Capital and Social Costs as Outcomes of Struggles with Truth

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"Every science has its God who is at the same time its goal" teaches Novalis (1798/99, p. 10), one of the leading theoreticians of German Romanticism. So, what is this goal of the science of accounting, which serves as an ideal of absolute completion and initiates an infinite movement in search of the unconditional? It is Capital. But what is Capital and what kind of economy emerges from its calculus? Surprising as it may seem the answer is difficult because Capital and its calculus are part of a system of make-belief that obscures its substantive essence.

Capitalism: a system of make-belief

The present treatise is the much needed "tour de force" in the sociology and history of economic ideas. It shows how the "system of make-belief" inherent in Capital's calculus obscures the "substantial core of all Capital [which is] immaterial wealth¹" for the sake of profits (Veblen in Cohen 2013, p. 7). In other words, while Capital "resides [in a] continuity of ownership" (ibid p. 7) the present volume convincingly demonstrates how "make-belief" operates in its conceptualization and calculation as a pecuniary unit. (on this point see Richard 2017) This make-belief Capital calculus is a social technology that turns deliberate falsehoods into popular belief, not just in order to rationalize and justify the economic power of propertied elites but also to generate and guarantee it. Undoing this system requires an excruciating escape from received ideas, to which the present treatise hands us Ariadne's thread.

A stylized summary of the way this treatise depicts the dynamics of this system might go like this: based on their methodological premises of pure theory neoclassical textbooks spread definitions of Capital that are not derived from observation of actual business practice, obscuring one of the most important objects of the study of economics. This is what Robert Heilbroner had in mind with his indictment that the best kept secret in economics is that it involves the study of capitalism! Next, journalists and politicians function largely as an echo chamber for this fact-free concept of Capital because it allows the self-stabilizing of elites: these can rationalize their status, wealth and income by recourse to a Capital calculus that creates a wealth delusion and obscures the actual destruction of the lasting sources of wealth: Nature and the Human. In such a world incoherent and superficial gossip is transformed into a twisted and un-true gospel, which daily defies and contradicts common experiences. All the while the secretive agencies for accounting standards continue to shape the rules for the calculus of what they define as Capital, i.e. money sums. Their paid "accounting" experts represent capitalist interests who are to whit completely "unaccountable" to the public. This performativity of financial Capital and the rules for its calculus either escapes the attention of most economists or is actively hidden from them or by them, highlighting the need for detailed sociology of economic knowledge surrounding Capital. In practice the boundary conditions of financial Capital are made plastic for legal purposes and are intentionally shifted by legal experts-for-sale for purposes of navigating the different dimensions of accounting, tax and liability laws, allowing financial Capital to escape and emerge as needed for the sake of profits. But let's also appreciate the crucial role of

¹ By "immaterial wealth" Veblen means the community's practical knowledge involved in its material interests.

mathematician accountants who developed the ideas and mathematical techniques for discounting the future, depreciation, and opportunity costs to calculate, shape and indeed "make" Capital. This particular reification of Capital for the sake of certainty in pecuniary calculations changed the understanding of economy and its relation to Time by abstracting from its substance. And, last but not least there is Fisher's performative innovation of "Capital Value" equating Capital with the sum of expected discounted cashflows from assets. Veblen had deemed this the core of the make-belief of Capital (Veblen in Cohen 2013, p. 9). The political nature of numbers – much debated today (Schlaudt 2018) - is corroborated by the historical evidence presented in this treatise: political elites have since the beginning of the 14th century consented to the universal applicability of the Capital calculus proposed by capitalists to every aspect of reality. And, even nominally Communist economies past and present live under the yoke of this system, making them equifinal to capitalism with regards to non-viability.

In sum, the present volume attests to how Capital is obfuscated through a make-belief monetary calculus instituted by a mathematical, technical, legal, and political complex organized by capitalists, their accountants, economists, lawyers, lobbyists, and politicians. These exercise great creativity and sophistication in continuously manipulating and adjusting the definition of financial Capital and its calculus for sake of private profits and public confusion. This system of make belief is not to be conflated with an accidental error, ignorance, or even earnest rhetoric, but rather a sophisticated twin technique to agnotology (Mirowski 2013), propaganda and perception management in the age of cynical reasoning (Sloterdijk 2018). In this light the current wave of anti-establishment sentiments, suspicion of elites, and conspiracy theories ("fake news" and "alternative facts") seems to signal partly a healthy reaction to an unfettered system of make-belief and should not be dismissed out of hand. The problem is only that many of these reactions are caught in a double bind of any mere "fight against" that is abortive of the deep struggle with Truth characteristic of this treatise and thus lacks the ability to substantiate its claims with careful inquiry and evidence. We here recall Hoelderlin's lines: "Alas! the masses applaud what succeeds in the marketplace/ And honours bestows the servant only onto powerful brutes;/ Faith in the Divine/ have only those who are akin to it."

All this leaves us in a situation characterized by massive inconsistencies between the Capital definitions in economics and accounting science and practice. It is a classic case of the intentional and systemic fragmentation of social knowledge benefitting the creation of doubt and confusion to serve the cynical ends of profiteering elites. Yet, the boundaries of this kind of intentional confusion creation surrounding Capital blur with different levels of mere ignorance. Only detailed historical and sociological studies such as this treatise can help to identify where intention and ignorance part ways or coagulate in the double-truth of wilful ignorance fostered by neoliberal economists. (Mirowski 2013) This combination of will and ignorance on matters of Capital bears resemblance with Nietzsche's ideas on Truth: "truth is error" or "we have illusion to not perish from the truth".

Capitalism as a system of unpaid costs, or: from Capital controversy to Calculation debate

The great merit of the authors' research is in showing how the intentional falsehood of Capital bleeds into the calculus of (opportunity) costs based on exchange values³, profits and pricing: these become

² We quote here the second of two stanzas of Hoelderlin's poem "Menschenbeifall" (English: "Human Applaus") (Echtermeyer und Wiese 1993; p. 316)

³ It may be noted in this context that the German word for "exchange" is "Tausch", which is closely related to the word "Täuschung", meaning "illusion", "delusion", "the fooling of oneself or somebody"; the latter is associated with "fraud" ("Betrug"). The word "Enttäuschung" commonly translates to mean "disappointment"

the illusory information of which markets are made. By relating the controversies over Capital and the debates over its calculation to the informational basis of markets, the authors build a bridge to the epistemological issue of the Socialist Calculation Debate (SCD). Recent histories of informational economics describe the SCD (Mirowski/Nik-Kah 2017) as the birthplace of computational economics and mechanism design because they triggered intellectual efforts mainly by socialist economists to think through the informational characteristics of markets. This history shows how socialists lost sight of their initial commitments, that is, to develop an alternative to capitalism in response to Ludwig Mises' and Friedrich Hayek's epistemological challenges to socialism. The latter was a defence of neoliberalism that confused the difference between information and knowledge. The main title of this history is derived from a line of T.S. Eliot's poem "Choruses from 'The Rock'" lamenting the knowledge we have lost in information: "Where is the wisdom we have lost in knowledge/ Where is the knowledge we have lost in information". This loss of wisdom indicates a lack of love for wisdom or Philosophia, implying also a problematic understanding or relationship with Truth. Not only has the informational turn given rise to the neoliberal definition of the Market as a superior information processor that denies the Human as the seat of Truth. It has also meant the reinterpretation of social costs as information asymmetries in market exchanges between individual transacting parties, ignoring a whole range of negative and often irreversible damages and diminished real income for third parties, society as a whole, and nature. (for this point see Berger 2020) The present volume presents supportive evidence for the argument that this informational turn in reality ignores and obscures how markets are rife with falsehood in terms of the cost, profit, and price information used for calculations that reflects nothing but the interests and reasoning of powerful capitalist elites. In other words, the outcomes of markets are in reality as arbitrary and deceptive as the system of makebelief Capital.

The present volume demonstrates that this make-belief system involves the ignorance of many economists regarding actual accounting practices and science. In particular, the present volume argues that it was Hayek's and Mises' physicalist understanding of Capital as patrimony (apparently derived from Carl Menger), which blinded them to the constructivist role of accounting standards for Capital's calculus. This intellectual blind spot was, of course, in harmony with their philosophic and ideological commitments. Indeed, a look at leading histories of the SCD (Steele 1992) evidences that the definition of Capital or actual accounting practices and standards was nothing but an aside, as if they were not relevant to the issue of calculation of (opportunity) costs and prices and could be ignored safe and sound. Despite these shortcomings, this history credits Mises for pointing out the informational and institutional aspects of the problem of socialist calculation. However, Mises' theory of costs ignores not only the constructivism of legal accounting standards but also its epistemological consequences, namely the construction of largely arbitrary information for calculation, especially private (opportunity) cost information. According to the present treatise Mises even confused property and possession⁴, thus failing to grasp the specific characteristics of the institution, in which Capital's calculus is rooted. Indeed, the present history demonstrates how the Capital calculus has been debated, contested, and fought-out violently for centuries within but also by accounting science and practice against workers, confirming Landauer's view (in Steele 1992, p. 49) that "Socialism as a mass movement was [...] a revolt against the dictatorship of the balance sheet."

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but also "disillusionment". Aristotle seems to have intuited this by determining that exchange value has no substance.

⁴ Veblen and Kapp correctly noted that cost shifting within Capital's calculus is rooted in private property, not possession. This explains the title of Kapp's book "The Social Costs of Private Enterprise". Kapp's former assistant and follower Rolf Steppacher has further elaborated on the effects of private property on socioecological issues (Steppacher 2008).

In the light of the present volume it seems that economists came late to an issue of major economic importance and for the most part failed to consider the epistemological challenges involved in the incomplete and largely arbitrary cost information implied by the system of make-belief Capital. One of the exceptions was K. William Kapp who developed this very line of argument as a rebuttal to Mises, siding instead with Otto von Neurath and Max Weber on the necessity of calculations in kind to achieve the substantive rationality of social provisioning. While Kapp refined his argument over time (see Berger 2017) it maintained its core, consisting of two main propositions of central significance for the present volume's intellectual project:

A) the market's calculus *systematically incentivizes* the *socialization of costs* due to incentivizing the maximization of private net returns. It is thus not rational from the perspective of society as it redistributes income in the form of real losses and damages to society, undermining the development process;

B) the market's calculus *does not* account for the social costs of production because it's exchange values *cannot* give value expression to the substance of the losses arising from economic production due to its arbitrariness (resulting from the arbitrary income distribution and the manipulation of wants by advertisers), incompletion (exclusion of those without purchasing power), value incommensurability (that which cannot be exchanged, such as human life or health, has no exchange value), cognitive irresponsibility (irrevocable processes of circular cumulative causation cannot be expressed as a reversible self-correcting process), and informational limitations regarding the full effects (costs) of its actions within the total technological-environmental situation.

Consequently, for Kapp, free-market capitalism⁵ is a "system of unpaid costs" mainly for institutional (Capital's calculus based on market exchange values) and epistemological (information limitations) reasons:

A) concerns the *impossibility* of achieving societal rationality via private firms' capital accounting standards. The present volume proposes to bring capitalist and humanity's interests more into harmony by expanding the concept of Capital to the Human and Nature to protect them from cost-shifting within balance sheet operations. This is deemed to be in the spirit of Kant's Categorical Imperative.

B) concerns value *incommensurabilities and consequently informational limitations*. The present volume only partly echoes this point, creating a productive tension for the cross-fertilization between both proposals.

Mises never responded to Kapp and instead referred the economic problem of social costs to the judiciary as an issue of property rights violations (Berger 2017). However, Kapp likewise did not say whether or what kind of monetary capital calculus could or should co-exist within a larger framework of substantive rationality based on in-kind calculations. Yet, Kapp's reply to Mises exposes that the SCD's institutional and epistemological dimensions ultimately concern struggles over what kind of knowledge and norms (values) "count" in rational economic calculations regarding opportunity costs

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⁵ Kapp works with Weber's idealtype of economic calculations based on market prices (Wirtschaftsrechnung nach Marktpreisen). The strength of this idealtype is that it allows Kapp to argue in his later work that the problems of this idealtype affect private and public enterprises alike, and are thus not a question of ownership, but rather norms and knowledge. The problem is that Weber apparently had a rather superficial understanding of the actual capitalist accounting practices of his time, including the definition of Capital (see this volume). Another problem is that Kapp later adopted Veblen's concept of Capital, raising questions regarding the compatibility with the Weberian foundations of his thinking. While further investigation is needed, it seems at present however that Kapp's argument is not affected by Weber's limitations.

to secure efficiency. This means that the SCD is really a struggle *over* Truth, which gives rise to a particular economy.

In conclusion, the present volume's history evidences how seemingly earnest yet ideologically blinkered struggles *over* Truth bleed into the history of economic thought: the "Capital Controversies" and the "Socialist Calculation Debate" (SCD) were overcome without being resolved. This not only attests to the limited potential of rhetoric's advocacy of realities as a path to Truth but also reminds us of Schiller's lines that the forever blind will use the "heavenly torch of light" not for enlightenment but to burn down city and countries (Schiller p. 306)⁶: capitalist accountants continue to socialize costs while the concept of Capital actually remains contested and confused in struggles over Truth in economics and even accounting science. These struggles over Truth involve struggles over preanalytical visions and their political ideologies (Schumpeter in Cohen 2013, p. 12, 16), such that the standard for and the concept of Truth itself remain contested (see Robinson's history vs. equilibrium framing of the Capital Controversy; in Cohen 2013, p. 14). All this is a sign that the full hermeneutic-poetic potential of Capital is not only actively eclipsed by its reduction to narrow calculable "money sums" for the sake of pecuniary profits. It also still awaits its hermeneutic future, to which this volume's struggle with Truth opens the door.

Truth as the non-false: correcting and completing capital calculations

In their attempt to untwist the system of make belief Capital, the present book busts several myths regarding the essence of capitalism: neither money, private property, nor (labor) markets and their separation from household activity, but capitalist accounting laws construct the essence of capitalism. The neoliberal myth of freedom, harmony and naturalism is exposed to be nothing but an authoritarian double-truth by demonstrating the rigor, severity and strictness of enforcement of these accounting standards on the whole world by a small capitalist minority in undemocratic fashion: "Certain very harsh laws are adored by capitalists and even their most liberal political allies." (this volume) The story of this book is how the US imposes IFRS globally at the behest of its powerful and wealthy capitalist elites camouflaged by a rhetoric of pluralism and freedom. This also demonstrates that institutions such as the Law and the State are more decisive than custom and spontaneous order, indicating the analytical strength of the Historical School, Social and Institutional Economics over Hayek's Austrianism and Ostrom's Bloomington School of New Institutional Economics. It is strict accounting laws that rule the management of the firm: "the States have not only been agents for the determination of the *structure* of the firms but also, and more importantly, their goals, *their criteria of performance.*" (this volume)

The make-belief system of Capital is also untwisted by the descriptive study of actual capitalist accounting practices (recommended by Veblen long ago; see Cohen 2013 for this point) and a prescriptive proposal for a full-real-cost calculus in the tradition of Kapp (see this volume and Richard 2017 on this point). In this way the current study proposes and prepares the integration of knowledge from critical accounting and critical economics. However, this intellectual project requires further careful study to identify its potentials, problems, and open questions.

⁶ And further to the same point the last stanza of Schiller's poem "The Words of Delusion" (p. 277): "Thus, precious soul, free yourself from the delusion/ And maintain the heavenly belief!/ What no ear did hear, what the eyes did not see,/ it is still the Beautiful, the True!/ It is not outside, where fools seek it,/ It is in you, you bring it forth eternally."

Indeed, many similarities exist between Veblen's and Kapp's economics and the intellectual project of the present volume. Firstly, this applies to their critique of and proposals for an alternative Capital concept. Just like Kapp adopts Veblen's theory of Capital as "immaterial wealth" of social knowledge to secure the social minima in a social provisioning process (see Kapp 2011) the present study states: "Thus, 'capital' as something essential really seems to be, from a corporate and a worker perspective, about knowing precisely how to maintain "good" working conditions and in fact, how to maintain workers-as-real-human-beings in good conditions and involve them in the decisions of their firms." (this volume) Thus, this expanded Capital concept seems to be the practical knowledge (or *techne* in Aristotle's terminology) that secures social provisioning. The influence of the Surplus doctrine's concept of "sustainable income" for this conception of Capital is also evidenced.⁷

Veblen's conception of Capital embodies the concern for maintaining the conditions for survival and livelihood, with a focus on eliminating social waste and satisfying more urgent rather than luxury needs (see Kapp 2011 for this interpretation). Kapp links Veblen's theory with his argument for a substantively rational economic calculation based on the real full (social) (opportunity) costs of (re)production to ensure that the system as a whole is not operating at a loss and that social minima are met. Kapp (1963, p. 17) states: "Nothing is more irrational than an incomplete system of cost accounting. An economic calculus that neglects one part of the costs of production can hardly claim to promote social efficiency." His history of the notion of social costs (1963 p. 36) identified notable economists who also proposed accounting for the "social" or "shifted" portion of the costs of production, citing Oskar Lange's view that making social costs part of a full cost accounting is the hallmark of socialism and noting Lange's reference to John M. Clark's theory of "social overhead costs". The latter proposed the "humanization" of accounting standards within market capitalism (see Berger 2017).

The present volume proposes the CARE/TDL model for macro- and micro-consistent calculations that account for the real full costs (inclusive of social costs) of conserving Capital, which is expanded to cover its financial, human and natural dimensions. The idea is to cost the gap between the actual and the minimally necessary conditions for human beings and natural stocks and funds of production (renewable and non-renewable) in order to be conserved. The authors view their work partly in the tradition of economic theories that understand price as resulting from costs of production, referring to authors such as Smith, Mill and Marshall. (this volume) They also view Kapp as a forerunner who shares "the same philosophy" as their accounting model. The authors refer to his work in the context of determining correct depreciation rules for Capital to reflect real full costs of production. Indeed, it could be argued that this reform proposal is in the main consistent with Kapp's approach: "...we would be on safer grounds if we could rely on objective standards of social minima and measure social costs in terms of shortfalls or deficiencies from social minima." (Kapp 1963, p. 23) The understanding of social costs as a "deficiency" seems to be the common denominator between Kapp and the present volume. This mutual foundation is further strengthened by Kapp's (2015) acknowledgment of the possibility of obtaining monetary exchange values for social costs that provide an initial signal of the

⁷ See also Veblen's use of the notion of surplus in his Capital theory (Kapp 2011). Steppacher has outlined the influence of Surplus doctrine on development thinking (Steppacher 1976). Let us note the influence of ancient Chinese philosopher Mencius on Physiocracy (Marsh 2019) but also the origin of the term "sustainability" ("Nachhaltigkeit") in the German context of forestry science interested in determining the sustainable service rate of the forest as a fund of production. Kapp (1983) also worked on the question of forestry management, noting the antecedents in French mercantilism (Colbert), German cameralism (Moser, Beckman), and Physiocracy (Turgot), but also von Thunen. Kapp's follower Leipert (1989) proposes an expansion of the Capital calculus in order to guarantee the "maintenance of a sustainable income".

importance of the phenomenon: for example lost or wasted resources, as well as compensation, clean-up, and prevention costs for damages can be costed based on market prices.

However, Kapp (2015) also adds critical points that make for a productive tension with the present volume by identifying serious problems with attempts to account for social costs in terms exchange values for purposes of economic calculations whether at the national or the firm level. The mere compensation for social costs is only sufficient if it is at the same time rooted in and reflects scientific knowledge regarding what constitutes real sustainable income flows. This point was elaborated in great detail by Kapp's follower Leipert (1989) who showed the many illusions implied in an increasing level of monetary payments for social costs. These say nothing about whether sustainable income flows are created or whether stocks and funds of production are actually being diminished faster (the vicious cycle of clean-up costs for ever-more socially wasteful production/consumption makes production ever more costly and thus socially inefficient). In other words, what is needed is a centrally coordinated prevention strategy for social costs and determination of sustainable income flows for social minima based on scientific knowledge. This also makes clear that Mises legal solution, which aims to fix the problem of social costs via tort law and compensation payments is insufficient as it suffers from many limitations similar to that of the market calculus. Indeed, in terms of legal frameworks the United Nation's human rights-based approach is much more consistent with Kapp's and the present volume's approach than a property rights-based approach because it de-commodifies social minima and turns them into rights⁸. They are treated essentially as a normative matter of substantively rational economic calculations based on costs of production that may or may not be charged in full to the benefitting citizen. Interestingly, Kapp's engagement with the United Nations and UNESCO on environmental planning and accounting goes back to his work on raw materials under the auspices of the League of Nation in the 1930s, adopting a whole society and humanity perspective regarding the determination of the substantive costs to guarantee a sustainable income and social minima. Recently, commentators have argued that these ideas on guaranteeing human development via social minima are close to those of Sen⁹ (Neves 2018).

But, Kapp (2015) cites further issues with trying to reflect social costs in terms of exchange values: joint-causation between countries, industries, as well as public and private entities, irreversibilities¹⁰ (especially regarding damages to health and life), incommensurabilities¹¹ (heterogenous qualities cannot be adequately homogenized) and time-lags of social costs make it difficult if not impossible to correctly attribute social costs causally to a single firm or even country. Another issue concerns the irrevocable depletion of non-renewable resources as per the entropic nature of the economic process¹², which requires a discount and depreciation rate subject to the present generation's normative evaluation of future generation's needs and technological situation. The latter are

⁸ This point has been elaborated by Franzini (2006).

⁹ It would take us too far afield to assess this claim. At this point, however, it should be noted that Sen adopts an individualist rather than a social perspective, lacks an environmental focus, and does not raise the issue of cost-shifting inherent in capitalist accounting, all of which are in contrast to Kapp. Interestingly, Sen's ideas resonate widely and globally even in mainstream economics, which is also in contrast to Kapp.

¹⁰ This is an expression of Kapp's reference to Kant's dictum: that which cannot be exchanged has no exchange value.

¹¹ Kapp develops and employs socio-ecological indicators for substantive calculations. This is consistent with Georgescu-Roegen's proposals for calculations that reflect the entropic nature of the economic process.

¹² Regarding this problem Kapp refers to Georgescu-Roegen's work since the early 1970s on the entropic nature of the economic process, which is one of the fundamental challenges for calculation in terms of exchange values, which imply reversibility. In particular, Georgescu-Roegen showed how this affects funds and stocks of production differently in the Flow-Fund Matrix. A reformed Capital calculus based on exchange values needs to reflect this understanding.

uncertain and largely arbitrarily assumed.¹³ Additionally, the prevention of social costs is tied up with the creation of social benefits, the value of which is a matter of normative decisions rather than of monetary calculus. Kapp points out that these matters are really a question of how much a society values the heterogenous qualities such as clean air, water or healthy food and the resulting human health, life and wellbeing, which in turn depends on *knowing* all the human consequences of polluted and toxic air, water, and food rather. The question how profitable or efficient it would be for a business to prevent environmental damages cannot provide an answer to these questions.

Consequently, Kapp (2015) prioritizes centrally coordinated social controls of technologies and environmental qualities via calculations in kind of heterogeneous qualities (socio-ecological indicators), as well as investment and allocation decisions. The inclusion of social costs via exchange values in firms' balance sheets, however, is not explicitly ruled out and even deemed "helpful". With regard to the social benefits created by forests Kapp (1983) calls monetary estimates "interesting" that demonstrate 70% of the total monetary value of Germany's forests to be made up of social use functions, such as recreation and environmental qualities; twice that of the value of wood produced. Elsewhere (2015) he argued that despite all their shortcomings Pigouvian taxes based on monetary evaluations are still "better than doing nothing". Indeed, in his reply to Mises Kapp left open the question of precisely what kind of Capital calculus should be applied by firms (whether public or private) to prevent cost shifting that constantly undermines every achievement of substantively rational economic calculations at the societal level. In my view it is here that the present volume makes a real contribution by complementing Kapp's proposals with a proposal how firms' accounting standards can be made to simulate substantive rationality.

While there seems to be a tension here between Kapp and the present volume's focus both are in full agreement on the need for democratic control of the techne of economic calculations (see below). Kapp (2015) maintained that only central coordination based on science can guarantee that all effects on human life, health and well-being are taken into account by grasping the total situation in terms of technology and social needs. Individual accounting and decision-making that is by itself informationally too limited is thus socially controlled, augmented and improved. Kapp warned that the decentralized planned Soviet economy operating with private incentives for managers to maximize net income flows will create high social costs as it incentivizes the minimization of costs. In other words, Kapp anticipated the point made by the authors of the present book that the Marxist focus on eliminating private property is insufficient to prevent the socialization of costs. On this point, Kapp (1963, p. 36) cites Pigou who rejected the thesis that public ownership guarantees the elimination of social costs due to the enduring difficulties of obtaining needed data for calculations and measurement of relative costs/benefits of alternative methods of adjustment. ¹⁴ Kapp (1963, p26) states that whether the planned economy prevents social costs depends on whether these are taken into account and prevented. In other words, as long as the accounting systems are not controlled democratically to account and prevent social costs the planned economy is nothing but State capitalism that is likely to produce the same level of social costs as free market capitalism. Kapp was aware and discussed in detail the challenges that emerge in substantively rational economic calculations on the political level and proposed solutions¹⁵. While Kapp argued that individual decision-making is by itself informationally too limited to account for the real full cost of production,

¹³ Leipert (1989) suggested that one – albeit imperfect - way to deal with this difficulty might be to cost the development of renewable resources that can substitute for non-renewables and include them in expanded economic calculations.

¹⁴ A similar point was made by John M. Clark in a letter to Kapp (see Berger 2017).

¹⁵ This project was pursued further by Kapp's follower Leipert in the context of Germany (Leipert 1989).

he also neither explicitly denied Mises argument that firms need calculations based on market prices to determine opportunity costs and produce efficiently, nor the possibility of reforming the Capital calculus to make firms' decisions more consistent with the objectives of substantively rational calculations.

Indeed, one of the main goals of Kapp's dissertation (1936) was to show the open questions in the plurality of proposals for socialist calculation, which transcend simple socialization of ownership: the socialization of costs can continue even with social ownership if firms accounting standards remain incomplete and twisted. Much like the argument of the present book, Kapp did not advocate the abolishment of private property, markets, money, or economic calculation based on opportunity costs. He believed that calculations in kind to achieve substantively rational social provisioning with a focus on preventing social costs was the key to achieve a socially efficient economy. Indeed, Kapp (2015) adopted Weber's notion of the substantive meaning of economic rationality as a social provisioning process inclusive of social (opportunity) costs and benefits calculations. This reasoning maintains its root in the notion of opportunity costs, albeit now social opportunity costs, which apparently originated with capitalist accountants in the 15th century (see this volume).16 The determination of social opportunity costs is part of the process of determining the social costs. In other words, achieving social minima through the creation of social benefits incurs social (opportunity) costs. The reliance on scientific knowledge regarding these social minima objectifies calculations as much as possible, narrows the range of possible paths, removes them from the largely arbitrary market calculus and embeds them in normative evaluations of democratic decision-making.

The authors of the present volume argue that a rejection of numbers in economics implies a rejection of price and exchange value and that the problem does not reside in numbers or markets per se, but the system of make-belief Capital calculus. Hence the solution is not about escaping calculation but a reform of the techne of Capital calculus that protects human beings and nature as funds of production from cost shifting by accounting for their true costs of conservation. The ideal is a "new homo oeconomicus" as a "new homo computans", "not their repression" (this volume). Such conversion of techne into algorithmic knowledge based on exchange values for the sake of individual firms' decision-making as well as the calculation of the net domestic product *can* be consistent Kapp's proposal: both share the same concept of Capital, both calculate social costs as the gap between the actual state and the social minima, and both share a concern for sustainable income. But, this consistency is only sufficient if the formally rational calculus based on market values is subordinated to substantive goals in the form of scientifically established and social agreed minima, reflecting conditions for a sustainable income. The present volume suggests that this indeed the overall goal.

Truth as the Unconceiled, or: What is Lost in Calculation?

The above makes clear that Capital's calculus is a combination of the techne of Capital and algorithmic knowledge that can either be based on exchange values or on social use values ("in kind" or "real terms"). This form of knowledge is different from hermeneutics and indeed annihilates the essential being of the Human, which is the understanding of Truth as the un-conceiled (Heidegger 2010). However, the democratic control of techne-algorithm proposed by present authors and Kapp links up with post-Heideggerian traditions of hermeneutics that think through its relationship with praxis, in

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¹⁶ It is worth noting that Kapp knew the importance of Lucas Pacioli's work and included an excerpt of his treatise on double entry book-keeping as one of the foundations of contemporary Western civilization in the source book he co-edited at Columbia University. (Kapp et al. 1946) The present volume establishes the significance of Pacioli for capitalist accounting practices.

particular the works of Arendt, Gadamer, and Habermas. (Bernstein 1983) Consequently, it can be surmised that the present authors agree with Kapp who views the economy - in the tradition of Weber - as a normative decision-making process about opportunity costs to achieve efficiency, rather than a purely technical problem. For Kapp, social economy then means the social evaluation of that which has to be forgone in order to achieve social minima with the aid of Capital's calculus, i.e. the social opportunity cost. Efficiency then means achieving social minima with the lowest social opportunity costs that have been deemed desirable in a social decision-making process. The latter involves struggles over the contending truths of Capital calculations - including but not limited to rhetoric as advocacy of reality. However, this is not the same as struggles with Truth that yield a poetichermeneutic understanding of the Human in its interrelation with the social and natural environment. The latter is the only way of understanding what is lost in calculations of Capital and must be the starting point for struggling over that which has to be forgone to secure social minima. This is particularly relevant in questions concerning the survival of the whole of humanity inclusive of future generations where techne-algorithm is far too limited as a basis for decision-making. On this point let us refer to what is lost in arithmomorphic (numbers-based) reasoning: the economic process is open and constantly changing qualitatively such that arithmomorphic reasoning and models represent only similes of actual processes. Careful observation of these processes of change is a precondition for understanding while words with a penumbra of meanings is a precondition to describe them. (Georgescu-Roegen 1979, p. 325)

Conversely, Veblen - who started from the same concept of Capital, aimed at the same prevention of social waste and inefficiencies, and adopted a hermeneutic philosophy (on this point see Mirowski 1987) - arrived at the conclusion that democracy is impotent in the face of make-belief Capital. For Veblen, only a will to the techne of Capital secures the conditions for a full flowering of human creativity and prosperity. His notion of economic efficiency is then more akin to an engineering problem of producing maximum output at lowest overall real costs.

Indeed, the present volume argues for "thinking radically differently" and that Capital is as much about "cosmology" as it is about "imaginary", and even "an end in itself". The fundamental idea is to reembed the economy into ethics via reforms of legal accounting standards to conserve Capital. It also calls for ontological studies of Nature to find out what it is, but also its function in the complex whole, and how much can be used in order to conserve it. Not only is the notion of limits in nature related back to Plato, and the critique of Chrematistics to Aristotle and Pope Francis, but also the idea of the conservation of the work force in price determination is referred back to the scholastic debate and Donus Scotus. This was apparently inspired by Coux who aimed at embedding the economy into ethics, which Schumpeter considered to be the origin of modern economics (present volume)

Similarly, Kapp (1961) argues for radical changes in terms of the conceptual basis for economic thinking, aiming at a positivist integration and humanization of social knowledge. The key for his proposal is his concept of the human being as an open system allowing the systemic generation of scientific (empirical) knowledge about social minima and the current state of human health, life and wellbeing. Furthermore, Kapp (2015) states with reference to Marshall that the goal of substantive rationality (social efficiency) cannot be dissociated from the "ultimate aims of man". In other words, it is not possible to detach Kapp's thinking from his fundamental ethics echoing the teachings of the poet Ernst Wiechert (Berger 2017), i.e. "the prevention of human suffering", of which the prevention of social costs is as much part as the creation of social benefits to meet social minima. For Kapp, this is also about preventing a vicious circle, in which devastations of human beings trigger further atrocities.

The present volume is thus consistent with re-rooting the techne-algorithm of Capital's calculus in hermeneutics as a struggle over and with Truth. In other words, while a make-belief concept of Capital for the sake of pecuniary profits gives rise to a twisted calculus, a poetic-hermeneutic struggle with Truth as the unconceiled is the basis for rhetorical struggles over the correct and complete Capital calculus. There are thus no fundamental impossibilities for techne-algorithm of Capital's calculus – whether in natural kind or in market prices - to function as a preliminary simile for hermeneutic Truth simply for the practical purpose of securing social provisioning. In this perspective there are also no insurmountable problems for combining calculations in kind and their social evaluations with corrected and completed calculations of monetary exchange values on the level of firms. This means costs of production based on market prices are more "right" if they reflect full real costs determined in calculations in kind within a substantive rationality. But this does not mean that Truth as the unconceiled and truth as the non-false techne-algorithm (in the sense of correctness and the correspondence theory of Truth) are the same thing. While all techne-algorithm involves some form of Truth, not all Truth involves techne-algorithm. What is more, there seems to be a trade-off between these Truths. The more time and space is taken up in debating and correcting social cost calculations to account for every one of the environmental effects of the ever-increasing complexity of modern technology in production, the more the Human is annihilated, constituting itself a loss or social opportunity cost. Arguably then, economy needs to be re-rooted in poetic intellection to retrieve this lost hermeneutic whole of the Human and to understand the fuller scope and meaning of social opportunity costs involved in securing social minima via the techne-algorithm of Capital's calculus. In this way, Capital - as an ideal of absolute completion - can indeed initiate an infinite movement in search of the unconditional, fulfilling the terms set out by Novalis for a Romantic science.

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