



Carl Menger on time and entrepreneurship

Gilles Campagnolo

► To cite this version:

Gilles Campagnolo. Carl Menger on time and entrepreneurship. European Journal of the History of Economic Thought, 2022, 29 (5), pp.817-835. 10.1080/09672567.2022.2111451 . hal-03779379

HAL Id: hal-03779379

<https://amu.hal.science/hal-03779379>

Submitted on 14 Dec 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Carl Menger on Time and Entrepreneurship

Gilles Campagnolo¹

Keywords: Böhm-Bawerk (Eugen von), Entrepreneurship, Innovation, Menger (Carl), Time

JEL Codes: B13, B31, O31

Abstract

Carl Menger is remembered less for his analysis of entrepreneurship (which in the following analysis refers to his fundamental notions related to the nature of business practice) than for his views on matters like money, individualism or the nature of institutions. (There are exceptions to this subdued interest, such as Kirzner 1978). However, these issues are related and a long-debated notion among Austrians, namely *time*, relates investment, entrepreneurship, and Menger's tentative quasi-anthropology (kept in his notes). This paper conscientiously investigates those issues through Menger's views on the notion of time.

Introduction

Carl Menger built a theory and methodology that resulted in the rise of a new school of economics against both the dominant British Classical School and the German Historical School. The last third of the nineteenth century was a 'great crossroads' of currents of economic thought. The so-called 'Austrian School' was born from Menger's works and would hold steady concerns about the entrepreneur, whereas the so-called 'mainstream' debated theories of the firm regarding the private business side of economics.

In this paper, I show where elements for a theory of entrepreneurship lie in Menger's *Principles*, notwithstanding the fact that his theory was incomplete, just as the multiple planned volumes – of which his 1871 edition was intended only as an introduction – were never written, and additions piled up, despite only a few being included in the 1923 edition (since many in Menger's volumes were not accessible any longer to his son who edited the 1923 version). A systematic comparison with other approaches in terms of the history of the issue of entrepreneurship or its modern treatment cannot be fully provided in a single paper, but

¹ Full Research Professor in Economic Philosophy: National Center for Scientific Research – Aix-Marseille University (Aix-Marseille School of Economics), CNRS & EHESS. Associate: London School of Economics (Center for the Philosophy of Natural and Social Sciences). G.Campagnolo@lse.ac.uk

This work was supported by French National Research Agency Grants ANR-17-EURE-0020. The author thanks for their kind support the organizers of the 2021 Conference at the University of Nice Sophia Antipolis that commemorated Menger's death 100 years ago, as well as the 150th anniversary of the publication of his *Principles of Economics*. The author acknowledges helpful remarks by two anonymous referees.

elements are presented to show that Menger's fundamental notions encompassed more than other views, or prepared the ground for them, even when they were distinct and to some extent opposed, as was the case with the works of his disciple, Eugen von Böhm-Bawerk. It comes as no surprise that the key notion is the role of time, which acts as a label for the Austrian school. Its founder set that notion of time as a core notion right from the start as he stitched together his views by stressing three key concepts: the satisfaction of needs *Bedürfnisbefriedigung*; the availability of goods and services, *Verfügbarkeit*; and their marketability or saleability, *Absatzfähigkeit*.

As a consequence of systematically linking his main concepts with the passing of time, Menger's understanding of economics is pervaded with *dynamics* and ideas that work at the individual level of the entrepreneur (the theory of goods of different orders) and that also relate to larger developments (especially via the process of investment and the evolution of tools). Based on Menger's annotations in his book and in the margins of books by other authors in his collection, I explore the former dimension (the theory of goods of different orders) and add the latter insight (the evolution of tools), by studying in parallel both the individual and the civilizational levels in this paper, which is thus intendedly twofold. Menger displayed interest in anthropology and a theory of stages based on the use of tools. Both this aspect and his views on entrepreneurship have received insufficient attention in the literature. It is relevant to develop both, since time and the concern for material development sets a frame for both individual entrepreneurship and civilizational stage development. The notions of time and of investment are key in that regard, and we should avoid conceding ground to the collective concepts (*Kollektivbegriffe*) used by the German Historicists, whom Menger steadily opposed. The application of these notions of time and investment were indeed a path that his *Principles* contributed to at least opening. That path would be later trodden by many heirs to the Viennese cradle – certainly the members of the Austrian school, but not only them, since a more open view of the history of Mengerian heritage than the standard lineage of their self-claimed tradition would arguably accommodate thinkers such as Karl Polanyi.

As a consequence of this twofold inquiry, the paper consists of three parts. Part I offers a few reminders of the role and place of the notion of time in Menger's *Principles*. The intent is to briefly take the reader through an examination of some prominent issues, such as the theory of goods of different orders that brought in elements that enabled a theory of entrepreneurship to finally surface. I do not argue that Menger's theory is complete: on the contrary, works by disciples and commentators close to him (Eugen von Böhm-Bawerk), or those close to his son

(Franz Weiss), or those written much later (Israel Kirzner) highlighted its limitations, as related in Part II. Based on material arising from an extensive study of manuscript annotations by Menger, Part III discusses the role and place of investment within a stage theory of development, notwithstanding Menger's consistent stand in favor of the individual methodology he brought to economic science. Factual evidence is supported by little-known manuscript annotations (Kauder 1963, Campagnolo 2020). The presence of these annotations in Menger's work can be said to pave the way (if not tentatively but decidedly prepare) for later anthropological approaches – a seam that would later be inherited by Karl Polanyi, who explicitly mentioned finding some of his most important ideas from his reading of the *Principles* (1923 edition). This paper's conclusions stress in turn that Menger's stand cannot be reduced to his opposition to the German Historical School, however clear and undeniable his position was on this point.

I. Brief reminders around the notion of time in Menger's *Principles*

We start with Time. This is no surprise when dealing with an Austrian thinker, even less so regarding the Austrian School's founder. The study of time was one major incentive for much of this literature, the most famous example arguably being *The Economics of Time and Ignorance* (O'Driscoll and Rizzo, 1985), a best-seller whose sequel, thirty years later, re-examined the same issues (2015). However, beyond paying respect to it, this book is not examined here, and nor is the general literature; the present article rather focuses on the source itself, exploring Menger's own views. In his theoretical *magnum opus*, we are constantly reminded of the role and place of time that, in the last decades of the nineteenth century, thus provided the ground for the Austrian School to later develop, and to re-flourish in the last third of the twentieth century. Just as time is related to ignorance, as stressed by Rizzo and O'Driscoll (1985: from the Introduction on, it is the main theme of the volume), time is associated with the decentralization of information, as Friedrich Hayek notoriously pointed in his time (his 1945 essay is arguably the most famous essay on the dispersal of knowledge, among many texts in the same direction). However, we must start from the beginning, from Menger himself and from the three key features that he put forth in his *Principles*: the satisfaction of needs (*Bedürfnisbefriedigung*), the availability of goods/services (*Verfügbarkeit*) and saleability (*Absatzfähigkeit*). As explored in more depth in Part II, there were limitations to Menger's analysis, as was inevitable in a project that did not come to completion. For now, a few preliminary reminders.

One dimension of Menger's *Principles* that was highly relevant to the discovery of the methodological individualistic approach to entrepreneurship was his application of the

threefold structure of satisfaction/availability/sale-ability across the whole book, and its application to other notions: specifically, the means (*Mittel*) of material life (goods/services), effective transactions (monopoly/competition) and the realization (*Verwirklichung*) of the subjective goals of the individual. This mind-structure is clearly indicated by Menger in a table that can be found in his archives. Kiichiro Yagi presented the following (1993) from a notebook located at Duke University²:

<i>Zweck</i> (end, goal)	<i>Mittel</i> (means)	<i>Verwirklichung</i> (realization)
<i>Mensch</i> (individual human being)	<i>Außenwelt</i> (environment, surroundings)	<i>Lebenserhaltung</i> (subsistence)
<i>Bedürfnis</i> (need)	<i>Gut</i> (good)	<i>Befriedigung</i> (satisfaction)

The table reads vertically and horizontally, for instance as follows: a good (*Gut*) is a means (*Mittel*) for the satisfaction (*Befriedigung*) of a need (*Bedürfnis*) subjectively felt in a given environment (*Außenwelt*). As the appendixes to Menger's *Investigations into the Method* (1883) and his manuscript annotations clearly show, the analysis of terminology was a matter of tremendous significance in his eyes and concepts were reflected in its accuracy more than in any other way (in particular mathematical formulas, which he regarded as merely illustrative)³.

One reason for this heightened attention to meaning (*Bedeutung*) is that Menger explicitly intended to renew science through the precise combination of the aforementioned concepts. In the above table, he is actually mapping 'human action', though it is worth noting that Menger did not use this wording, speaking rather of a *wirtschaftlicher Mensch* or 'economizing person'; it was his second-generation disciple (*Enkelschüler*), Ludwig von Mises, who would later coin the term 'praxeology' so as to make clear that 'human action' was the key point of his theory with regard to material life (within a given environment) in a rationally ordered subjective reasoning way. Menger's epistemology, based on causal analysis, finds its elementary notions within the limited individual (*Mensch*) who seeks satisfaction for subsistence (*Lebenserhaltung*; the second horizontal line in the table⁴). The first column may also read: in order to survive, human beings tend to realize their goals according to their representations of their individual

² Contents of Box 2 of the large set of papers and personal items by Carl Menger and Karl Menger, father and son, transmitted by Menger's granddaughter to Professor Roy Weintraub.

³ That was arguably still much the case in Menger's time, as he observed when annotating the volume *Zur Theorie des Preises* by Auspitz and Lieben, noting that the concepts were not defined properly, while the equations soon covered that fact for the untrained reader (for instance, the use of the *ceteris paribus* clause was absolutely not justified by the authors; notes on the 1887 copy owned by Menger, p. 2-5).

⁴ This is related to the Aristotelian principle that each being tends to survive; for more on Aristotelian philosophical underpinnings, see, besides a rich literature, the rehashed debate between (Crespo 2022) and (Campagnolo 2022).

needs. Such a mechanism might have been of interest to psychology (experimental psychology, exemplified by Wilhelm Wundt, being dominant in Menger's time⁵), as well to phenomenology (incipient at that time), but Menger held that the economist's task should remain independent. Therefore, by starting from the fact that one's feelings are *fully* subjective (just as Descartes had stated with regard to pain), he did not intend to open the black box of the mind, but to bring economics into the individual realm, so as to inquire about economic behavior. And time is key, with all its consequences for interpersonal and intertemporal comparisons – which can neither be naively extended from one human being to another nor simply maintained through time – and for preferences that cannot be set once for all and kept unchanged just for the sake of making models tractable. Where time is at work, this is precisely where one should refrain from favoring tractability over a realistic approach to subjective behavior.

Also, Menger held that the economist should not decide whether individuals are foolish or wise, moral or immoral, when they choose what they choose in the environment at their disposal, but rather that the relationship to one's surroundings (between each individual and 'things') is the very basis of economics as a science. For example, why wares are manufactured and/or exchanged (if desired by individuals, yet not immediately available to them) derives from the characteristics of that basic relation, making a 'thing' into an 'economic good' via activity that requires time. Material things are investment items inasmuch as they appear to have a meaning (*Bedeutung*) for human subjects, as they are available (*verfügbar*) for one's (material) life-ends (*Zweck*). The concepts of availability (*Verfügung*, *Verfügbarkeit*) are key, as is the concept of need-satisfaction (*Bedürfnis-befriedigung*). The table inscribed by Menger shows various combination. This quasi-philosophical reflection on the agent's primary subjective aim – what is good for oneself according to one's needs and wishes – brings an ideal type of what the economist should consider (yet not judge): the individual's subjectively felt goals and the selected means they choose to realize those. This structure, along with reasoning based on marginal utility, is the core of Menger's doctrine, and the central notion pervading it is *time*.

What sets Menger apart is that this view on subjective marginal utility is how he characterized individual subjectivity, as the self-consciousness of singular needs in care for self-

⁵ In his notebooks (especially in boxes 1-3 and 14 for notebooks falling in the 1910s at Duke University) Menger tended to refute Wundt (a file is labelled "Gegen Wundt" *Against Wundt*). Notes show that Menger thought of revising some passages from his own *Investigations* while thinking over Wundt's results.

conservation. Such care develops through time as subjectivity develops, entailing in turn the following:

- a concern for information (conversely, ignorance/error, limitations of knowledge);
- a concern for self-development and the dynamics of socio-economics at large (including institutions as the counterpart of fundamental individualism);
- a concern for the future, foresight that characterizes the undertaker of any task;
- a concern for socio-economic interaction between ‘economizing individuals’.

It is worth noting at this point that the role of associating, of companies, of larger developments than the understanding of individual behavior, are present *in nuce* in these socio-economic interactions between economizing individuals. Yet interactions start making sense inasmuch as their aim is to satisfy the mutual needs in goods/services for individuals whose actions are set at different times: in short, this becomes a coordination problem and the very issue where dealing with time is most central to economic investigation.

In the first two chapters of the *Principles*, Menger sets out the contents of his theory regarding these basic notions, time being central⁶. He orientates the analysis towards the theory of goods/services of different orders; however, the notion of time pervades all levels and the consequence is that a theory of individual entrepreneurship may be distilled from the more global analysis. This achievement has its shortcomings, but let us first make its nature clear. What is there to order? ‘Human action’, Mises would say, meaning the way to satisfy needs with goods as permitted by available resources. Thus, the consumer stage comes first when it comes to satisfying a given need. Successive orders for goods/services appear at each step, with inputs necessary to produce goods of the lower order. Everything begins with human needs, and the process of ordering goods and services displays the ‘before/after’ that characterizes the notion of time:

If our requirements for goods of first order for a coming time period are already directly met by existing quantities of these goods, there can be no question of a further provision for these same requirements by means of goods of higher order. But if these requirements are not met, or are not completely met, by existing goods of first order (that is, if they are not met directly), requirements for goods of higher order for the time period in question do arise. These requirements are the quantities of goods of higher order that are necessary, in the existing state

⁶ In the *Principles*, the word ‘time’ often appears directly in subtitles, for instance Chapter 1, § 4 is entitled ‘Time and Error’ and Chapter 2, § 1, section C is the ‘Time limits within which human needs are felt’ (wording here by the volume’s English translators, John Dingwall and Bert Hoselitz).

of technology of the relevant branches of production, for supplying our full requirements for goods of first order.⁷

Consequently, there are higher goods and complementary goods. ‘Roundaboutness’ of production is another word for the economic expression of time. When undertaking actions such as setting prices, computing available resources for the most economic productive capacity of goods, and stocking, transporting and selling them, conditions and time are always finite and can be divided into periods or stages. It is intrinsic to the interaction of individual economic agents, who are finite human beings, to act as potential undertakers of such economic action (producing, consuming, exchanging) as they follow their purposes (their *individual* plans) according to ordering along *within time*. There are various consequences, among which two are of major concern to our attempt to distill a theory of entrepreneurship from the *Principles*. On the one hand, from the theory of goods of different orders, one and the same good may sometimes serve as an input, sometimes as the product sought in and of itself (accounting for this situation would be a quandary at the level of a general theory of entrepreneurship, *if* Menger had provided one, which is not necessarily the case, albeit he certainly provided seminal elements for it: this is dealt with in Part II). On the other hand, the interactions bring about the idea of stages in production as one specific consumption good is targeted, and also of such stages at a more general interactive and developmental levels, within a civilizational perspective that Menger’s annotations also reveal if examined with care (we shall then come back to this in Part III, with the idea that Menger pre-formed a quasi-anthropology).

II. Menger’s approach to entrepreneurship: time, entrepreneurial functions, investment and limitations

Menger achieved a theory of goods of different orders that makes sense *both* synchronically from a logical point of view, and diachronically when taking into account the passing of time. In other words: if desire is infinite, its realizations are always finite. One always acts in a finite frame given one’s own circumstances. Moreover, since Menger stands firm against any moralizing attempt by the supporters of so-called “ethically-orientated” economics, especially within the German Historical School (see Appendix X of Menger’s *Investigations* on this: Menger 1883), the economist is never to judge the *ethical* value of any desire (and the realization of its satisfaction), but can only observe, analyze and/or predict completion in this

⁷ Menger, C., *Principles, op. cit.* Chap. 2, § 1.b. In the translation by Dingwall and Hoselitz (1871/1950: 84).

finite world. Economic action is thus an ‘art of working within finite limitations’ by individuals, and the undertaker of such action needs a theory that explains regular patterns in his/her action. What relates all action is time, within one individual and between individuals (interaction).

The material presented in Part I shows that Menger provided elements for this, even if he fell short of producing a complete theory of entrepreneurship – something which, in fact, he never promised, but that could have been later deduced had his work been completed, given the *Principles* was intended as the introductory part only. Neither was Menger the first in a line of thinkers about entrepreneurship in the German-speaking realm: far from it. Nevertheless, he initiated the Austrian tradition, since earlier attempts had not been based upon methodological individualism.

2.1. Precursors and how Menger set out his views on entrepreneurship in the *Principles*

The tradition existing in German language literature about the figure of the entrepreneur (not to mention other traditions⁸) can be encountered in works earlier than Menger’s, by authors such as Wilhelm Roscher or Hans Karl Emil von Mangoldt (in Germany and Austria, respectively) among others. There were undoubtedly precursor and contemporary works which displayed interest in the theory of the entrepreneur, for instance, Viktor Mataja’s *Unternehmergewinn* of 1884; Erich Streissler records a number of such works (1989). Moreover, the tradition initiated by Menger intertwined with other currents in this matter, as can be seen in particular by comparing the works by Werner Sombart and Menger’s disciple, Friedrich von Wieser (Campagnolo and Vivel, 2012). Of course, the relation between Menger and Böhm-Bawerk on capital and entrepreneurship is important in turn (see Campagnolo and Vivel 2014a and 2014b) and I say a few words about this later, in relation to its contribution to the discussion on how complete (or incomplete) the tools provided by Menger were to understanding entrepreneurship (and investment) with time.

In Menger, time is the all-encompassing notion that sets the perspective with regard to the economic agent’s action, making the notion of entrepreneurship surface after the nature and the use of economic goods/services has been clarified and they have been ordered. The theory of goods of different orders is key, and its *process* is clarified by Menger in the *Principles*:

⁸ As Bert Hoselitz recalled (1951), the term ‘entrepreneur’ was used in French and in English long before the German *Unternehmer*. He retraced this in Chapter 1: “The concept of Entrepreneur in France before Cantillon”, and Chapter 2 “English Concepts designating Entrepreneurial Activity before Adam Smith”. More recent literature is abundant. We refer the reader to it while we investigate the origins of the Mengerian tradition.

The process by which goods of higher order are progressively transformed into goods of lower order and by which these are directed finally to the satisfaction of human needs is [...] not irregular but subject, like all other processes of change, to the law of causality. The idea of causality, however, is inseparable from the idea of time. A process of change involves a beginning and a becoming, and these are only conceivable as processes in time. Hence it is certain that we can never fully understand the causal interconnections of the various occurrences in a process, or the process itself, unless we view it in time and apply the measure of time to it. Thus, in the process of change by which goods of higher order are gradually transformed into goods of first order, until the latter finally bring about the state called the satisfaction of human needs, time is an essential feature of our observations.⁹

It is possible to understand these lines as a path towards a theory of *investment*, with time as its focus, regarding lower-ranking and higher-ranking goods. Such a theory relates the need for consumption with the issue of available complementary goods, and the circumstances for obtaining a given state of individual satisfaction at a given civilizational and social stage (we shall come back to this latter aspect later). It cannot be stressed enough that ‘need’ has to be grasped *individually* and satisfied *individually* first. At a sociological level, the Mengerian individualist stance is valid in any given environment (socio-economic, geographic and historical) since each individual populates their own world with representations *that they are able to provide in their mind at their time, and only then*. Things (*Dinge*) are diverse, yet the process that makes them goods (*Güter*) with an economic essence (*wesentlich wirtschaftlich*) is always *identical*, hence this is where a theory of goods/services (*including labor* as an input) can be made universal. It is precisely what investment means: it is all about the various types of goods/services, the quantities of these goods/services, and the complementary qualities that they possess. Inasmuch as any good/service is consumed, it may be seen either as a ‘final consumption product’ or as some input for another stage of production. Higher goods (and services) refer to a plurality of investment objects, at each stratum for each industry. Menger used the basic example of what is required to produce a loaf of bread: not only the baker’s work, but the peasant’s work to produce flour from wheat, the work involved to obtain clean water and salt, and the work of the rain and soil. This applies to *any* economic good/service, that is to say, a good/service that is an input in the production process and/or is consumed, whether it can be appropriated (i.e. become a private – or public – property) or not.

This understanding meets the so-called problem of imputation, when accounting for goods/services is sought in making the theory tractable at a practical level. This was debated by

⁹ Menger, C., *Principles, op. cit.* Chap. 1, § 4. In the translation by Dingwall & Hoselitz (1871/1950: 67).

Menger's heirs, which further indicates that Menger had not provided a complete theory of entrepreneurship accountancy. One may add that the *Principles* do not offer either a way to compute exact return on investment or a theory of the firm. Indeed, neither of these were among Menger's aims, especially as he did not make interest yield a topic in the introductory work that the *Principles* were intended to be; nor did he accept that the firm, as a collective, should be given more credence than nations or classes, as far as the economic theory of individual behavior is concerned. Collective notions are equally mistaken if regarded as basic realities with which economics has to deal. The behaviour of the individual was indeed the main concern that Menger had, and, after mentioning Mangoldt's *Lehre vom Unternehmerge Gewinn* (1855) and debating his 'risk bearing' commonplace theory as being "the *essential* function of entrepreneurship in a production process" (Menger 1871/1950: 161), Menger went on to set out his own view on the effective functions of entrepreneurship, in a passage that Dingwall and Hoselitz reinserted from a footnote inside the main text:

The question as to which functions are included in this so-called *entrepreneurial activity* has already been posed several times. Above all, we must bear in mind that an entrepreneur's own *technical* labor services are often among the goods of higher order that he has at his command for purposes of production. When this is the case, he assigns them, just like the services of other persons, their roles in the production process. [...] Entrepreneurial activity includes: (a) obtaining *information* about the economic situation. (b) Economic *calculation* – all the various computations that must be made if a production process is to be efficient (provided that it is economic in other respects). (c) the *act of will* by which goods of higher order (or goods in general – under conditions of developed commerce, where any economic good can be exchanged for any other) are assigned to a particular production process; and finally (d) *supervision* of the production plan so that it may be carried through as economically as possible.¹⁰

The previous passage is presented by Menger as a recap. It encompasses both Menger's own multiple references to the functions of entrepreneurship in notes in his *Principles*, and the findings of earlier authors whom he quoted and mentioned in his notes (see Campagnolo 2020 for a list of the books Menger used and annotated, 1871/2020: 775-802). It is said that entrepreneurial activity includes a list of principles which require conditions of economic activity to be fulfilled (such as the free ability to exchange). Menger's presentation clearly awaits further exploration down the road in full-fledged theories of entrepreneurship and investment. As hinted above, why should we expect to find everything in the *Principles*?

¹⁰ Menger, C., *Principles*, *op. cit.* Chap. 3, § 3.c. Dingwall & Hoselitz (1871/1950: 160).

Neither the author nor his disciples claimed such a thing. In any case, the elements which are presented – from the idea of ‘going up the scale’ through ranking goods along different orders – fit any corresponding productive process/industry, which is precisely what seminal texts are meant for.

At each stage of production, the search for complementary goods does not solely consist of seeking to fulfill missing places in the resources presently available, but actually pushes the development of innovative solutions and promotes the emergence more effective ways to perform the task at hand. Grasping the mechanism by which each stage of production may be analyzed and each element of the analysis made more efficient goes beyond this, and requires a theory of complementary higher goods. This is precisely what Menger provided.

Indeed, this theory in turn reveals that by introducing more stages of production, resulting in higher productive forces and productivity ratios and making production ever more roundabout, the process becomes ever more efficient and intensive. A theory of the development of innovation is embedded therein.

In our present investigation, the only topic still remaining to be taken into consideration is the problem of time, and we must demonstrate for what periods men actually plan their requirements. On this question, it is clear, in the first place, that our requirements for goods of first order appear to be met, with reference to a given future time period if, within this time period, we will be in the position of having *directly* at our disposal the quantities of goods of first order that we require. It is different if we must meet our requirement for goods of first or, in general, of lower order indirectly (that is, by means of quantities of the corresponding goods of higher order), because of the lapse of time that is inevitable in any production process. Let us describe as Period I the time period that begins now... [etc.].¹¹

The ‘periodization’ of time is thus operated by Menger both *objectively* and *subjectively*. The subjective side is described by the marginal reasoning indicated above. The objective side is merely the ‘delay’ represented by the time required for production to make a good available when lower-order goods are not immediately available, forcing agents to trade or to seek out those of a higher order with the intent of procuring for themselves the goods that they need.

One key element of reading the *Principles* as the original source not only of Austrian thought as generally understood within the Austrian school, but possibly more at large in other works related with the Mengerian spirit, is to consider time as the subjective feeling of duration. In all cases, mechanisms are here based on time, where time is understood as *duration*. Time

¹¹ Menger, C., *Principles, op. cit.* Chap. 2, § 1.c. Dingwall & Hoselitz (1871/1950: 87-88).

for Menger is essential as *duration*, and this duration is central inasmuch as it is felt by the *subject* of economic action. While material clocks indicate objective time with regular intervals, it is clear that for individual *subjects*, periods of time depend on their longing, on their being satisfied or frustrated¹².

To seize this mechanism, Menger insists on setting forth the role of *time*. Investment and innovation may be more systematic and the result of conscious endeavor, rather than a mere haphazard result of chance¹³. The idea of innovation was all but new. However, Menger added in a theory of orders that provided investment theory a backbone, and described entrepreneurial functions clearly enough that disciples in his school and more generally in the Viennese sphere found ways to complete the theory. If Menger did not open the field (which he never claimed to have done), he set a track that his followers could follow, complete and even find elements to critique in the insights provided by the founder.

2.2. Followers and some limitations in Menger's views on entrepreneurship

Of course, Menger was speaking during and of a time that is long gone. The passage quoted below is purposefully taken from the same passage in *Principles* quoted above, on the topic of entrepreneurial functions (Chap. 3, § 3.c), in order to present it here as evidence both that Menger's times and environment led him to describe a certain stage of development of industry – one which is obviously long past – and that this does not contradict his conclusions as to the seminal role of the theory of goods/services of different orders to serve as a basis for a more complete and updated theory of entrepreneurship. Here is the excerpt:

The owner of a magazine is often a contributor to his own magazine. The industrial entrepreneur often works in his own factory. Each of them is an entrepreneur, however, not because of his technical participation in the production process, but because he makes not only the underlying economic calculation but also the actual decisions to assign goods of higher order to particular productive purposes.¹⁴

¹² Incidentally, this points to a notion explored later, within the phenomenology of Edmund Husserl or Henri Bergson's energetic notion of life. They authors are not mentioned in Menger's notes in the *Principles*, whereas Menger was still actively working on his revised edition. Probably, the interval between the moment Menger formed his thought and later developments, as well as the gap between disciplines (as Menger was busy fighting German Historicists) explains this fact, even though he was highlighting some similar fundamental notions regarding human behavior.

¹³ Indeed, chance is at work in the innovation process when Smith depicts a 'smart young boy' in the first paragraphs of his *Wealth of Nations*, who works out a better system for the forge bellows at the needle factory.

¹⁴ Menger, C., *Principles, op. cit.* Chap. 3, § 3.c. Dingwall & Hoselitz (1871/1950: 160).

The ordering of goods implies in some way a descriptive account of *vicissitudes* of exchange, so to speak. Menger quoted the *Cours d'économie politique* by Pellegrino Rossi in French, adding '*sehr richtig*' ('absolutely exact') and endorsing that word.

If you could only follow the thousand vicissitudes of the market, all the contracting parties, and if you could strictly analyze their circumstances, if you could weigh, so to speak, their proper needs, then you would have found the solution to our problem.¹⁵

As Mengerian economics deal with what he called *Realtypen* – typified entities of individual reality – then, vicissitudes are the elements which, first and foremost, cause *delay* (in satisfying needs, in gathering inputs, in producing goods, etc.) and entail *uncertainty* in the process. Roundaboutness in production and transformation in investment refers to processes where the flow of time has to be accounted for. Not much later, Eugen von Böhm-Bawerk stressed roundaboutness in production, alongside the finite character of each stage of production¹⁶. With limited resources to allocate, limited information to gather, and limited cognitive resources to process, Hayek was pushed in turn to focus his conception of economics on decentralized information and spontaneous order.

Menger did not provide all the necessary tools to compute returns on investment, for instance, and therefore how the entrepreneur may choose between alternative inputs in his/her investments, nor did he provide options for developing any preference or 'know-how' when it comes to selecting key features of a business investment. Later authors within the Austrian tradition, beginning with Böhm-Bawerk, and from outside this school (such as John Bates Clark, or Frank Knight on uncertainty) would discuss interest, capital, discounting methods and further entrepreneurial matters not detailed in the *Principles*, which nevertheless remained a seminal work. Menger commented on some views by his disciples, raising more queries as he reproached Böhm-Bawerk's capital theory – a point particularly difficult to assess given Menger's one contribution in 1888: see Magnan de Bornier 2008).

Regarding issues such as profit, entrepreneurial compensation, and risk or the interest of capital, some commentators deduced from Böhm-Bawerk's focus on the theory of capital that he did not, in effect, deal with entrepreneurship at all. In their essential work on the theory of the entrepreneur, Hébert and Link asserted that "Böhm-Bawerk wrote very little about the

¹⁵ '*Si vous pouviez suivre à travers les mille vicissitudes du marché, les parties contractantes, en analyser rigoureusement la position, en peser pour ainsi dire les besoins, vous auriez la solution vraie du problème*' (see Campagnolo, 2009). Manuscript note facing page 108 in Menger's copy of the *Principles*: Menger quoted in French, we translate into English. Count Rossi had succeeded Jean-Baptiste Say as the Chair of Political Economy at the *Collège de France*. Menger annotated Rossi's economics textbook, which was then widespread.

¹⁶ See Jean Magnan de Bornier (2008).

entrepreneur, concerning himself primarily with the theory of capital” and “did not develop his theory of profit and loss to any great extent” (Hébert and Link 1982: 62-63). Despite this impression (from those commentators and those who rely on their views), Böhm-Bawerk did not ignore profit in its relationship with capital and interest: on the contrary, he raised the issue of distinguishing the profit of the entrepreneur from the interest of capital as early as his introduction to the first volume of *Capital and Interest*. Since this topic does not directly pertain to this paper (see Campagnolo and Vivel 2014b), suffice say that Böhm-Bawerk stressed the role played by the *Unternehmer* even where the latter did not contribute to the production process with his own work (as stressed by Menger; see quotes above), because in any case entrepreneurs still elaborate the strategy of firms, react to the environment or, at the very least, determine the means of production to be employed. This is a point where Böhm-Bawerk meets Menger, as the latter wrote:

However extensive the activities of these helpers may be, the four functions listed above can always be observed in the actions of the entrepreneur, even if they are ultimately confined (as in corporations) to determining the allocation of portions of wealth to particular productive purposes only by general categories, and to the selection and control of persons.¹⁷

Menger and Böhm-Bawerk agree that the entrepreneur plays that essential part in selecting what is needed to process production, taking into account time. Compensation remunerates that activity, meaning that profit and duration are related. Böhm-Bawerk wrote:

“One part of the ‘profit’ is simply the undertaker’s wage for the work he has done”? But even where he does not personally take part in the carrying of the production, he yet contributes a certain amount of personal trouble in the shape of intellectual super-intendence – say, in planning the business, or, at the least, in the act of will by which he devotes his means of production to a definite undertaking” (Böhm-Bawerk 1890/1954: 8).

Entrepreneurs make personal judgments and the value of their action lies in doing so: they choose the means of production to be employed. That judgment constitutes the *essence* of entrepreneurship, and the Austrian tradition would recognize it, as in Israel Kirzner’s remarks, as the revived interest in the entrepreneur *and* in Menger’s work on this topic:

To the extent that we wish to view the entire venture as an entrepreneurial one, we must focus attention on the entrepreneurial decision responsible for the venture. This decision was made before the original act of purchase; in fact it was a decision to buy in order to sell subsequently. (Kirzner 1973: 51)

¹⁷ Menger, C., *Principles, op. cit.* Chap. 3, § 3.c. Dingwall & Hoselitz (1871/1950: 160).

The *qualitative* nature of entrepreneurship makes foresight key in a causal nexus of interaction. German authors on the capitalist entrepreneur (*Der kapitalistische Unternehmer*, to quote a title by Sombart in 1909) probably saw the nature of capitalistic interest and return on investment less clearly than Böhm-Bawerk, but their analysis of the economic agent (or ‘economizing man’: *wirtschaftender Mensch*) similarly called attention to the fundamental underlying notions of time and the ordering process of goods/services in time and the subsequent inevitable uncertainty in the process caused by *vicissitudes*. Böhm-Bawerk did not hold exactly identical views on entrepreneurship to Menger¹⁸. Both thinkers nevertheless set the tone for further developments, whose consequences they could not, naturally, fully foresee.

To prevent interpretive errors, some commentators pointed early on to the limitations in Menger’s work. One such was Franz Weiss, whose analysis was later retrieved by Kirzner (1978: 44) whose concluding words quote a passage where Weiss (1924) stressed the incompleteness of Menger’s views. Weiss reported that Menger’s son (since the 1924 essay bears on the 1923 second edition of the *Principles*, which the son edited) told him directly how uneasy he felt about his father’s views on entrepreneurship, and that he was not ready to endorse all developments from them. However relevant the son’s opinion might be, the fact that despite this warning Kirzner traced back his own views to those Menger’s is significant enough to put research on this track. Similarly, this paper debates the views of Menger senior, not those of his disciples (close or remote). This is why I now wish to point to another side of the Mengerian approach, one which is even less often debated.

III. In line with Menger on time: a ‘quasi-anthropology’ in his *Principles*?

When considering the production process, Menger’s ranking of goods/services notably serves investment even before the notion ‘sale-ability’ (*Absatzfähigkeit*) dictates how a product in a given environment triggers human action in time. Plans are made by individuals, among whom those who undertake the most are called ‘entrepreneurs’. The overall social outcome results from intermingling plans, and cannot be predicted. As individual plans intersect, circumstances play their role and non-intended results surface, such as institutions – money being the paradigmatic example used by Menger. Part III of the 1883 *Investigations* distinguishes between such ‘organs’ (hence the term ‘organic’ used by Menger for those institutions, despite a broader history of the term; Hayek would later prefer to call them

¹⁸ This is consistent with the same observation made when comparing their views on capital (Magnan de Bornier, 2008).

‘spontaneous’) and intentional collective institutions (created thoughtfully and to serve specific goals – hence the opposite of organic/ spontaneous) – which Menger calls ‘pragmatic’ recognizes as playing a major role, *albeit not* the exclusive role assigned to them by the German Historicists, who practically ignored the organic/spontaneous kind of institution. Menger called attention to these two types of institution, while Hayek would later strictly emphasize the ‘spontaneous order’ for which Menger set the premise. Key here is the mechanism of exchange, understood from the point of view of subjective marginal reasoning, which results in (not ‘begins with’) understanding social interaction. I hold that there is actually more than Hayek was able to see there, and that it is hinted at by relevant elements of a quasi-pre-anthropological approach to Menger, justifying the argument that Karl Polanyi can be considered as a theoretical descendent of Menger as much as Hayek and Mises, albeit differently.

As mentioned above, from the *Principles* on – and especially as he reworked again and again his notes to be inserted in a second edition that he never himself completed – the notion of duration played a role in Menger’s use of time. This implied considering the environment (*Außenwelt*) in which individuals evolve. Duration it is, and it is *always* related to subjectivity, never through the lens of an external (or ‘objective’) appraisal of the nature of this environment, except in that some kind of satisfaction of need is more-or-less necessary to live (one would not survive long on tobacco alone, says he¹⁹ – or on drugs for that matter, as Vilfredo Pareto would later put it, to stress that economists must not judge the nature of desired goods, but simply acknowledge the individual’s choice). Now, threats to agents’ lives call them back to reality.

The environment in which those individuals dwell is precisely the frame within which they cannot help but represent their wishes: the notion of *embeddedness* is built in and *supports* (far from contradicting) the individual process of marginal reasoning, giving the latter a frame, so to speak, for each individual human action – especially when it comes to entrepreneurs, whose foresight regarding potential markets is key to their investments and developments. Without this knowledge, which is not so common, no innovation would emerge. Mengerian economics is seminal where thinkers point to sources in the understanding of the ‘real’ natural and social worlds that encompass individual life. Currents of thought such as institutionalism or environmentalism are not averse to Austrian thinking in this perspective; rather they tend to converge with it. This may have become unclear in the twentieth-century battles fought by Austrian economists against all kinds of supporters of a planned economy, a fight that may still find some fuel when emergency triggers the tired and conditioned response to seek control over

¹⁹ That example is the one Menger used to comment the famous triangular table where he explains the marginal reasoning: p. 93 of the original edition of the 1871 *Principles*.

the economy. But the key point here is that by providing the notions mentioned above for entrepreneurship, Menger's *Principles* can also be regarded as a source in Austrian, and specifically Viennese, thought, opening the path towards an 'anthropological' assessment of human action. Much later, Mises made use of this word for his own praxeology, but I leave this aside, even if it is related to the insight aimed at here (see Pinault 2020).

One point of interest is the relationship between time, subjective duration and attention for individual perception in the advancement of civilization as a whole. Human beings interact at the economic level by satisfying their needs through production, exchange and consumption (or exchange when direct consumption is not available). There is no need to assume some pre-existing instinct/'tendency to barter' to explain trade, as Adam Smith did and Menger rebuked him for at the beginning of Chapter 4 in the *Principles*, commenting on the *Wealth of Nations*.²⁰ Interest in early trade or barter and in coinage traditions, as well as the cogs and wheels of exchange (for instance, reciprocal gifts described in the works of Marcel Mauss) all contributed to the success of anthropological studies and the rise of 'analysis in context' well after Menger.

The German historicists were, of course, precursors and practitioners of so-called 'contextualism', both before their Austrian opponent and contemporaneously with him as well. For that matter, on money, for instance, between Karl Knies's textbook, *Das Geld*, and Chapter 8 of the *Principles*, common elements of reflection can be drawn from both sides, as is proven also by the presence of Knies' *Die Politische Oekonomie vom geschichtlichen Standpunkte* (Knies 1882) in Menger's own library. The essential divide between such works is the orientation taken by the analysis: both views are *dynamic*, but one starts from facts and processes them through induction, while the other (Menger's own) uses deduction or, as Karl Milford put it, abduction (Milford 1989). As the theory of goods/services (indicated above) shows the ordering of consumption goods and higher goods to be essential, the main trait of Mengerian analysis remains related to facts. Investigating physical goods that one may factually touch, effective tools and instruments, including archaeological and later so-called anthropological items, made sense for Menger as well. They were *illustrative* of the thought process that he was describing, either regarding the evolution of payment systems (see Latzer and Schmitz 2002) or for the evolution of tools and instruments. The general reasoning would include societies where trade tools were far less developed, or where altogether different

²⁰ The same point is mentioned *passim* in manuscript notes, but it is worth pointing out that while Menger seldom indicted classical texts directly in the main text of the published *Principles*, he put abundant references both in published pages and in (later) handwritten notes or appendixes.

patterns of exchange existed in practice. The point is that, within time, ‘men provide themselves with tools at each and every stage of civilization (*Kultur*)’²¹.

Menger described human societies as being formed from that usage of tools, contrary to animals, he adds at a general level²². For instance, the axe is a tool whose diversified forms Menger discusses in some detail. While his generalities – for example, the idea that such tools need to serve some subjective purpose for the individual if they are to be utilized and become a saleable good – offer no new insights (not unlike most examples in historicists’ compendia), Menger goes on to relate various sets of tools with individual human action in time, and in this way leads his discourse back to the issue of the division of labor, or rather the intensification of each task through innovation and new entrepreneurial foresight and investment. Time – at the individual level and as a result of the causality process it entails – ultimately leads to the evolution of civilization. The many types of axe have evolved for various purposes across the range of professions and human activities that make use of them²³. Menger defined human society as this multiplicity of agents who diversify their tools through innovation and investment along the many stages of development, which draws a parallel with the ‘stages of development’ (*Entwicklungsstufen*) set forth by Bruno Hildebrand.

Just as with Knies, the content of arguments may be closely aligned while the intended direction of investigation quite opposite. However, parallel to the German Historical School, the approach that later led to anthropological studies can also be sourced to the Viennese cradle. If not directly assignable to the Austrian School as it developed, but similar to entrepreneurial developments around Schumpeter’s motto of ‘creative destruction’ (*schöpferische Zerstörung*), the use of basic schemes provided by Menger in his reflections would nourish later works, such as those of Karl Polanyi. In fact, the author of the *Great Transformation* (1944) claimed he developed some of his views from the 1923 edition of the *Principles* (see Becchio 2011, Pinault, 2020). Menger’s exploration of the field of economic relationships in all fundamental directions has to be recognized, despite pro- and contra- orthodoxies around the Austrian founder. In Polanyi’s case, the reference lies in his chapter on “The Economy as an instituted Process” in *Trade and Market in the Early Empires. Economies in History and Theory*, edited by Polanyi

²¹ “Men are providing themselves with tools in all strata of the development of their civilization” (*Principles...* Appendix 4 in notes on Chapter 1 with regard to the volume by Gustav Klemm, commented upon at length by Menger (see Campagnolo 2020: 319-322): *Werkzeuge und Waffen (Tools and Weapons)* (Klemm 1858). Author’s translation.

²² Discoveries made since then about tool use among certain animals can be treated as exceptions. It also seems that one could, in the future (or perhaps even now?) add the same about artificial intelligence.

²³ *Principles...* (Campagnolo 2020: 321). Such remarks surfaced when conversing with Bastien Massé, a current PhD candidate on the theory of innovation and investment who extensively used Menger’s *Principles*.

with Konrad Arensberg and Harry Pearson (1957). Referring to the 1923 edition of the *Principles*, Polanyi stresses that Menger is, in his eyes, the only economist to pinpoint the issue that Polanyi sets forth: namely, that the usual concept of what is ‘economic’ folds two sides – ‘subsistence’ and ‘rarity’ – together into a single entity, without accounting for the notional risk of crushing between them the essentials of the notion. Now, to understand this (that is to say, to understand it as Polanyi thinks he does) is tantamount to recognizing what Menger had done and, therefore, to acknowledge the notions included in the *Principles*. In other words: like Hayek, Polanyi thinks Menger had it right, and both thinkers extrapolated from there. While Hayek reedited the 1871 edition of the *Principles*, Polanyi used the 1923 edition.

An appropriate understanding of such matters, stressing the role of time in a process of civilization, may be achieved by having in parallel an individual analysis of individual behavior and an observation of individual appropriation of goods/services within a given society/civilization. Both tendencies are based on methodological individualism. In fact, they were illustrated by Hayek and by Polanyi. Supported by the fact that Menger’s manuscript notes may serve both later thinkers, this view can be regarded as the idea that a *substantive* orientation in Menger *completed* (rather than opposed) his view of the field of exchange, leaving its mechanism untouched while providing a frame for which the *Principles* were an introductory work. Advanced, as well as ‘uncivilized’, economies would share in an essential distinction between acting economically in general (*wirtschaftend*) and acting in economizing ways (*sparend*), which is, in this sense, the reverse of maximizing investment on inputs by taking into account various existing frameworks through time (and various locations upon Earth). In that respect, Polanyi stands, in my eyes, as a descendent of Menger, yet somehow as a counterpart to Hayek and the *Road to Serfdom*, which was published the same year as *The Great Transformation*²⁴. Both are fundamental texts when it comes to understanding the evolution that Mengerian heritage could yield. Using Menger’s texts, both authors (and their followers) not only built their own theories, but challenged each other’s²⁵.

Polanyi’s use of Menger is a track that leads to the second edition of the *Principles*, where it is difficult to disentangle what belongs to the father or to the son: this may raise interest among commentators²⁶; however, the result is that the 1923 edition (which had practically been

²⁴ This position is shared by the editors of the French edition of Polanyi’s essays (Maucourant and Cangiani, 2012) and Maucourant, a specialist on Polanyi, recently published on how he related to Menger (Abdelkader, Maucourant and Plociniczak, 2020). See Becchio (2011) and Pinault (2020) as well.

²⁵ In fact, the debate was mostly between Polanyi and Hayek’s ‘older brother’, Ludwig von Mises (see Pinault 2020).

²⁶ For partly opposite, partly complementary views on the respective roles regarding the 1923 edition, see Scheall and Schumacher (2018), Campagnolo (2020: 212-226) and Scheall (2020).

consigned to oblivion by the mainstream in the Austrian school) also deserves attention²⁷.

Without entering further into such a specialized debate, the point here is that the development of entrepreneurial spirit in time lies in the capacity to pinpoint the evolution of individualism through human exchange, and that the anthropological level may be summoned for a somehow renewed understanding of the notion of *Kultur*²⁸ between the dominant German and the incipient Austrian schools, between institutionalist, contextualist views and the rise of methodological individualism in its variants. Is it then possible to talk about an economic anthropology in Menger? The question is too large to tackle here, as this paper should come to its conclusion – however I point to it as a stepping stone for further reconsidering Menger’s legacy. It should indeed call the attention of historians of thought, because a process through time that explains behavior via subjectivity and, from discussing investment, also leads to include levels of civilization in societies not only brings the Mengerian and Historical trends closer, but may contribute to re-establishing a comprehensive view of Austrian economics. And it was precisely this openness of mind which directed the founder of that school.

Conclusions

To conclude, Menger’s *Principles* opened more paths than have hitherto been noticed or rehashed. There is not only the ontology of social objects that heirs such as Hayek have tended to build, but a broader spectrum of analysis which actually pervades Menger’s inheritance. We find not only thinkers ‘registered’, so to speak, as belonging to the Austrian School (disciples such as Böhm-Bawerk and Hayek), but also commentators, both then and now (such as Weiss and Kizner) and companions from the Viennese cradle on (such as Schumpeter, whose stand for entrepreneurial innovation originated there, and Polanyi, who explicitly referred to some of Menger’s ideas, claiming them for himself). The study of the 1871 and 1923 *Principles* should therefore start from major notions – such as *time*, as in in this paper – and explore how they develop major themes – such as *entrepreneurship* here – and discover how Menger’s work opened the way to larger perspectives, such as *quasi-anthropology* via the notions of investment and stages of development. Both the insights and the limits of the original Mengerian prose should be explored, as should the further developments undertaken by its author (the abundant manuscript notes, appendixes, and so on). Such investigations can only show that *Principles* is still a seminal work a century and a half after it was written, and was debated over the course

²⁷ This had been stressed early on, for instance, by Giandomenica Becchio (2011), as put forth in Campagnolo (2008 and 2011: Editor’s Note).

²⁸ On the political economy of mankind and *Kultur* in the German realm, see Campagnolo (2010, Chap. 4).

of decades. Renewed inquiries into its legacy, undertaken with an open (but critical) mind, are greatly to be wished.

References

- Abdelkader, Nadjib and Maucourant, Jérôme and Plociniczak, Sébastien. 2020. Karl Polanyi et l'imaginaire économique. Paris: Le Passager Clandestin.
- Arensberg, Konrad, and Pearson, Harry and Polanyi, Karl (eds). 1957. *Trade and Market in the Early Empires. Economies in History and Theory*. New York: Free Press.
- Auspitz, Rudolf and Lieben, Richard. 1887. *Zur Theorie des Preises*. Leipzig: Duncker & Humblot.
- Becchio, Giandomenica. 2011. Existe-t-il une doctrine Menger qui soit 'hétérodoxe'? Sur l'interprétation des *Grundsätze* (1923) par Karl Polanyi. In (Campagnolo 2011): 167-186.
- Böhm-Bawerk, Eugen. 1890/1954. *Capital and Interest: A Critical History of Economical Theory*. Macmillan and Co., London. English translation of the first edition by William A. Smart in 1890.
- Campagnolo, Gilles. 2008 (Ed.) *Carl Menger. Discussed on the Basis of New Findings*. Frankfurt/Main–Wien: Peter Lang.
- 2009. Origins of Menger's Thought in French Liberal Economists, *Review of Austrian Economics*, 22/1: 53-79.
 - 2010 *Criticisms of Classical political economy. Menger, Austrian Economics and the German Historical School*, London–New York: Routledge. Foreword by B. Schefold.
 - 2011 (Ed.) Editors Note and Introduction: *Existe-t-il une doctrine Menger?* Aix-en-Provence: Presses Universitaires de Provence (Open source).
 - 2020. *Principes d'économie politique de 1871 de Carl Menger*. French translation of Menger's *Principles of Economics*, with a presentation, a history of the editions and manuscript notes by Menger. Paris: Le Seuil, series in « Économie humaine ».
 - 2022. Was Carl Menger Aristotelian? A Rejoinder and Clarification. *Cosmos + Taxis* 10=5+6: 88-99.
- Campagnolo, Gilles and Vivel, Christel. - 2012. Before Schumpeter: forerunners of the theory of the entrepreneur in 1900s German political economy: Werner Sombart, Friedrich von Wieser, *The European Journal of the History of Economic Thought*, 19(6): 909-944.
- 2014a (Eds). The Entrepreneur: Facets of Yesterday and Today. *Review of Economic Philosophy*, 15/1.
 - 2014b. The Foundations of the Theory of Entrepreneurship in Austrian Economics – Menger and Böhm-Bawerk on the Entrepreneur. *Review of Economic Philosophy*. 15/1: 49-98.
- Crespo, Ricardo. 2022. Was Carl Menger Aristotelian? *Cosmos + Taxis*. 10: 5+6: 75-87.
- Hayek, Friedrich. 1945. The Use of Knowledge in Society. *The American Economic Review*, 35(4): 519-530.
- Hébert Robert and Link, Albert. 1982. *The entrepreneur: mainstream views and radical critiques*. New York: Praeger.
- Hoselitz, Bert. 1951. Early History of Entrepreneurial Theory. *Explorations in Entrepreneurial History*, 3(4): 193–220.
- Kauder, Emil. 1963. *C. Menger: Zusätze zu Grundsätze der Volkswirtschaftslehre*. Tokyo: Hitotsubashi University.
- Kirzner, Israel. 1973. *Competition and entrepreneurship*. Chicago: University of Chicago Press.
- 1978. The entrepreneurial role in Menger's system, *Atlantic Economic Journal*. 6(3): 31-45.
 - 1997. Entrepreneurial Discovery and the Competitive Market process: An Austrian Approach, *Journal of Economic Literature*, 35(1): 60–85.
- Klemm, Gustav. 1858. *Die Werkzeuge und Waffen*. Leipzig: Sondershausen.
- Knies, Karl. 1882. *Die Politische Oekonomie vom geschichtlichen Standpunkte*, Braunschweig.
- Latzer, Michael and Schmitz, Stefan. 2002. *Carl Menger and the Evolution of Payments Systems: from Barter to Electronic Money*. Cheltenham: Elgar

- Magnan de Bornier, Jean. 2008. Comparing Menger and Böhm-Bawerk on Capital Theory, in (Campagnolo 2008 Ed.): 217-232.
- Mataja, Viktor. 1884. *Der Unternehmergewinn*. Vienna.
- Menger, Carl. 1871. *Grundsätze der Volkswirtschaftslehre*, Wien, Wilhelm Braumüller. English translation, by James Dingwall and Bert Hoselitz, *Principles of Political Economy*, Glencoe, Illinois, 1950 (reed. 1976. New York: Institute for Humane Studies).
- 1923. *Grundsätze der Volkswirtschaftslehre*, reed. by Karl Menger son, Vienna, Hölder-Pichler-Tempsky (posthumous edition by the son of Menger without various archives).
 - 1883. *Untersuchungen über die Methode der Socialwissenschaften und der politische Ökonomie insbesondere*, Leipzig: Dunckler & Humblot. English translation (part) by Francis J. Nock, *Problems of Economics and Sociology Urbana*, 1963. *Investigations into the Method of the Social Sciences with Special Reference to Economics*. New York: New York University Press, 1985 (full version by Lawrence H. White completed upon the previous English translation).
 - 1888. Zur Theorie des Kapitals, *Jahrbücher für Nationalökonomie und Statistik*, Jena, neue Folge: XVII(3).
- Milford, Karl. 1989. Zu den Lösungsversuchen des Induktionsproblems und des Abgrenzungsproblems bei Carl Menger, Verlag der Österreichischen Akademie der Wissenschaften, Vienna.
- O'Driscoll, Gerald P. and Rizzo, Mario J.. 1985. *The Economics of Time and Ignorance*. New York, Blackwell, 1985.
- 2015. *Austrian Economics Re-Examined: the Economics of Time and Ignorance*. London: Routledge.
- Pinault, Santiago. 2020. Karl Polanyi vs. Ludwig von Mises. Esquisse d'un anti-formalisme vétéro-autrichien. *Austriaca*. Special issue 'L'école autrichienne d'économie' 90: 173-196.
- Polanyi, Karl. 2008. *Essais*. French translation and presentation by Maucourant, Jérôme and Michele Cangiani. Paris: Le Seuil, series in « Économie humaine ».
- Rossi, Count Pellegrino, *Cours d'économie politique*, Paris: Éditions du Collège de France, 1852.
- Scheall, Scott. 2020. Karl Menger's Unfinished Biography of His Father: New Insights into Carl Menger's Life through 1889, CHOPE Working Paper No. 2020-01, <https://www.econstor.eu/bitstream/10419/213009/1/1686963343.pdf>, retrieved 20 March 2021.
- Scheall, Scott and Schumacher, Reinhard. 2018. Karl Menger as Son of Carl Menger. *History of Political Economy*. 50/4: 649-678.
- Sombart, Werner 1909. Der kapitalistische Unternehmer, *Archiv für Sozialwissenschaften und Sozialpolitik*, XXIX(3): 689-758.
- Streissler, Erich. 1989. "Der Unternehmer in der Nationalökonomie des 19. Jahrhunderts". In B. Gahlen, B. Meyer and J. Schumann (eds) *Wirtschaftswachstum, Strukturwandel und dynamischer Wettbewerb*. Berlin: Springer Verlag. Pp. 17-33.
- Weiss, Franz, 1924. "Zur zweiten Auflage von Carl Mengers 'Grundsätzen'". *Zeitschrift für Volkswirtschaft und Sozialpolitik* (new series) 4.
- Yagi, Kiichiro. 1993. Carl Menger's *Grundsätze* in the Making. *History of Political Economy*: 25(4): 697-724.