state in that case, because it would take it as if an agent were breathing today.[23]

What about market equilibrium and the ERE? Very much the same; in principle, it is a state where all agents are in an individual state of equilibrium and their mutual satisfaction is implemented in the context of some pre-set automatisms, the operation of which doesn't need to be intervened in. It should be plan-based, meaning here that equilibration tendencies of all actors must be dealt with already at the level of plans (see also Hudik 2020). In that state, social utility should reach its maximum, monetary profit should be arbitraged to zero, all agents should achieve maximum individual satisfaction and be at the maximum of their individual profit. The state should be achieved automatically, without the need for intervention (human-based action), market price spreads should be arbitraged to zero, and bid-ask prices should be equal to marginal cost.

How is this state achievable? As Pošvanc (2021b) shows, it is a problem of attainment of the maximum level of knowledge and utility. To achieve the market ERE state we would actually have to eliminate the consideration of any OpCs; i.e., our knowledge should provide *absolute* certainty of knowing that any other alternative that should be automatically implemented (or considered for us by some automatism) against any other already automatically set resource utilization alternative makes no sense and need not even be considered, and/or is already being fulfilled by some automatism.[24] At the same time, at a given moment, we should not be dependent on any automatism set by Nature, and on the contrary, everything should be set in the context of how we want it to be set; in Hegelian terminology, it should be a state where the Spirit finally feels at home and devotes itself only to its Freedom and nothing else.[25]

CONCLUSION

Connecting the interpretation of costs to the concept of accountancy costs should not be a problem; the balance sheet, cashflow tracking, the budget related to the implementation of the plan, the assessment of assets and equity, or the tracking of costs and revenues is not an expression of anything other than the evolution of the cost structure within the Idea of Economic Orientation over time. The cost theory of the individual is not fundamentally different from the cost theory of the firm (the latter is merely more sophisticated). The OpCs define a boundary for factual costs. From a behavioral perspective, it should be equally obvious that we really need to focus on the OpCs to be aware of them, and, on the contrary, sometimes we act based on pre-set automatisms, and at the same time, the better the alternatives we consider, the more successful our factual costs should be.

The presented synthesis of the cost concept should also meet other claims: costs aren't interpreted externally, thus avoiding the criticism of the argument in the circle; costs are not explained as a production trade-off; the OpCs have their context in the factual nature of costs. The cost structure allows for a fluid interpretation of the phenomenon over time, it is ex-ante and subjective in nature, it allows for ex-post evaluation and hence for the agent to learn from her mistakes, it allows for inter-subjectification of cost information and the explanation of different types of costs (variable, fixed, sunk, direct, indirect, etc.), links the individual cost view with the firm's cost, it links cost structuring with utility structuring, allows the explanation of economic costing beyond monetary economics, and it is linkable to the ERE concept.

The last question that remains is how the presented concept changes the Austrian interpretation of costs and what the implications are. In my view, the interpretation brings together vital parts of Böhm-Bawerk's and OpCs interpretations and connects the economic concept of cost to business practice as well as to the economic mainstream, to which it provides a philosophical-economic-choice-based background.

It doesn't change the subjective nature of costs. On the contrary. The interpretation is fully subjective and, within the framework of subjectivism, shows why it is possible to understand the cost-mixes of others, why it is possible to compare two or more individuals/entrepreneurs and why we can distinguish which one of them is more economically successful.

Interpretation should alter several methodological explanations. I am unable to mention them all, of course, because the concept of cost is very basic. But from the field of my personal interests, I see possibilities to uncover the problem of the origin of originary interest, the origin of money, the principles of calculation outside the money economy.

The concept also allows for philosophical speculation about the application of interpretation outside the world of humans. Indeed, the basis of interpretation is the dynamics of utility and cost phenomena within a conscious mental *order*. Given that these are, in my view, a priori dynamics, it is possible to speculate (mutatis mutandis) about the application of these concepts to the rest of living nature, where the living organism is conceived of as a self-relation (living *order*), and, in an extended version, to speculate (mutatis mutandis) about the application of the concepts to inanimate nature, which is likewise a system (*order*) of some kind. I think these are interesting questions that the context of the interpretation presented here at least allows for.

NOTES

1 The reader can follow the debate in Arce (2016), Colander (2016), O'Donnell (2016), Parkin (2016a, b), Stone (2016).

2 Böhm-Bawerk (2002, p.59): "Usually, I say, these other valuations emanate from people other than those who directly value goods reproducible at will according to their costs. This is always the case, for example, when our cost valuation is based on a purchase price".

3 For some hints to support this claim see also Wysocki and Block (2018, pp. 134-135) explaining how some things as parts of reality become goods; or direct criticism of the concept of scarcity as an objective feature of reality in (Pošvanc 2019, p. 18).

4 Buchanan (1991, p. 520): 'Opportunity value of "that which might be" if choice were made differently. Note that it is not the value of "that which might have been" without the qualifying reference to a choice. In the absence of choice, it might be sometimes meaningful to discuss values of events that might have occurred but did not. It is not meaningful to define these values as opportunity cost, since the alternative scenario doesn't represent a lost or sacrificed opportunity.'

5 Weak preferences are defined by Nozick (1977, p. 370) as follows: "We can understand 'the person weakly prefers doing A to doing B' as: the person prefers doing A to doing B, or the person is indifferent between doing A and doing B. In terms of this relation of weak preference, a person is indifferent between doing A and doing B if and only if he weakly prefers A to B, and he weakly prefers B to A. A person strongly prefers A to B if and only if he weakly prefers A to B and he does not weakly prefer B to A."

6 For it is only through action that the agent, according to neo-Misesian Austrians, perceives the preference scale, which immediately disappears after action and is replaced by a new scale related to new decision-making and action; see Mises (1998, p. 95).

7 One of the reviewers pointed out here that "if the agent making the decision hasn't thought of something, then it simply doesn't intervene in the computation of his OpCs". I agree. But from my point of view the remark points out rather what is absent from the present definition of OpCs. The OpCs cannot be anything. But what I ask for are some criteria, structure, and a factual context. The remark equally implies that OpCs may not always be applied if we don't think about them; examples are actions which are our personal automatisms we repeat and some of actions/decision done under "false" or practical certainty without considering anything else.

The reviewer's remark also made me think of an interesting philosophical question of whether OpCs exist at all if they are a purely thought and never realized construct. Here the reader can follow the debate originally

triggered between Meinong and Russell about the nature of being and existence (see e.g., Berto 2013, Jacquette 2015, Findlay 1963 for a more detailed discussion; for a concise introduction to the problem see Marek 2022). The debate was conducted in terms of whether or not there exits, for example, Sherlock Holmes, a fictional literary character who, even if he is only fictional, has a real impact on the lives of at least those who read the stories in question. Equally, the discussion was focused on the question of whether there exist pure thought constructs, such as the round-square, which cannot even logically be. The problem of OpCs seems to me in terms of their merely thought and never actually realized "existence" very much like these problems. As the reader will see below, I think the OpCs exist, but we have to give them a structuration; and as a reviewer correctly points out -- the structuration has to be a thought one.

8 Hayek (1952) explains the mental order on the basis of the so-called Map and Model analogy. The Mental Map provides any living organism with an orientation in reality. The Map consists of universal knowledge, which has arisen from the mutual differentiation of particular perceptions. These are applied retrospectively to the particular reality through the Model. The model is future-oriented and combines universal knowledge about reality to "search" for the best way to get to the desired goal. The concept of mental order allows defining a phenomenological mental structure, which creates an idea of agent's needs and the ways of satisfying them through the structure of goods (portfolio).

9 Hegel's conception is based on the triadic relation between the incongruence of the moment of understanding with the moment of negation, and the subsequent (by necessity) overcoming of that incongruence when "later determinations 'sublate' earlier determinations" so "the earlier determinations are not completely cancelled or negated" (see briefly, e.g., Maybe 2020). This concept is used in defining the dynamics between the desired, potential, and actual state of an agent's portfolio. The actual state with the desired state create a mismatch, which is overcome through some potentially achievable state; so the earlier determinations are not completely cancelled or negated, and the previous structure of the portfolio is transformed into the new structural state by a marginal change.

10 Let´s imagine the process of biological functioning of the brain and sensory order. They produce different kinds of information. This information varies precisely in where they are produced, what they are produced by, and how they relate to and differentiate themselves from each other. This location-structure-differentiation produces (as a new kind of mental order) an image of reality for the mind, and at the same time, an image of the mind as such or "me" (at the level of the human being, of course).

11 As we look at historical development of the origins of accounting and our ancestors' intuitions, we are able to track a development of this phenomenological thought construct. One of the seminal events in the history of accounting was when Luca Pacioli introduced the principle of double-entry bookkeeping. The fact that it was in the 14th century was related, according to accounting scholar Littleton, to seven reasons: records of private property, the increasing importance of capital, large-scale business practices, the increasing intensity of credit, the spread of knowledge of writing, arithmetical knowledge, and, of course, monetary exchange, the combination of which culminated in that very period (see Alexander 2002, p. 2).

However, as Mattessich (1987, 2012) points out, this was already the consequence of a long period of building the logical (mental) structure behind double-entry bookkeeping; in other words, *double-entry was already being used by people long before its principles were defined* in the 14th century. Mattessich anchors his claims empirically to the period 8,000-3,200 BC in the context of the research of Prof. Schmandt-Besserat related to the discovery of what Schmandt-Besserat calls tokens, clay of tokens, and string of tokens, which were supposed to represent different kinds of economic goods. According to Mattessich, clay of tokens could also express a representation of who owed who, or serve as a record of debt elimination preserved in temples, or as a record of individual wealth and capital. Mattessich (1987, p. 9) writes:

"Thus the "aggregate" or superaccount represented by a clay envelope or a collection of tokens on a string, is not too much different from a balance sheet. It certainly had a dual significance: in its details, it represented the individual assets, in its totality it represented an equity."

Mattessich theorizes that the *mental structures* represented by the objects in question were also behind the emergence of writing or arithmetical symbolism, when the objects in question not only conveyed representational information (e.g., in the form of a representation of economic goods), but themselves began to form an informa-

tional structure that evolved into writing or mathematics as an abstract-logical representation of thought structures. Bennison-Chapman's (2019, p. 1) criticism that "'Tokens' were multi-functional artefacts; even within a single site clay objects performed multiple roles" does not, in my view, undermine the nature of the argument that they represented an idea-structure, where one of these could have been a utility/cost structure.

12 I leave the question of whether it is possible to define a unit of utility to a separate work.

13 One of reviewers posed the question of whether the here-presented description isn't similar to Bernardelli´s approach to utility. Hudik (2014, p. 12) writes that Bernadelli specifies "a reference-dependent utility function w (y; h), where y is an initial state (endowment), and h is a vector of increments of goods." As can be seen, the approach to utility presented here is similar in the context of the existence of some initial state, but different in the context that utility is dependent on the coincidence of mental states.

14 The reader should realize that what I describe is fully mental. We think of *both* factual states (what we actually do and achieve) and counterfactual states (what we would like to achieve). Even what happens in reality is mediated as a mental reflection by our sensory order. Therefore, utility as a mental phenomenon is what is perceived as a factual state of affairs, and at the same time, achieved outside of this mental perception. The counterfactual thought states of the Idea provide just contextual "boundaries" or the shape for what is factual for an agent.

15 I describe the characteristics of the absolute state equilibrium in more detail below.

16 See e.g.: "The blade of the pair of scissors that demand represents consists wholly of utility, and the blade that 'cost' represents is perhaps composed of nine-tenths utility and a ninth disutility on rough average. In total, therefore, value is perhaps based on utility up to 19/20 and on disutility up to 1/20!" (taken from Okada 2017, p. 639)

17 Although Bil'o (2004) points out that Böhm-Bawerk's horizontal and vertical structuring of the value of goods is cardinal, based on external prices, which Čuhel-Mises correctly rejected, the vitality of Böhm-Bawerk must, in my view, be seen in the attempt to describe the structuration of the phenomena of value and cost. We can speculate that if we apply horizontal-vertical relations *within* the Idea of Economic Orientation, where the coincidence of the structure of needs with the idea of a portfolio of goods *is dependent on knowledge of relations* about needs-goods-satisfaction (and the relations in question may be horizontal-vertical in character), then we might subsequently get a structural picture of individually perceived value, utility as well as costs. A related question is whether we can then define the unit of this structuration (util); but as I indicated above this must be deal with in different work.

18 If I am in the desert, for example, and I want to quench my thirst, it is the context that defines my consideration of costs and attributions of value of the surrounding things in reality. I will behave differently if I am in the desert as a tourist discovering the magic of the desert landscape, differently as a person whose plane has crashed 1 km from the nearest town and a person whose plane has crashed in the middle of nowhere, and differently compared to a person who possesses knowledge about desert-survival.

19 The OpCs are important in this very respect. This is because they enable speculate about new combinations of knowledge about cost and utility structuring; but we are looking for the best alternative to achieve what we are able to achieve. Indeed, the Hayekian mental order operates precisely on the basis of various associations of universal differentiation of knowledge, which makes related and unrelated associations and the merging of older universal knowledge into new ones possible. Hegel's dialectic has a very similar character.

20 I consider automatism to be a repetitive process that is pre-set, responding to defined stimuli; it can have an evolutionary-natural character (instincts), an impositional-cognitive character (defined on the basis of human knowledge about reality; e.g., machine-automatic processes, design of goods), or a normative-social character (interpersonal contracts) or an evolutionary-social character (cultural-social rules, catallactic rules).

21 Emphasized to me by František Chroustal (personal interview Vienna 19.1.2023).

22 Braun (2014) is thus intuitively correct to look for the origin of the originary interest in the context of the concept of cost, but his mistake is that he looks for the origin at the individual level rather than in an intersubjective relationship where counterfactually perceived projects become factual; indeed, the agreement of the creditor and debtor implies that what wouldn't otherwise be realized is realized with respect to the perceptions of both actors. In other words, the origin of the originary interest is interconnected with making the contra-factual projects factual. For an intersubjective concept of an original interest, see Pošvanc (2020).

23 I remind the reader that this is about defining the conditions for a dynamic full-range individual equilibrium, not about whether an agent can ever realistically reach this state; see also last footnote.

24 Igor Wysocki (personal email communication 12.11.2022) posed an interesting question about why we cannot actually act conceptually on the basis of certainty. In my opinion, one of the criteria that could define a state of absolute certainty would occur if we do not consider any other cost alternative; because we act with certainty. The counterfactual domain would be deliberately "emptied".

25 Likewise, the reader should recall the reviser's comment that OpCs must be thought of if it is to be applied (footnote 7). In the hypothetical ERE state, the agent wouldn't consider any OpCs, given that everything should automatically and with absolute certainty happen as the agent requires in the context of the agent's defined desires and even automatically coordinated with the desires of others.

Philosophically, then, the individual Spirit is concerned only with her *absolute* freedom. At the same time, absolutely free would not mean that Spirit doesn't decide. It would mean that the Spirit doesn't decide *alternatively*. Spirit is then absolutely certain, absolutely in control of and comprehending reality in its essential form, and everything behaves according to the automatisms set by Spirit; I conceive of a given state philosophically-speculatively as a self-equal discussion with God, which implies that the entity in question would also have to be God. Only then we wouldn't have to consider alternatives.

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