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CARL MENGER'S CONTRIBUTION TO CAPITAL THEORY

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The common interpretation of Carl Menger's take on capital theory rests upon a few sentences in his *Principles of Economics*. His later monograph on the topic, *Zur Theorie des Kapitals (A contribution to the theory of capital)*, is more or less ignored, although it must be seen as a recantation of his earlier views. As it becomes clear in this work, Menger would have opposed all attempts to define capital as a heterogeneous structure of higher-order goods – a definition that is associated with his name today. In his opinion capital is a homogeneous concept stemming from accounting practices. The debate about Menger's view on capital does not only concern terminological points, but involves the subject matter of capital theory. A theory of capital based on Menger's later view would concentrate on the way the market economy is organized and not on technical characteristics of a multi-stage production process.

1. INTRODUCTION

CARL MENGER's contributions to the origin and the theory of money have attracted much interest in recent years (see O'Driscoll 1986; Stenkula 2003; Alvaraz 2004; Ikeda 2008; Arena/Gloria-Palermo 2008; Alvarez/Bignon 2013). In contrast, Menger's take on capital theory has rather been treated as an orphan. The interpretation of his view on capital overwhelmingly rests on the English translation of his *Grundsätze der Volkswirthschaftslehre* (*Principles of Economics*, Menger 2007 [1871]). In this book, Menger indeed sketches his view on capital, but he does so only in a lengthy footnote (in the translation, it is an appendix). Garrison (1990; 2001), Rothbard (2004), Skousen (2007), and Huerta de Soto (2012), who all stand in the Mengerian tradition and deal with the theory of capital, do not even mention that Menger has also written a monograph on capital entitled «*Zur Theorie des Kapitals*» (*A contribution to the theory of capital*, Menger 1888). Others like Lachmann (1976), Streissler (1972), Ravix (2006), Kirzner (2010), and Endres and Harper (2011) mention this publication in passing, but do not recognize the fundamental turn in Menger's viewpoint on the theory of capital. Endres (1997) is the only one who takes Menger's monograph into

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account in some depth; however, like the other authors, he argues that the monograph is only an *extension* of Menger's short discussion of the topic contained in the *Principles*. In general, it is fair to say that today's view concerning Menger's take on capital rests upon a footnote. In this paper, it is demonstrated that this state of affairs has caused blatant misinterpretations. For Menger, once he had dealt with the issue in more depth, capital did not consist in the heterogeneous structure of producer goods, as is usually maintained. On the contrary, Menger was of the opinion that capital must be interpreted in the way common parlance does, i.e., as a homogeneous concept depicting sums of money on ordinary business accounts. In fact, he vigorously opposed all theories that dissented from this ordinary business view on capital, including the one that is commonly imputed to him.

The second section of this paper shortly presents the common and familiar interpretation of Menger's take on capital theory. Generally, it is taken for granted that he considered capital to be a combination of heterogeneous producer goods. In section three, it is shown that this interpretation is not completely erroneous; with reservations, it can be based on what Menger said in his *Principles*. Later on, however, Menger turned against these earlier remarks and criticized economists for establishing new meanings for the term 'capital' and, at this, ignoring common parlance. Section four presents his critique of these scientific notions of capital. From his discussion, it becomes clear, among other things, why he vigorously opposed Eugen von Böhm-Bawerk's capital theory. He might even have considered it, as Schumpeter (1954, 847, n. 8) maintains, as «one of the greatest errors ever committed». As it will be demonstrated, Menger (1888) opposed any attempt to define capital as a heterogeneous structure of higher-order goods. Yet, several authors of high standing back the contrary point of view, namely that Menger was consistent on capital theory during his life time. Accordingly, in a recent debate on a similar issue Endres and Harper (2014) tried to support their thesis with an argument from authority. In order to invalidate this kind of argumentation, section four also presents several remarks by Schumpeter on Menger's change of mind. Menger's positive take on capital theory is contained in section five. According to Menger, capital must be interpreted as a homogeneous accounting concept that only makes sense in economic calculation. Section six discusses the role of Menger's contribution to capital theory from a present-day perspective. Actually, the debate about the 'correct' capital concept does not concern only mere terminological points. Menger's monograph stands in the tradition of an approach that deviates from the conventional ones in arguing that capital theory is not concerned with the production process but with the organization of the economic system more broadly defined as 'capitalism'.

2. The common view on Menger's theory of capital

In his *Principles of Economics*, Carl Menger introduced a concept that has become a pivotal element of the economics of the Austrian School. In his discussion of the production process he distinguished not only between production and consumption as such, as the classical authors had done before him (Skousen 2007, 16), but introduced *the notion of the different orders of goods, as well.* According to Menger, consumption goods are first-order goods while goods that help to produce these are second-order goods. Those that help to produce these are third-order goods and so on (Menger 2007 [1871], 55 ff.). Consequently, higher order goods, such as raw materials, tools, and machinery, are not homogeneous but, according to their order, occupy different stages in the production process.

In short, Menger de-homogenized the production process. He did so because he thought that Adam Smith (1776), in his *Inquiry into the Nature and Causes of the Wealth of Nations*, «has cast light, in his chapter on the division of labor, on but a single cause of progress in human welfare [that is, the division of labor] while other, no less efficient, causes have escaped his attention» (Menger 2007 [1871], 72). From Menger's point of view, one very important cause of economic growth lies in the extension of human plans to the goods of higher orders (Menger 2007 [1871], 73; Ravix 2006, 161). Therefore, in his discussion of the value of goods, he not only covered consumption goods, but also the value-formation of the goods of higher orders (Menger 2007 [1871], 149 ff.). He thus incorporated the heterogeneous structure of higher order goods into the corpus of economics.

It is well known that later economists have taken over this concept from Menger. Böhm-Bawerk (1930 [1889]) and Lachmann (1978) elaborated on it to extend their own capital theories and Hayek (1935, 32 ff.) adopted it as a part of his theory of the business cycle (see also Huerta de Soto 2012, 511). It is not the point of this paper that capital or business cycle theories stressing the heterogeneity of the production structure are misguided in referring to Carl Menger. There is no question he indeed introduced the concept. However, it is argued regularly and without any kind of qualification that Menger acknowledged the consideration of the different orders of goods as a crucial part of *his own capital theory*. To give an example, Garrison (1990, 135, emphasis added) argues that, in Menger's point of view, higher order goods

> are transformed sequentially into goods of lower and lower order until ultimately they emerge as consumers' goods. The time element in the production process was built right into *the concept of capital.*
>
> (See also Magnan de Bornier 2008, 219)

It is important to note that those discussions of Menger's capital theory that make allowance for his monograph do not object to this conventional interpretation. Even Endres (1997, 168 f.), who deals with Menger (1888) at some length, argues that the latter is merely a further development of Menger (2007 [1871]). Endres (1987; 1997) and Endres and Harper (2011) maintain that the notable feature in Menger's capital theory – both in the *Principles* and in the monograph – is his emphasis on the *heterogeneity of capital* and on the consequent character of capital as a «multi-dimensional combination of higher order goods» (Endres 1997, 168) or, even more precise, as «an ordered, structured, and selected combination of economic goods used to produce other goods» (Endres and Harper 2011, 361; see also Streissler 1972, 435). Endres and Harper (2011, 369) therefore class Menger with Lachmann concerning their respective views on the nature of capital (see also Braun 2014).

Lachmann (1978, 4) indeed demands that «we must regard the 'stock of capital' not as a homogeneous aggregate but as a structural pattern». There is no doubt that he believes capital resources are heterogeneous (*ibidem*, 2). Furthermore, Lachmann's capital theory directly relates to the production process. It is «the various production plans which determine the use to which each capital good will be put» (*ibidem*, 10). In the following sections, it will be demonstrated, however, that it is a serious misinterpretation to equate Menger's and Lachmann's viewpoints on capital. Once Menger had thought about the matter, he had a totally different concept of capital in mind than the one that is commonly imputed to him and whose adherents refer to Menger as a predecessor. In his opinion, capital was neither a heterogeneous concept nor did it have anything to do with production. Rather the opposite is true. He considered it necessary to regard capital as a homogeneous entity expressed in sums of money, not as a production factor of any kind. Although the point that Menger (1888) stresses the connection between capital and money is at least mentioned by some economists, for example Stigler (1937, 249 f.), Endres (1987, 304; 1997, 169 f.), and Hayek (1934, 410 f.), so far nobody has systematically presented Menger's contribution to capital theory or indicated the turn in his view on the matter.

3. Menger's capital theory as contained in his *Principles*

It cannot be denied that Menger himself must partly be blamed for the prevailing misinterpretation of his capital theory. In his *Principles*, he indeed seems to have a heterogeneous concept of capital in mind. In the section on *The Productivity of Capital*, he more or less equates capital

with higher-order goods. He (2007 [1871], 155) says that one possesses capital if one «already has command of quantities of economic goods of higher order [...] in the present for future periods of time». Yet, these few words are all of substance that he has to say about capital in the main text. In the corresponding appendix, he repeats this statement. He (2007 [1871], 303, emphasis by Menger) adds, however, that the term 'capital' must not be used as a byword for production goods. The «classification of goods into means of production and consumption goods (goods of higher and goods of first order) is scientifically justified, but does not coincide with a classification of *wealth* into capital and non-capital». The former classification, he argues, rests «on the *technical* instead of the *economic* standpoint». He (*ibidem*, 304, emphasis by Menger) later becomes more precise:

> The most important difference between capital on the one hand and items of wealth that yield an income (land, buildings, etc.) on the other is that the later are *concrete* durable goods whose services themselves have both goods character and economic character, whereas capital represents, directly or indirectly, a *combination* of economic goods of higher order (i.e., complementary quantities of these goods).

According to this statement, not higher order goods as such, but only combinations of them can be called capital. It is not surprising that, as was shown above, many economists have taken these statements as the basis for their interpretation according to which Menger identifies the theory of capital with the analysis of the *heterogeneous structure* of higher-order goods used in production.

What is more, and unlike Ravix (2006, 166, n. 14) and Endres (1987, 304; 1997, 169) maintain, in the same footnote / appendix Menger explicitly turns *against* the view on capital prevailing in ordinary life. Businessmen, in their calculations, do not regard capital as heterogeneous, but usually reckon capital homogeneously in terms of money. The corresponding interpretation of capital as a sum of money Menger (2007 [1871], 304) considers a «much too narrow» viewpoint. «[T]he concept of money» he adds «is entirely foreign to the concept of capital» (*ibidem*, 305).

Now, it must not be forgotten that, in his *Principles*, Menger deals with the capital concept only cursorily. Stigler (1937, 248), for example, laments «the virtual absence of any theory of capital». Accordingly, Menger's definition of capital is not very precise (see *ibidem*, 249). To say that capital represents, directly or indirectly, a combination of economic goods of higher order – or complementary quantities of these goods – leaves plenty of opportunity for speculation. It neither becomes clear what he wants to tell us with the distinction between 'directly' and 'indirectly,' nor what he exactly understands by the word 'combination'. Is

the combination itself capital? Or do particular economic goods become capital in so far as they are combined with other goods in production? Menger does not tell us. Therefore, today's Austrian capital theorists and historians of economic thought act prematurely when they base their view of Menger's capital theory on the few sketches his *Principles* contain. They should pay much more attention to what he has to say in his monograph on the subject where he, among other things, recants his earlier view according to which capital constitutes a combination of higher-order goods.

4. Menger's viewpoint on capital as contained in his monograph

4.1. *Menger's turn against the scientific theories of capital*

As Hayek (1934, 410) remarks, we owe Menger's 1888 monograph on capital to the fact that he «did not quite agree with the definition of the term capital which was implied in the first historical part of Böhm-Bawerk's *Capital and Interest*». The second positive part of the same work was finished in the same year as Menger's *Zur Theorie des Kapitals* appeared, and it is suggested that the latter was written as a prepublication attempt to refute the theory contained in the former (Streissler 2008, 371). At first glance, it seems strange that Menger opposed Böhm-Bawerk's capital theory. It becomes obvious from reading the latter's work that it was supposed to develop exactly the theory of capital that was shortly sketched in Menger's *Principles* (see Stigler 1937, 249; Ravix 2006, 158). Right at the outset of his section on the *The Nature of Capital*, Böhm-Bawerk (1930 [1889], 17) refers to Menger's classification of goods into those of lower and higher order. His definition of capital consequently is reminiscent of what Menger says in his *Principles*:

> [T]he kind of production which works in these wise circuitous methods is nothing else than what economists call Capitalist Production, as opposed to that production which goes directly at its object [...]. And Capital is nothing but the complex of intermediate products which appear on the several stages of the roundabout journey.
>
> (Böhm-Bawerk 1930 [1889], 22)

The term 'complex of intermediate products' does not seem to be too far away from Menger's 'combination of economic goods of higher order'. So why did Menger nonetheless oppose Böhm-Bawerk's definition? In order to understand this step, it is necessary to have a closer look at Menger's monograph. It is interesting to note that, whereas he had turned against the popular notion of capital in his *Principles*, he must have changed his attitude before 1888. At the very outset, he declares that it is

a mistake that cannot be disapproved of enough when a science [...] denotes completely new concepts by words that, in common parlance, already describe a fundamentally different category of phenomena – a category that is also important for the respective discipline – correctly and properly.

(Menger 1888, 2)

He deplores that this mistake has been committed by most economists dealing with the theory of capital. The «word 'capital' has been used for whatever kind of new, scientific categories that the evolving theoretical discussion brought to light» (*ibidem*, 2). He considers this to be, first, «a serious terminological aberration», and second, a source of substantial mistakes whenever «in the course of the exposition the new notion of capital was tacitly identified with the popular notion, be it because of carelessness or unclarity of the mind» (*ibidem*, 2).

Therefore, he opts for a «real notion of capital» (*ibidem*, 2). By 'real,' he just means 'realistic' (see Heller 1941, 383, n. 3). He thinks of the 'popular' notion of capital, the one «that is familiar to businessmen» and that is «obtained from the direct observation of life and the permanent practical occupation with capital» (all quotes from Menger 1888, 2). On page 6, he adds that «no science, least of all a science like economics which deals with phenomena of everyday life, has the right to [...] arbitrarily redefine popular terms». So what he does here, without explicitly saying it though, is that he repudiates what he had written about capital in his *Principles*. There, he had rejected the popular notion of capital and had instead introduced a capital concept that fitted his findings on the way production is divided in several stages. Consequently, as will become clear below, he now implicitly turns against Böhm-Bawerk's theory of capital as well. The latter, as we have seen, is built on Menger's original notion of capital.

Menger continues by demonstrating why all other views on capital, that is, all views that differ from the popular one, have to be dismissed. He is of the opinion that there are four basic conceptions of capital in economics. Three of them are, as one would say today, microeconomic in nature. Capital, he writes, is supposed to consist of

first, those parts of the wealth of a person that are dedicated to the acquisition of income as opposed to the provision of articles of daily use;

second, the means of production as opposed to the products (resp. the nascent consumption fund as opposed to the actual consumption goods), finally

third, 'products' dedicated to further production as opposed to goods of a different kind (the respective natural resources and labor services) dedicated to production.

(Menger 1888, 4)

The fourth conception of capital he criticizes is a macroeconomic one that he calls «capital from the standpoint of society».

Menger dedicates 33 pages to the refutation of these four notions of capital. As it is the purpose of this paper to work out Menger's view on capital, the following synopsis of his critical remarks concentrates, on the one hand, on the question as to why he has abandoned his earlier, scientific theory and instead adopted the popular view, and, on the other hand, on what he has to say about other significant capital theories.

4.2. *Capital as wealth dedicated to the acquisition of income*

The first of the three microeconomic views on capital according to which capital comprises all parts of the wealth of a person dedicated to the acquisition of income Menger deals with only shortly. He is of the opinion that, with such a theory, it is impossible to understand the complexities of the income phenomenon.

> If anything that yields income or even only provides a fairly durable utilization is called 'capital,' then not only the owner of circulating assets that fall into the category of acquisitive wealth earns capital income without distinction, but also the laborer does so for his manpower, the farmer for his land, the owner of goodwill, even the owner of an apartment building for the latter.
>
> (*Ibidem*, 6 f.)

Menger deals with this theory because it had been en vogue in Germany during the time he was writing (*ibidem*, 5). It might be interesting to note that he, thus, also delivers an anticipatory critique of Irving Fisher's capital theory. For the latter, as is well known, capital constitutes a fund and income a flow (Fisher 1906, 52). To give an example, in Fisher's point of view, «a dwelling house now existing is capital; the shelter it affords or the bringing in of a money-rent is its income» (*ibidem*). Menger ascribes such a view to the fact that some economists do not care about the nature of the respective phenomenon, nor even about linguistic usage, but only about the etymology of the words. «Etymologically, the word 'capital' indeed traces back to 'caput,' the head or main good as against its utilizations, its fruits etc.». (Menger 1888, 8). Yet, he considers it a «deformation of the theory of capital and income [...] to call an armchair 'capital' because its ownership allows us to have a siesta, and to call the relaxation it affords 'income'» (*ibidem*, 7, n.). Such a categorization, he argues, is of no help in the theory of the different sources and fields of income (*ibidem*, 7).

4.3. *Capital as means of production*

His critique of the second microeconomic view which identifies capital with the means of production as against the products is much more important for the understanding of his view on capital. This is so because the conception of capital as a means of production is pretty close to

what Menger had advocated in his *Principles* and, therefore, also to Böhm-Bawerk's capital theory. In order not to be misunderstood, he starts out in defending the meaningfulness of his famous classification of goods into those of higher and lower order. He (*ibidem*, 9, parentheses by Menger) says that the

> importance of the rigorous distinction between consumption goods (goods of lower order) and means of production (goods of higher order) and the different gradations of the latter in respect of the final product will, as I believe, only be recognized in the future, especially with regard to the theory of the connectivity of the value or the price of the production factors.

He persists in what he had said on the relevance of this classification in his *Principles*. And, like in his *Principles*, he continues by warning the reader not to take the above distinction as a basis for the classification of capital. Yet, in his *Principles* the point was that it is not the concrete economic goods but only a *combination* of them that constitutes capital (Menger 2007 [1871], 304). Now, he presents a totally different reason. He argues that there is nothing inherent in goods of higher order – or in their combinations – that makes them qualify as capital. First, there are a lot of means of production that are free goods, like water. Nobody, however, would maintain that water – as far as it is a free good – is part of the capital of an economic agent (Menger 1888, 9). Second, every private household uses all kinds of different means of production, like unprocessed foodstuff and combustible material. Means of production which are employed in this manner, however, «are not acquisitive wealth, let alone 'capital,' but 'provisions of the private household'» (Menger 1888, 10). Third, consumption goods in the hands of producers and retailers are capital in the same way as means of production are in the hands of these people (*ibidem*, 10). He summarizes his point in saying that

> [t]here is both capital that does not consist of means of production and means of production that are not capital. [...] It is a fundamental error to take the fact that a good is a means of production from the technical point of view as a criterion for the distinction between capital and those parts of the acquisitive wealth of a person that are not capital.
>
> (*Ibidem*, 10)

This argument provides the first hint as to why Menger vigorously opposed Böhm-Bawerk's definition of capital as 'the complex of intermediate products', as it is reported in his remark to Schumpeter to the effect that the «time will come when people will realize that Böhm-Bawerk's theory [of capital and interest] is one of the greatest errors ever committed» (Schumpeter 1954, 847, n. 8). Böhm-Bawerk's definition only refers to the *technical* characteristics of goods. The flour that some-

body uses to bake a cake for a private birthday party also is an intermediate product, but nobody would dare to call it 'capital'. In contrast to what Endres maintains, Menger does not confine his critique to Böhm-Bawerk's concept according to which capital consists in a complex of *intermediate* – that is, produced – goods. Endres (1987, 304; 1997, 168) argues that Menger (1888) disapproves of Böhm-Bawerk's capital concept because the latter stresses the technical *origin* of intermediate goods as *produced* means of production (see also Hayek 1934, 410 f.). This point, however, refers to the third microeconomic view on capital dealt with below. From Menger's treatment of the second view that is at issue here, it becomes clear that he rejects *any* theory that equates capital with higher order goods, a combination of higher order goods, or a heterogeneous structure of higher order goods, for confounding the technical point of view with the economic one – no matter whether the higher order goods are *produced* or not. In other words, Menger implicitly recants what he said about capital in his *Principles*. To further the above example, if one wants to bake a cake for a birthday party, flour alone is of no help. One further needs eggs, sugar, butter, and baking powder, also baking-dishes, a mixer, and an oven, *and also* some basic knowledge of the baker's craft which definitely is not a *produced* means of production. In short, a combination of higher order goods, a structure of heterogeneous production goods is necessary to bake a cake. Nevertheless, Menger's belief is that production processes like this, although they take place in every household every day, have nothing to do with capital theory. Therefore, he must be considered as an opponent – rather than as an advocator – of capital theories that define capital in the above way. He must not be classed with Lachmann (1978), as Endres and Harper (2011) would have it. In fact, he delivers arguments *against* such capital theories.

Our argument runs contrary to the established opinion on Menger's point of view on capital. In a recent paper, Endres and Harper (2014, 106) could argue that «no historians of Austrian economics of high standing (e.g., Hayek, Schumpeter) have ever noticed or commented upon an alleged break in his [Menger's] thinking on the subject». The remaining lines of this section are dedicated to the refutation of this kind of argument.

It seems to have gone completely unnoticed that Schumpeter not only hinted at Menger's opposition to Böhm-Bawerk – his famous dictum was quoted above – but in several places also clearly indicated the turn of Menger's own position. In Schumpeter (1908, 427, emphasis added), he says that he himself is very close to «one of the *two notions of capital by Menger*». Four years later, Schumpeter became more precise. In an appendix that was not translated into English (see Schumpeter 1936 [1911],

XII) he writes that Menger, «after he had constructed a materialistic concept of capital in earlier times [1871], later [1888] established a concept that is very close to our [Schumpeter's] own one» (Schumpeter 1997 [1911], 187). Finally, in Schumpeter (1954, 899, italics and second square bracket by Schumpeter), he once again refers to the change in Menger's point of view, this time explicitly mentioning Menger 1888:

> [Between 1870 and 1914] capital tended to become a fund or a sum of assets consisting of money or evaluated in money. This tendency shows well in the work of Menger, who at first, in his *Grundsätze*, defined capital as 'goods of higher order,' but later on (in his contribution to the theory of capital, 'Zur Theorie des Kapitals,' [...]) as 'productive property ... [considered] as a sum of money productively used'.

It is obvious that Schumpeter was well aware of a shift in Menger's standpoint and that, in his opinion, Menger (1888) was not an elaboration of Menger 2007 [1871]. In short, not all authorities on the topic oppose our argument that Menger (1888) was an implicit recantation of Menger (2007 [1871]). The arguably highest authority backs it. Unfortunately, Schumpeter did not elaborate on this point, which might explain why subsequent authorities missed it.

4.4. *Capital as produced means of production*

The last of the three microeconomic views on capital Menger (1888, 11 f.) ascribes to Adam Smith. For the latter – apart from some inconsistencies in his argument – only *produced* means of production are capital. Menger hurries to tell us that, in this view, the term 'production' must not be understood in the technical sense. Rather production means the «process of the generation of income» (*ibidem*, 12). He considers this point of view as «by far the most important one» (*ibidem*, 11), and before he proceeds to its refutation, he summarizes it in the words:

> In the final analysis, the Smithian theory understands by capital: acquisitive wealth – thought of as a source of income – in so far as it is a product, in contrast to acquisitive wealth in so far as it is a natural factor, resp. in contrast to bare manpower.
>
> (*Ibidem*, 13)

As was indicated above, some commentators, following Hayek (1934, 410 f.), have taken the subsequent discussion as an implicit rejection of the capital theory of Böhm-Bawerk who, with his concept of intermediate goods, like Smith focuses on the technical origin of goods. It should be clear from what was said in section 4.3, however, that Menger's critique of Böhm-Bawerk's theory not only covers the technical *origin* of goods – as it surely does – but also, more generally, any attempt to identify capital and the technical means of production. What is at issue in the following, therefore, is only *one* of the two flaws that

Menger noticed in Böhm-Bawerk. The other one – the identification of means of production and capital discussed above – was part of Menger's former theory as well. It should be added that the core of Adam Smith's view – the distinction of several factors of production of which capital is one – forms the basis of modern growth theory to this day (see e.g. Acemoğlu 2009).

Menger (1888, 14) begins with stating that Smith's trichotomy of acquisitive wealth – labor, capital, and land – contradicts experience. Nobody could deny that not only products can become capital, as Smith maintains, but also pure natural factors which supposedly constitute a separate production factor. In some cases, there is no meaningful difference between a natural factor and a product.

> Who would dare to maintain that a naturally grown trunk that is used in shipbuilding does not constitute capital whereas an artificially raised trunk of the same quality actually does constitute capital.
>
> (*ibidem*, 15?)

The argument according to which the former trunk is still a product as some labor has to be invested in order to find or to occupy it, Menger rejects by arguing that, seeing it in this way, there would not be any natural factors at all as everything has to be occupied somehow (*ibidem*). Furthermore, he continues, there is no reason for the fact that, in the view that is at issue, mobile natural factors (like the said trunk) entirely become a product and thus capital by means of labor that is spent on them, whereas immobile natural factors (most notably land) do not become a product this way, or at least not entirely but only to the extent that costs and labor have been spent on them (*ibidem*, 16 f.). This exception he considers indefensible.

He goes on in saying that the three categories have nothing at all to do with the question as to which goods can become capital and which cannot. This is especially true for human labor and its services:

> There is no doubt that slaves can become 'capital' in the same way as products can, for example fixed capital in the hands of a planter, even circulating capital in the hands of a slave dealer. But also the services of free workers are 'capital' for the business of the entrepreneur as soon as the latter buys labor services (rents workers) in order to sell these services or their results with some profit.
>
> (*Ibidem*, 18)

In short, «not only natural factors and products of labor, but all goods of whatever kind can become capital for the entrepreneur» (*ibidem*). Even goods that do not fall in the three categories at all can do so. Menger mentions the right of land use that can become capital for a tenant and the right of use of sums of money that can become capital for a banker (*ibidem*, 19). So the technical origin of a good is of interest only

in so far as its past or its history is considered. For economic action, the above classification is irrelevant (*ibidem*, 22).

In the following pages 23-27, Menger addresses the point that the classification of production factors into labor, produced means of production, and natural factors is based on *technical* considerations. From an *economic* point of view, however, the technical origin of production factors has nothing to do with the income that they generate, and in many cases the income cannot in any way be imputed to them.

4.5. *Capital from the standpoint of society*

After finishing the critique of the microeconomic points of view on capital and ridiculing them in an additional section (*ibidem*, 27-29), he turns to the macroeconomic point of view on capital. He calls it «capital from the standpoint of society» (Das Kapital vom Standpunkte der Volkswirtschaft) (*ibidem*, 30). In this view, the whole society is thought of as a single subject, and the term capital that stems from the observation of individual agents is applied to the nation as such (*ibidem*, 30). As a consequence, economists endorsing this vision exclude from their definition of 'capital' all goods that are not technical means of production, that is, all goods that do not help society to increase the provision of goods. On the other hand, other things, like the judiciary and the educational system and even the state, are included by some authors as they are a source of economic well-being for the nation (*ibidem*, 30 f.).

To this series of arguments, Menger (1888, 32 f.) replies that

> [W]hat is called the 'economy' [Volkswirtschaft] is not the 'enterprise of the nation' [Wirtschaft des Volkes] in the literal sense, just like a theater is not an 'aggregate actor,' a library not an 'aggregate book'. The economy is an organism of economic agents, not an economic agent itself. [...] [I]t is an organism of economic agents in which the goods are organized not with regard to the needs of the nation (thought of as a single subject having needs) but with regard to the needs of the individual economic agents.

Consequently, he is of the opinion that what is usually called the «capital of a nation» is not capital «in the true sense of the word» (*ibidem*, 33). This is so because

> what is called national capital does not serve the generation of income for the nation as a whole; instead, each single part of it serves the generation of income for the individual economic agents.
>
> (*Ibidem*, 33)

So there is no capital from the standpoint of society thought of as a coherent economic agent. Yet, Menger (1888, 33) concedes that the term 'national capital' might still be used «for want of a better expression». His own vision of 'national capital' he bases on his interpretation of the

general term 'capital'. Curiously, however, he presents the former before he has clarified his view on the latter. For reasons of clarity and comprehensibility, the following section on Menger's positive capital theory starts with his general take on capital. His view on 'national capital' will be dealt with only afterwards.

5. Menger's positive take on capital theory

In section four, it has been demonstrated that Menger vigorously opposed the scientific theories of capital which deviate from the practical meaning of the term 'capital'. But what is this practical meaning of capital that he endorses? Menger (1888, 37, emphasis added) is clear on this point:

> When businessmen and lawyers speak about capital, they do mean neither raw materials, nor auxiliary materials, nor articles of commerce, machines, buildings and other goods like this. Wherever the terminology of the Smithian school has not already penetrated common parlance, *only sums of money are denoted by the above word.*

He specifies this view a few lines below in saying that, of course, not all sums of money, but «[o]nly sums of money that are dedicated to the acquisition of income [...] are denoted by this word» (see also Stigler 1937, 249 f. and Tuttle 1903, 84 ff.).

In the following subsections, Menger elaborates on his view in order not to be misunderstood. When he says that only sums of money are called capital, he does not only have concrete pieces of money in mind. In our modern monetary economy, he explains, also other assets are estimated and expressed in money terms, and whenever their relative significance for the business of the respective owner and not their technical nature is at stake, this viewpoint is the essential one for economic considerations (Menger 1888, 39).

> The realistic notion of capital comprises all assets of a business, of whichever technical nature they may be, in so far as their monetary value is the object of our economic calculations, i.e., when they calculatorily constitute sums of money for us that are dedicated to the acquisition of income.
>
> (*Ibidem*, 40)

As a side note, he adds that the then common practice of farmers has misled the physiocrats and, to some extent, also Adam Smith not to include land in their notion of capital. In those days, farmers very often did not estimate the monetary value of their land, and therefore land did not constitute capital for them. This, however, as Menger notes, has nothing to do with any fundamental difference between capital and land, but only with the fact that, back then, economic calculations of farmers did not yet embrace land, but only circulating assets (*ibidem*, 42).

It has been bemoaned by several commentators that Menger did not extend his critical reflections and his ideas on a correct capital concept to a complete capital theory (Liefmann 1923, 548; Stigler 1937, 249). However, it should be clear from the above quotes that Menger unambiguously adhered to the concept of capital stemming from business life. It is not true, as Endres and Harper (2011, 363) maintain, that he had two different views on capital in mind. They argue that Menger (1888, 43-45) distinguishes

> between two levels of reality: production activity and investment activity. Heterogeneous capital goods have a central place in the realm of production; when combined to form capital by entrepreneurs, they have a rate of return or yield. By contrast, money or financial capital is used for acquisitive purposes in the realm of investment and returns interest.

However, nowhere in his article does Menger distinguish between two levels of reality, and as must be repeated here, his realistic notion of capital is not narrowed down to «money or financial capital», but comprises all kinds of assets. What Menger does on the pages 43-45 is to distinguish between *circulating and fixed capital*. There is no trace of the distinction between a heterogeneous capital concept and financial capital. On page 43, he even explicitly states that both circulating and fixed capital *still only refer to sums of money*:

> Not the concrete fixed assets or circulating assets as such, but *only the sums of money they represent* are – according to their character as fixed or circulating assets – fixed or circulating capital (emphasis added).

This is Carl Menger's viewpoint on capital. For him, capital is homogeneous, not heterogeneous. Assets become capital only in so far as they are homogeneously expressed in terms of money. That they are heterogeneous is of importance only from a technical point of view, that is, for concrete production processes. But this has nothing to do with the way the term 'capital' has to be understood.

Now, after it has been clarified how Menger viewed capital, it is possible to correctly interpret what he said about the notion of 'national capital'. It was said above that he was of the opinion that there is no 'national capital' in the true sense of the word as the nation is no individual economic agent but only an organism of economic agents. However, he does not dismiss the word completely for want of a better one. He defines 'national capital' as the «epitome of the capitals of the individual economic agents that are combined to a higher entity» (Menger 1888, 33). He emphasizes, however, that, by the capital of the individual agents, he does not mean only the produced means of production or the goods of higher order. On the contrary, everything that is part of the capital of an individual economic agent is also part of the national

capital. «The capitals of the individual economic agents are organic parts of this collective entity *with all their characteristics*» (*ibidem*, emphasis by Menger). National capital, according to Menger (1888, 34), contains everything business capital consists of, including money claims, abstract rights, and consumption goods in the hands of retailers. So even his vision of *national capital* does not coincide with the position usually imputed to him, namely that capital is a structure of higher-order goods used to produce first-order goods. As was already demonstrated above, on the one hand, a lot of higher-order goods are not part of the capital of an economic agent – and therefore not part of national capital – and on the other hand, there are a lot of goods that are not higher-order goods but still part of someone's capital – and therefore also part of national capital.

An economist's discussion of the concept of capital is hard to imagine without a concomitant analysis of the phenomenon of interest. Surprisingly, however, Menger (1888, 44, 46-49) dedicates only three and a half pages to interest. He does not try to *explain* interest – for example as a result of time preference, productivity, or something else – but confines himself to applying what he has said about capital to interest as well. He wants economic science to follow business people who do not consider *any* yield on wealth to be interest, but only «the *monetary* return on (acquisitive) *sums of money*» (*ibidem*, 44, emphasis added). In this context, he (*ibidem*) repeats once more that the term 'sums of money' is not restricted to plain money, but includes all kinds of assets in so far as they calculatorily constitute sums of money.

It is interesting to note that in his short discussion Menger foreshadows Frank Fetter's (1904) distinction between rent and interest. Menger defines rent as the *absolute* amount of money which assets like «a farm, a factory, or a block of flats» (Menger 1888, 44) yield. Interest, in contrast, is the *proportion* between the sums of money which these assets yield – the rent – and the sums of money by which these assets are represented in the calculations of entrepreneurs – i.e., capital (*ibidem*). Ultimately he argues that rent and interest refer to the same flows of money but depict these flows from different angles.

Like Fetter (1904, 195 f.), Menger (1888, 47) adds that there is a logical order in the theories of rent and interest. Rent on real assets is the 'primary' phenomenon and interest on capital is the 'secondary' and derived one. Any theory of interest presupposes the existence of rent, that is, of absolute sums of money which assets yield. Therefore, before interest can be explained, a general theory of rent is necessary to explain the reasons for these money flows. Interest theory, according to Menger, takes place on a completely different level. It is not supposed to explain any flows of money or the income of any factor of produc-

tion, but rather takes these magnitudes as given and deals with the question as to how they contribute to the derivation of capitalized asset values (*ibidem*, 47 f.).

Apparently, he did not consider this to be a very difficult or important problem for economics:

> The explanation of 'interest' on calculatory capital – the latter being represented by the residual categories of acquisitive wealth – and of its rate must not bother us because it is, both in science as in life, a matter of mere calculation.
>
> (*Ibidem*, 48)

On this point, Menger and Fetter differ. Menger (1888) seems not to be aware of a necessity to *explain* the process of capitalization. Exactly how (and by how much) future monetary flows are discounted in the process of generating capital value does not concern him in his essay. He confines himself to locating the interest problem and does not try to contribute to its solution like Fetter did with his time preference theory.

6. Menger's contribution to capital theory from a present-day perspective

It is necessary to conclude with some remarks on, first, the question as to why Menger changed his point of view on capital and, second, the significance of this change for the history of economic thought. Unfortunately, the cause for his radical turn cannot be traced with certainty. Menger (1888) does not contain any hint as to why he changed his perspective. The second edition of his *Principles* (Menger 1923) is of no help, either. It has not been edited by Carl Menger himself, and therefore, as his son Karl Menger (1923, XIII f.) remarks, does not contain a coherent theory of capital, but rather several sections on the topic that do not harmonize with each other. It seems probable, however, that Menger was brought to change his viewpoint by the study of Richard Hildebrand's book *Die Theorie des Geldes* [*The Theory of Money*]. Hildebrand (1883, 66-86) develops exactly the concept of capital that Menger (1888) would later adopt. The deviations, as Jacoby (1908, 88) notes, are «very minimal». It must be added that, although Menger (1888) does not mention Hildebrand's book, he definitely was aware of it as he reviewed it positively in a Vienna newspaper in 1884 (Menger 1884, 3 f.). Furthermore, Menger (1876 [1994]), Menger (1985 [1883]), but especially Menger (1961, 133-189) – the roughly 50 pages of handwritten comments on capital theory Menger wrote into his personal copy of the Principles mainly between 1872 and 1880 (Kauder 1961, xix) – do not show any sign of a deviation of the capital concept contained in his *Principles*, which indicates that the shift in his thinking must have occurred between 1883 and 1888.

Another author who used a similar concept and whom Menger was definitely aware of is Albert Schäffle, Menger's direct predecessor at the University of Vienna. Schäffle is not as clear on what he considers to be the correct capital concept as Hildebrand and Menger, but other than these two, he provides a theoretical reason for his emphasis on monetary calculation (Schäffle 1870, 101 ff.). According to him, capital accounting is a central institution of the market economy and helps to *organize* the production process as it allows entrepreneurs to align their plans rationally to the wishes of the consumers and the scarcities of the means of production. From this perspective, capital is not a feature of every production process, but only exists in 'capitalism' where entrepreneurs employ capital accounting.

Apparently, this point of view paves the way for a special kind of argument. Albert Schäffle was able to foreshadow Mises's (1959 [1922]) famous discussion of economic calculation in socialism and to predict that socialism would have a problem if the central administration did not find a way to accomplish for the socialist economy what economic calculation by entrepreneurs based on capital accounting achieves for the capitalist economy (Hodgson 2010; Braun 2015). In turning to the business concept of capital, Menger (1888) opened the door for later Austrian economists, especially Mises, who dealt with these issues.

In yet another neglected and untranslated remark, Schumpeter clearly states that a capital theory dealing with economic calculation fundamentally differs from the conventional ones and that, therefore, the discussion about Menger's viewpoint on capital is not only a quibble about words.

> As opposed to regularly uttered assertions, the controversial point is not only one of terminology. Not an expression, but a theory about the nature of important processes in the capitalistic economy is at stake. Therefore, it was a great progress that C. Menger tried to get directly at the facts.
>
> (Schumpeter 1997 [1911], 185)

This is not the place to go into the details of the further development of this stream of thought. Suffice it to say, capital theories that do not focus on the production process as such but on the question as to how it is organized by economic calculation lived on in the works of Joseph Schumpeter (1997 [1911], 165 ff.), Ludwig von Mises (1966, 259 ff.) and, in the German-speaking area, in the today considerably neglected contributions of Robert Liefmann (1923, 533 f.), Alfred Amonn (1927, 353 ff.), Otto von Zwiedineck-Südenhorst (1930, 1083 f.), and Wolfgang Heller (1941, 385 ff.); all of these authors refer to Menger (1888) as a forerunner (Schumpeter 1997 [1911], 187; Mises 1959 [1922], 123; Liefmann 1923, 548 f.; Amonn 1927, 364 f.; Zwiedineck-Südenhorst 1930, 1072 f.; Heller 1941, 387; see also Passow 1927, 74 ff.). At the beginning of the 20th century,

even a separate discipline occurred in Germany – the so-called *Privatwirtschaftslehre* – that tried to establish a connection between capital accounting, entrepreneurship, and microeconomics (see Rieger 1928; Forrester 2000, 112 ff.).

What distinguishes this approach to capital theory is not only its emphasis on the role of capital accounting. In this, it resembles Clark's (1899) and Knight's (1936) take on the issue. In contrast to this neoclassical approach, however, it does not confine itself to bisect the capital concept into concrete capital goods on the one hand, and capital proper – the value of these capital goods – on the other. Instead, it cuts the connection to the technical aspects of the production process – and therefore to the concept of capital goods – altogether. Following Menger (1888, 15 ff.) it is argued that there is no category of goods that can be called 'capital goods' or, as Mises (1966, 262 f.) argues, that the term 'capital goods' has nothing to do with capital theory (Festré 2003, 21). *All* goods can become capital in the hands of entrepreneurs, even raw materials, land, and labor services (Heller 1941, 391; Schumpeter 1997 [1911], 194 f.; Liefmann 1923, 533 ff.; Amonn 1927, 360 f.; Zwiedineck-Südenhorst 1930, 1063 f.). Capital, in this approach, is not a production factor, but an operand in the economic calculations of entrepreneurs, and capital theory is not concerned with production, but with the organization of the market economy.

Menger, thus, not only founded Austrian capital theory – as developed by Hayek, Strigl, Lachmann, and Rothbard – through his discussion of the multi-stage production process in Menger (2007 [1871]). In Menger (1888) he also foreshadowed Mises's (1959 [1922]) work on the role of economic calculation in capitalism and socialism. Two things remain to be done. Following the historical research presented here, theoretical research is necessary that focuses on the question as to how an elaborate capital theory that is based on Carl Menger's later viewpoint would look like. The works that have been mentioned above, even Mises (1966), although in agreement with Menger (1888), hardly contain more than hints or rudiments in this regard. What is the role of capital and capital accounting in the organization of the market economy? A comprehensive answer to this question would allow economists to formulate strong positions on highly controversial issues. Think only of the current discussion about the proper design of accounting rules. Whether Fair Value Accounting or Historical Cost Accounting is to be preferred depends on the way economic calculation actually organizes the market economy. The established market models do not focus on this point, but neither do discussions of capital theory.

The second open question is in how far the two strings of thought mentioned above can or should be united under the label of 'Austrian

capital theory'. Mises (1966) tried to solve the problem by distinguishing between 'capital' and 'capital goods,' which, however, does not seem to be a good idea as the ambivalent use of the word 'capital' might lead to misapprehensions. Menger's (1888) advice was to stick with common parlance and to restrict the term 'capital' to the money value of business assets. From a *terminological* point of view, there is much to be said for such unification. Whether it is *theoretically* justified can only be decided after further research on this question.

7. Conclusion

The common interpretation of Carl Menger's theory of capital needs considerable revision. Although it is true that he introduced the concept of the different orders of goods, it is excessive to unreservedly ascribe to him the opinion that capital is equivalent to the heterogeneous structure of higher-order goods. This interpretation rests upon a few sentences Menger has written in his *Principles of Economics*. Once he had thought more deeply about the matter, he changed his mind and harshly criticized all attempts to deviate from common parlance, including the one by Böhm-Bawerk who was clearly oriented towards Menger's earlier discussion of capital. In his 1888 *Contribution to the Theory of Capital*, Carl Menger extensively expounded why all these scientific theories of capital, as he called them, are inconsistent and should be abandoned. Capital, in his view, is a homogeneous concept taken from the practice of financial accounting, and he urged economists to stick to this concept. This point should be taken into account by historians of economic thought and capital theorists writing in the tradition of the Austrian School of Economics. They should stop appealing to Carl Menger as a predecessor of the view according to which capital consists in a combination of heterogeneous higher-order goods, or at least they should duly qualify their statements. As was shown in this paper, Menger himself vigorously opposed this view.

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