II Realism and explanation

1 Introduction

Eugen von Böhm-Bawerk was convinced that his theories approached the economic truth closer than competing theories of income and distribution. Although in method he was opposed to the German historicist – non-theoretical – conception of good social science, he took above all on the British Classical Economists who had studied Political Economy theoretically.

Section 2 shows how the quest for conceptual unification was the main engine that directed the development of the Böhm-Bawerkian position opposing the British objective value theories. Section 3 discusses the essentialist epistemology that is involved in his idea of the existence of a leading principle that tells the scientist what aspect of economic reality is primary and what secondary. The primary aspects are the really explanatory ones, but they are often ‘underlying’, in the sense that these do not easily come to the phenomenological fore. Deduction and theoretical research is needed.

The Swedish economist Knut Wicksell is known as the economist’s economist as he reformulated the theories of others. His 1892 Kapitalzins und Arbeitslohn (K&A) summarised Böhm-Bawerk’s system. The 1893 Über Wert, Kapital und Rente (WKR) condensed the interest and distribution theory of Böhm-Bawerk into a mathematical form. Section 4 summarises this mathematical model and assesses the advantages and disadvantages of a mathematical approach in contrast with a discrete and numerical ‘Austrian’ approach. I maintain that Wicksell, though highlighting much of Böhm-Bawerk’s obscure verbalization of his theories, misinterpreted the Austrian’s intentions. I stress the merits of Böhm-Bawerk’s approach and conclude that one element of his reasoning that confused many later commentators – Wicksell included – can be seen as the demand curve for capital in a Marshall-like partial analysis. Some of Wicksell’s criticism is rejected.

Section 5 follows up on this and leads to the conclusion that, although a mathematical analysis helped Wicksell to calculate market results by way of comparative statics, its very sophistication obscured the mechanical genesis of these results. Böhm-Bawerk had not wanted to assume this ‘underlying’ mechanics away. Against this background the Austrian method in general, often rejected as clumsy, comes to stand in a different light.
2 The Subjective Value Theory as a unifying tool

I shall now look into the way Böhm-Bawerk defended the Subjective Value Theory of his predecessor Menger – referred to below as SVT – against the classical theories summarized as Objective Value Theory – which will be referred to as OVT. A core theorem in OVT was the Law of Costs. The debate over the Law of Costs was Böhm-Bawerk’s major instrument for convincing the scientific community that SVT was the only true and fully explanatory theory of prices. The first time that he developed his argument was in his (1886) ‘Grundzüge’. A newer version became the bulk of chapter II of Book three of Positive Theorie des Kapitales (1888, also of the second volume of Kapital und Kapitalzins). He also gave a critique of the Law of Costs in the excursion VIII: ‘betreffend den Wert von Produktivgütern und das Verhältnis von Wert und Kosten’ published in the third volume of the (1912) third edition of Kapital und Kapitalzins. In this polemical essay he strengthened his stance and responded to various criticisms.

2.1 The Law of Costs and the Law of the Marginal Agents

The Law of Costs (from now on: LoC) claims that end prices are equal to costs of production. This appears to be confirmed by a tendency of prices to respond to changes in productivity and output. The OVT theorists concluded not only that the trigger of such a tendency lies at the input (cost) side but also that the cause of a settlement of costs with end prices is to be found there. The trigger and the cause are not one and the same thing. A succession of phenomena may be triggered by an intervention (or by an ‘autonomous’ change in a variable) while the cause of a particular end state of this succession can best be explained by reference to a make-up of the world at some place other than where the trigger strikes:

Die größere Häufigkeit eines Produktivmittels ist (indirekt) Ursache des geringeren Wertes des Produktes; aber der ebenfalls indirekt hieraus entspringende geringere Wert der Produktivmittel ist trotzdem nicht Ursache, sondern Folge des geringeren Wertes der Produkte.2

There is an endogeneity problem at stake here. Böhm-Bawerk’s point was that the start of the causal chain with a change in the amount of inputs is not a at one fell swoop also the start of another causal chain with a change in the value of the inputs. How can this be? Ornate examples in PTK are furnished with such colourful end products as tobacco, safety belts, ice-machines, Johannisberger wine, distilled alcoholic drinks, and leaking ships. Here are three of them.

The Law of Costs, Böhm-Bawerk contended, would never satisfactorily explain the phenomenon of a rising value of land after the introduction of a fixed

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1 The second and the third volumes of Kapital und Kapitalzins also appeared as the first and the second volumes, respectively, of Positive Theorie des Kapitales, 4th edition, 1921. As in chapter I, I shall refer to the first volume as PTK and to the second as PTK, Vol. 2.

2 PTK, Vol. 2, p.188.
(high) export price for agricultural produce. The objective value theorist would have to start his explanation at the higher price of land and next move to the legal minimum price of exports, that was introduced by the administration. Böhm-Bawerk called in David Ricardo as witness, who had written that ‘Corn is not high because a rent is paid, but a rent is paid because corn is high’. As it happens, this is an exception to the very law defended by the objective value theorist Ricardo! Moreover, Ricardo leaves the exception unexplained. To be sure, he shared with Malthus and Von Thünen the view that a high demand for agricultural produce leads to the employment of less fertile portions of land. This process will thus make those sections of land, which have previously been taken into possession, scarce. This scarcity is in turn the source of income for the land owner. The Ricardian explanation runs in the same direction as SVT, but is plainly inconsistent with the objective approach! Böhm-Bawerk held that explanations of real market phenomena, which situated causes at the subjective end – the end where individual choices are made – are more consistent and unifying. Ricardo’s alleged mistake had brought his very own theory in jeopardy.

A second example starts by asking what the causal origin is of the practical worthlessness of a new but leaking ship. It can not be the costs incurred in making it, for sure, which cause the low value of the ship. The OVT theorists had to reach out for an explanation of the paradox and contended that costs are the cause of value and price, but with the exception of goods without utility.

The third example is a simple question: whence the deviation between the historic production costs of an irreplaceable good, like a rare jewel, and its high price? Well, the OVT theorists contended, costs do still determine value and price, but only of replaceable goods. OVT theorists, Böhm-Bawerk diagnosed, piled clause upon clause to get it their own way and they were thus prone to get entangled in ever more complex modelling. But “[j]ene Klauseln markierten die Bedingungen unter welchen die Kosten selbst in Übereinstimmung mit dem Grenznutzen bleiben”. The conceptual problems OVT theorists got entangled in already show the way to SVT. Böhm-Bawerk was convinced that the SVT-inspired way of explaining was also capable of dealing with the Reibungswiderstände (friction): no further complexities had to be added to the mechanistic explanations, even of cases in which friction was allowed, because the relevant assumptions were dispensable with regard to those explanations.

Menger had proposed the Law of Marginal Agents (from now on: LoMA) as a theorem of SVT. The example of the horse market in the previous chapter (section 4.2) illustrates this explanatory law. LoMA says that the agents – buyers and sellers

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3 PTK2, p. 191.
5 Böhm-Bawerk (1886), p.72.
6 Böhm-Bawerk (1886), p.73. Böhm-Bawerk often stressed the impossibility to consistently follow the objective reasoning to its end. See particularly pages 61-73, where he develops his views on the value of inputs in complicated cases.
Chapter II

– who ‘operate in the margin’ determine price. But if the market is crowded enough, it is ultimately the marginal utility of the demander that sets the objective value, or price, because demanders are not prepared to pay more for a good than the marginal utility of fulfilling an extra need for that good (see table II.2). So how does LoMA deal with friction?

In everyday practice market equilibria continue to be disturbed. Indeed, friction and disturbance is rule rather than exception:

Solche „Reibungswiderstände“ gibt es in der Praxis unzählige. [...] dadurch nimmt das Kostengesetz seinen bekannten Charakter eines bloß beiläufig geltenden, über und über von Ausnahmen durchsetzten Gesetzes an. Whenever indispensable assumptions threatened OVT, classical economists dogmatically tried to rescue this theory. As Böhm-Bawerk’s examples show, defending that costs cause the value of end products requires all sorts of clauses, which mend the explanations. So to the Law of Costs the disturbances are exception instead of rule. But how can this be if costs rarely are equal to prices?

Mengerian SVT, in contrast, explains the precise succession of events during disturbances in the following manner. The marginal utilities of final buyers determine the price of inputs. A greater abundance of inputs (a fall in scarcity) makes it possible that a larger share of end users’ needs are satisfied, a process by which the utility of an extra unit of satisfaction drops. Hence, the most competitive buyer is not prepared to pay as much as he did before the fall in scarcity. (I have phrased this as a lower intensity of demand.) The confrontation of the amount and intensity of demand and of supply results in (objective) market prices. Thus, the increased productivity of an ore mine decreases both the price of steel and of the ore itself; but it does so with the utilities of the end users as prime causal instance, in spite of the fact that the trigger of the process is the discovery of a new lode or the design of a newly organised production process; that is, notwithstanding triggers lying at the cost side. As a regularity, rather than as an explanatory law, the ‘Law’ of Costs is a theorem of SVT (in conjunction with the assumptions 1 to 8; see section 2.4 of the previous chapter) too because, with these assumptions holding, a convergence of end prices and costs is to be expected.

But to Böhm-Bawerk it was clear that the classical theorists assumed the Law of Costs to be confirmed if it was taken as a mere ‘tendency’ toward equilibrium. If costs and prices deviate too much, disturbing circumstances allegedly obscured the picture. Rid these and initial conditions are stable: no friction. This is the case if assumptions hold.

In sum, the LoC is implied by OVT in conjunction with the assumptions 1-8 only, because it is a theorem of the ideal, limiting case. If the Law of Costs is con-

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7 Huncke, in the 1959 translation of Böhm-Bawerk’s Positive Theorie des Kapitales calls it the law of marginal pairs, after the German ‘Gesetz der Grenzpaare’. Huncke thereby refers to the marginal goods (the cost good, like money, and the good for sale) instead of to the agents. The Austrian value theory focuses however on how demanders and suppliers take decisions in the margin. Therefore the term Grenzpaare must be read, I believe, as referring to the marginal buyers and sellers involved.

8 PTK, p.316.
firmed, so is OVT. If the assumptions are false there is no longer such implication. Hence, an actual unstable environment falsifies the Law of Costs and, hence, OVT. Compare this to LoMA as a theorem of SVT. Even without the assumptions, LoMA is true, and it is explanatory. This means that Austrian SVT encompasses both ideal cases and real world cases. The theory Menger had proposed before Böhm-Bawerk had the power to bring together descriptions of aspects of real world cases with aspects of strongly idealised cases. One can say that SVT unified characteristics of the actual and of hypothetical worlds under one explanatory principle. The scheme above gives Böhm-Bawerk’s idea in relation to the key assumptions. It shows the advantage of SVT over OVT: that the question whether assumptions 1 to 8 are fulfilled is irrelevant. If the assumptions do not apply, the processes triggered by changing initial conditions, or by market imperfections, can be described by SVT, just as well as the end results of these processes, viz. the new equilibria.

![Diagram](image.jpg)

The current subsection investigates how Böhm-Bawerk could use this unifying explanatory power as a confirmation of the truth of SVT. Menger’s theory explained the order of the phenomena if something changed at the input side of production. If this worked, whence the appeal of the competing OVT for classical economists? The answer lies in the observable tendency of prices and costs to often (though not always) converge. As I try to explain in the following subsection, this is a regularity that the OVT theorists mistook for an explanatory law.
2.2 Layman’s observation and empirical justification

To recapitulate, objective value theorists believed the Law of Costs to hold at all times, not only in very special cases. But it turns out to lose its explanatory power whenever markets are out of equilibrium. This is the point where Böhm-Bawerk took on the perhaps appealing but false theory. He welcomed any disturbance one thought of and set it to work for mechanistic reasoning.

Objective value theorists could only sustain their theory, Böhm-Bawerk pointed out, under the condition that all the idealising assumptions held. The Austrian SVT had no such problem. These assumptions are dispensable with regard to SVT and not dispensable with regard to OVT. Dropping an assumption does not bring the subjective value theory into jeopardy, but, on the contrary, provides extra support for it.

The problem with the Law of Costs is that it makes it seem true that costs determine price, if the price is considered as a mere result of a process:

Ginge die Produktion in – praktisch undenkbar – idealer Vollkommenheit vor sich, ungehemmt durch die Schranken des Raumes, zeitlos, ohne jede Reibung, […]; dann würden auch die originären Produktivkräfte mit idealer mathematischer Genauigkeit in die lohnendsten Verwendungen investiert, und das Kostengesetz würde […] in idealer Reinheit gelten. Es würden die komplementären Gütergruppen, […] genau denselben Wert und Preis behaupten, also das Genußgut genau seinen Kosten […] gleich gelten, bis zu den letzten originären Produktivkräften herauf, […]. Diese ideale Symmetrie wird aber durch zwei Störungsursachen durchkreuzt.10

The first ‘disturbing cause’ he alludes to in the last line of the quote refers to friction. Allow friction and you will allow sluggishness in market adjustments and, hence, the existence of which is implied by a mechanistic analysis.11 But prices of goods – as end states of market adjustments – are more easily visible than the mechanisms by which they come about. In consequence, the Classical Economists tended to impose a direct causal relationship on the phenomena of rising supplies and lower prices, or on the equality of costs and end price. It is easy to be seduced by the appeal of the Law of Costs as an alleged causal relationship. The appeal can be strong, but that does not make the causal relationship in any sense ‘fundamental’. Hume saw our knowledge of causes to be ‘a determination of our mind to form a more lively idea of an effect out of an impression of the cause’.12

With Hume, then, we could say that the Law of Costs appears to reflect a causal

9 For instance in PTK, p.427, note 1: Die Unrichtigkeit einer Theorie erweist sich daran, daß sie nicht für alle vorkommenden Fälle eine befriedigende Lösung zu geben vermögt.
10 PTK, p.315.
11 The second disturbance is the course of time needed before a means of production yields its fruit [der Ablauf von Wochen, Monaten und Jahren, die verstreichen müssen zwischen dem Einsatz der originären Produktivkräfte und der Darbietung ihres genübfreien Schlussproduktes (PTK, p.316)]. Note that this is not time as an existence condition of mere sluggishness of adjustment processes in the market, but time due to which the genesis of interest is possible, i.e. as a productive factor. This concerns his interest theory, not his value theory.
12 Hume (1890 [1739]), Book 1, Part 3, Section 14, and the appendix to the first volume.
ordering.

But clearly, ‘the mind’ may be wrong in seeing causes and this is what Böhm-Bawerk maintained with respect to the Law of Costs. He offered an alternative explanation, which was empirically more successful, although the evidence is rooted in layman’s observation. As an economist, he transcended lay knowledge not by more scientific ways to observe, but by ‘redescribing’\textsuperscript{13} the phenomena in terms of some underlying mechanism. As the mechanistic treatment of economic phenomena enables the SVT theorist to account also for other than only limiting cases it is an explanatory better theory. It describes what happens if market parties meet regardless of idealised equilibria, and how this happens, while it also tells us what the result will be in the ideal case. OVT, and its quasi-law LoC, only tell us about a particular result, not about what happens if the process leading to this result is disturbed. LoC cannot be cashed in as a true law. Or, in other words, whereas LoMA is an explanatory law, LoC merely describes a weakly instantiated regularity.

The claim of comparative success of SVT relative to OVT finds justification in its being instantiated by the evidence twice instead of once. OVT is confirmed by the occasional tendency of prices and costs to converge only, but it is falsified when they diverge. SVT is confirmed in both cases; SVT, in combination with the appropriate respective initial conditions, allows for both convergence and divergence.

The following table summarises the positions.

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<th>OVT $\vdash$ LoC</th>
<th>SVT $\vdash$ LoMA</th>
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<td>convergence</td>
<td>explanation</td>
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<td>divergence</td>
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Böhm-Bawerk displays an interesting way to exploit the evidence in support of the subjective camp. On the one hand the reader is often persuaded by the reference to claims, which are supposed to be ‘obviously’ true, about everyday experience. Böhm-Bawerk regularly expressed himself in terms like ‘[h]ierüber hat, wie ich glaube, jedermann reichliche unmittelbare Erfahrungen’, and so on, to prove his point\textsuperscript{14}. On the other hand, appearances could be deceptive and layman’s observation was to be distrusted in favour of scientific vision.

Es gibt eine Fülle von Beispielen, in denen die von mir behauptete

\textsuperscript{13} The term has been introduced by Uskali Mäki in the context of Austrian economics. See Mäki (1992a).

\textsuperscript{14} PTK, p.123.
Abhängigkeit des Wertes der Produktivmittel vom Wert ihrer Produkte auf
das sinnfälligste zu Tage tritt, und es gibt – bei sorgfältiger Analyse – keinen
einzigen Fall, der sich als Probe für ein paritätisches Verhältnis zwischen
beiden bewähren würde: ein flüchtiger Anschein hiefür kann entstehen, der
aber einer sorgfältigen Analyse nicht lange standhält.  

Böhm-Bawerk’s frequent reference to friction accords with his frequent use
of the method of introducing and subsequently dropping assumptions that helped
demonstrate that SVT is true. Dispensability of assumptions was the key justifica-
tion criterion. He thereby defended his claim that SVT could explain better than
OVT by referring to the scope of the explanations in terms of a subjective approach
in comparison to those in terms of an objective approach. All possible disturbances
could be dealt with by the true theory. SVT was able to cover a manifold of phe-
nomena as instantiations rather than as disturbances, while the competing theory
could not do this.

3 Essentialist metaphysics

Above I contended that Böhm-Bawerk did not pretend to scientifically transcend
lay observational methods but that he did believe to offer really scientific explana-
tions. The description of the explanandum was not better from what anyone could
tell, but the description of the explanans. In the famous review of Schmoller’s Zur
Litteraturgeschichte der Staats- und Sozialwissenschaften, a book celebrating the fiftieth
anniversary of Roscher’s doctorate16, Böhm-Bawerk acknowledged the importance
of phenomenal reality – accessible to non-scientists – as a guide for the scientist,
but he stressed its uselessness if not helped by what he called geistige
Durchdringung.17 This argument gave him ammunition to defend the so-called ‘de-
ductive method’. There are superficial and deeper ways to observe and, noticeably,
his was deeper. His convictions are directly related to his very strong kind of real-

3.1 The ordering principle of the phenomena

Böhm-Bawerk accused not only objective value theorists of mistaking more acci-
dental phenomena for the expression of leading principles. He did so, throughout

16 Böhm-Bawerk’s review was translated in the same year by Henrietta Leonard in the Annals of the
American Academy as ‘The historical versus the deductive method in political economy’ and came to
stand as the fiercest expression against the German historical method of political economy. Wilhelm
Roscher was the predecessor of Gustav Schmoller and he had expressed his views on the historical
method in a much more moderate fashion than his pupil Schmoller did. See Böhm-Bawerk (1890b).
PTK and in other work, with regard to all of his opponents. An instructive passage can be found in his discussion of Ricardo’s interest theory:

> Die Signatur der Rententheorie Ricardos, die im wesentlichen bis heute herrschend geblieben ist [...] ist: eine Fülle von Wahrheit in falscher prinzipieller Formulierung; eine glänzende Kasuistik, die nur die Anknüpfung an das erleuchtende richtige Prinzip nicht finden kann, und die darum, nachdem sie ein Stück der Erklärungsbahn hell beleuchtet hat, in Dunkelheit und Irrung ausmündet.

Böhm-Bawerk’s point is that facts without some ordering principle do not indicate anything as to the direction of, for instance, causes. This ordering principle is underlying in the sense of ‘not immediately visible’, it can be hypothesized, it can even be seen by some ‘inward eye’, though it must be somehow tested by verification - and for this one can turn to the casuistry again.

The metaphor of ‘seeing’ is strengthened by those of light and darkness. However, the ordering principle that helps one to clearly see is to be found in reality rather than just in the economist’s mind, the appeal to introspective efforts notwithstanding. Take the following lengthy quote.

> …die Thatsachen sind nicht so gefällig, sich von selbst Glied für Glied in einem übersichtlich geordneten Stufenbau, der von den speziellsten bis zu den letzten allgemeinsten Thatsachen hinaufleiten würde, dem Blicke des Forschers zu präsentieren. Sondern wenn auch freilich jener geordnete Aufbau in der Wirklichkeit stets vorhanden ist, so ist er selten oder nie in seiner Vollständigkeit unmittelbar sichtbar. Einzelne Zwischenglieder, einzelne Stufen sind uns fast immer vorerst verborgen, und ihre Existenz muß erst durch deduktive Operationen erschlossen werden, deren Ergebnis dann durch Verifikation an der Erfahrung sichergestellt werden mag. [...] Wenn man nur die Thatsachen, die äußerlich wahrnehmbar sind, für sich sprechen lässt, so wird man niemals erfahren, ob der Wert der Kostengüter die Ursache oder die Wirkung des Wertes ihrer Produkte ist. Man sieht leicht, daß ein Zusammenhang zwischen ihnen besteht, aber durch die Komplikation der Verhältnisse ist der ganze Aufbau für unsere Auge so verdrückt und verschoben, daß man nicht ohne weiteres erkennen kann, welche der beide Thatsachen die niedrigere und welche die höhere Stufe des kausalen Baues einnimmt. Was hier die körperliche Auge nicht sieht, muß erst das geistige Auge durch eine Reihe verwinkelster abstrakter Schlüsse rekonstruieren. Dies hat bekanntlich die Theorie des „Grenznutzens“ und erst sie in einer Weise gethan, daß die innere Ordnung der Gedanken hier wirklich vollständig hergestellt, und zugleich die Probe der Erfahrung vollständig bestanden ist.

The emphasised sentences teach us two things. First, the ordering principle that enables us to see is ‘out there’ in the actual world (first emphasis), so it is not a Kantian principle. Second, we can get there by *abstraction*. In this quote, abstraction is possible when we set our intellectual capacities in motion. It is an epistemic mode which subtracts from the phenomena a multiplicity of superficial properties.

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18 PTK, p.425.
19 Böhm-Bawerk (1890b), pp.87-88. My italics.
as these blur the picture. After subtraction, the explanatory clues remain. Naturally, our fallibility often induces us to erroneously abstract the non-instructive aspects from observed cases; but the scientific target is the ‘deeply hidden’ keys that can be reconstructed. The causal relations that matter can be known by the discovery of the right objective ordering principles underlying the socio-economic world.

Böhm-Bawerk often repeats the view that these principles lie covered, waiting to be dug up:

[I]ch glaube in der Tat, daß es weder eine einfachere, noch eine natürlichere, noch endlich eine fruchtbare Vorstellungsweise von Tausch und Preis gibt, als wenn man die Preisbildung im Lichte einer Resultantenbildung aus den in der Gesellschaft vorhandenen subjektiven Wertschätzungen betrachtet. Es ist dies kein Gleichnis, es ist lebendige Wirklichkeit. 20

Again, his metaphysics seems to assume that causal relations exist in the economic reality economists explain. Concerning the scientific need to penetrate onto the key underlying factors he said:

Und wieder nicht anders steht es bei einer ganzen Reihe theoretischer Probleme, z.B. bei der Frage nach dem wahren Wesen des Einflusses von Angebot und Nachfrage auf den Preis; nach dem wahren Wesen der Funktion des Kapitaless in der Produktion; nach dem Ursprung des Kapitalzinses, nach dem Zusammenhang zwischen Ersperrung und Kapitalbildung u.s.f. 21

Causal relations, I conclude, exist independently of scientific perspectives or of scientific success or error. The term ‘wahren Wesen’ in this quote must be understood literally, in a strong essentialist sense. It is at the level of causal relations that we find metaphysical kinds.

3.2 A unified order

The belief that some phenomena are accidental (secondary) and other parts of reality express leading (primary) principles applies not only to the issue of the Law of Costs that has been discussed in section 2 above. Böhm-Bawerk believed this with regard to the domain of the economic science as a whole. He assumed the economic world to be essentially unified. A nice example is how he referred to the unifying capabilities provided by his own interest theory.

As we have seen, he noted that the economists of his day had proposed the Use Theory of loans and interest. According to this theory, money is handed over to the one who borrows it, in order to temporarily entitle the debtor the rights to make whatever use of it, in exchange for a reward, this reward being the interest of the loan. But if this were the correct description of the phenomenon of borrowing, Böhm-Bawerk asked, how could anyone borrow firewood and use it? His alternative interpretation has substantial consequences. The importance of the exchange

theory (Tauschtheorie), as opposed to the use theory (Gebrauchstheorie), is that it also helped to unify the scientific descriptions of similar phenomena: for the same was true in case of the market for credit and for the market for finished goods. The existence of interest is rooted in the difference in value between present and future goods. This difference, as settled on the market for credit, is the interest. The market of subsistence goods had to be understood as a market for exchange of present (finished) goods against future goods (fruits of labour). The Tauschtheorie provided for explanatory unification, because it showed how interest was a price concept resulting from subjective welfare accounting. The Tauschtheorie subsumed the horse market and the credit market under one and the same concept, the Gebrauchstheorie presented the credit market as yet another institution.

Apparent deviations from what we may expect to be the case according to the theory defended are explained by subsumption under the leading principle. A negative (real) interest, for instance, can only occur when the proportion of needs to satisfaction in the future is somehow perverse. Future goods will then be worth more than present goods. In other words, interest will be negative whenever there is reason to expect future levels of satisfaction to be grim. But negative interest is rare. A zero interest rate can be explained along similar lines, consistent with the theory defended. As a rule of experience, trade takes place under conditions of positive interest. But Böhm-Bawerk again takes prima facie deviations from the comprehensive rule, rare as they are, as confirming and not as falsifying instances. Again, his theory is able to cope with what for the Use Theory are deviations. To phrase it more evocatively, such facts of life, precisely due to their being eccentric, confirm the Exchange Theory rather than falsify it. One notes the analogy with the defence of the Law of the Marginal Agent. To Böhm-Bawerk, it is clear that the Use Theory will never be able to explain deviant, special cases:

Gerade das Vorkommen solcher Fälle scheint mir übrigens eine nicht zu unterschätzende Probe mehr zu Gunsten meiner Darlehenstheorie zu bieten.
Denn wie wollen die Nutzungstheoretiker dieselben erklären?23

We can see that the theoretical unification brought about by the Exchange Theory helps finding out what aspects of actuality must be understood as principal, displaying an essential causal structure with an abstract kind status.24

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22 His ideal of explanatory unification can be interpreted in an analogy with Michael Friedman’s explication, who proposed to qualify an argumentation as more explanatory and unified if the number of independent phenomena that we accept as ultimate in this argumentation is minimised (and, hence, the number of conclusions maximised). See Michael Friedman (1974), p.15. He notes that the idea that this is essential for scientific explanation has been observed by William Kneale already in 1949. Philip Kitcher explicated explanation as unification by reference to an explanatory store, which forms ‘part of a systematic picture of the order of nature’ (Kitcher 1989). It seems to be appropriate to ascribe to Böhm-Bawerk the wish to give a systematic picture of the socio-economic realm.

23 PTK, p.373.

24 Chapter V discusses the status and meaning of abstract kinds.
3.3 Essentialism, reduction, abstraction

Böhm-Bawerk’s realism embraces a criterion of appraisal that compares theories on the basis of unifying power and, by implication, explanatory success. His apparent confidence that such success suffices to believe in the truth of one theory presumes that the world itself is unified in the very same way as the conceptual apparatus tells us it is. To underpin that this view on theorising is to be characterised as essentialist, I now make more precise what essentialism means. *Essentialism is the belief that there is one best way to conceptualize our theories about the world and that this ultimate conceptualization captures the joints of the world that awaits discovery.*25 (Note that this does not exclude fallibilism: one may be essentialist and prudent at the same time.)

I hope to have shown that the epistemological and ontological underpinnings of the economics of Böhm-Bawerk are essentialist. Essentialism is a very strong reading of the sort of realism held by him (and by Austrian economics more generally). But, on the other hand, such an interpretation of Böhm-Bawerk’s methodology is not out of the ordinary. Caldwell (2004) mentions Barry Smith26 as one who favours to interpret Mengerian economics in an essentialist conceptual framework of Aristotelian lining and coins it ‘the dominant reading’.27 He also mentions Emil Kauder as an early interpreter who understood Menger’s ‘exact types’ as Aristotelian essences.28 Uskali Mäki has written extensively about the essentialist epistemologies of several Austrians – and of some other economists. I treat his view in detail in appendix 3.

Nevertheless, in the same appendix, I also consider the contribution by Karl Milford, against the idea that essentialist views underpin the Austrian method of research: he instead says that there are better reasons to take the Austrians as employing a Kantian and the German historicists as taking an Aristotelian view. Had the historicists indeed believed that there were essences (or kinds) to be found at the social rather than at the individual level then it would have been rational for them to exploit means of research that aim to find these kinds. Milford reasons that the Historical School sociologists are holists and that, *by implication*, they must be essentialists too. The Austrians, in turn, are said to represent a more Kantian view of the preferred practice of social science. Thus, the Austrians and the Germans allegedly represent the two broad positions of individualism and collectivism re-

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25 This definition comprises essentialist epistemology to the extent that theories allegedly are meant to dig up essences, or *kinds*. It comprises essentialist ontology to the extent that this world is indeed supposed to be as it is, with all its joints in place. To conclude, it comprises a semantics that fits essentialism too, as the key concepts must capture something from the world. I shall focus on epistemological and the semantic aspects of it in chapter V. The epistemological aspects of essentialism are considered above all when the question of tenability is at stake (section V.2). The semantic aspects of essentialism are given attention when discussing the Causal theory of Meaning.

26 Specifically Smith (1986) and Smith (1990).


28 Kauder 1957). Aristotle has also been ‘used’ to defend the opposite stance.
spectively. The former point to the atomistic constituents of social reality as the keys to satisfactory social explanations, the latter point to social wholes as the starting point and the end of social explanantia. Milford alternatively calls the latter position *Methodological Essentialism*. This categorisation induces him to identify the search for holistic explanations as essentialist (and microreductions as non-essentialist, specifically Kantian). Milford’s conclusion is too hasty. To speak of historicists as methodological essentialist theorists is to claim that they looked for *kinds at the social level*. But, as I argue in the appendix, their methodological stance was above all a result of their scepticism, not of any strong realist ontologies, and a quest for kinds is hardly sceptical in orientation. Milford pretends to identify holism with essentialism, but he really confuses the two.

Much of the confusion over reductionism and holism lies, I believe, in a failure to specify one’s position in terms of strength. Is one defending a weak or a strong form? Weak forms of reductionism, or Methodological Individualism (MI), may well be compatible with weak forms of holism, or the belief that social wholes can be focal points in explanantia too and not only in explananda. Another source of confusion is over epistemological and ontological claims. Often, assumptions about the structure of the world are thought to directly imply epistemologies. Consider the list of eight possible positions in the holism (H) and reductionism (R) debate on the following page. Ontological Holism is referred to as HO, Methodological Holism as HM. There are strong (s) and weak (w) versions. The list enables me to make clear how best to characterise Böhm-Bawerk’s economics: I believe he adheres to the strong positions ROs and RMs. An example of a kind at the aggregation level of the individual is an intentional agent. I call it ‘social’ nonetheless because it figures in socio-economic explanations. A unified explanation of socio-economic phenomena by reference to individual choice making need not refer to essences or kinds if it is used as a tool in theory comparison. Even so, with his strong allusions to truth, Böhm-Bawerk’s quest for theoretical unification presupposes that the world is essentially unified. This is an ontological commitment.

It seems to me that the broader Austrian praxeological view, on the nature of the social and on social theory as it was put forward systematically by Menger for the first time, does not differ from Böhm-Bawerk’s view. The capital theorist firmly stood in his tradition.

There is, however, an indirect relation between ontology and methodology. A prior essentialist ontology – the belief that the world has been made up of kinds independently of efforts to conceptualize it – will be connected with the belief that research must find these kinds and inspect their necessity. Essentialism, weak or strong, commits the rational scientist to look for the clues where he guesses these can be found. In other words, prior metaphysics delivers a perspective and, hence, a heuristic. This perspective ‘indexes’ any view of the world.

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29 Appendix 3 discusses also this point and an interesting clarification by Harold Kincaid.
30 Chapter V treats the role of perspectives in essentialism, together with the term ‘index’.
So the essentialist economist is to identify the joints of the socio-economic world in order to explain its workings. This process of identification is abstractive; many of the phenomenal aspects are ignored or rated secondary so as to pick out the characteristics that must not be abstracted from.

I wrap up. Böhm-Bawerk’s essentialist view on socio-economic science was that there is an essential structure in economic reality, lying hidden beneath the appearances. Abstraction is needed to produce a description that mimics this hidden structure. This is in the tradition of Menger. As to market prices, the latter already had made a methodologically important distinction between real and economic prices. Real prices are those that actually come into being as the result of concrete market forces, with their multiplicity of interactions and feedback loops. They are an example of real types. Economic prices were those that come into being in the abstract. These are an example of exact types. The exact method is the one that tries to find ‘exact types’, not unlike those commonly known as Max Weber’s ‘ideal types’. Exact types are abstractions of phenomena, stripped of most of their rich empirical attributes.\(^31\) To make these hidden aspects of reality visible,

\(^{31}\) According to Bruce Caldwell, who follows Israel Kirzner in this view, the distinction explains why ‘Menger disregarded the problems of human error and ignorance that were so ubiquitous in the rest of [the Grundsätze der Volkswirtschaftsführung].

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<table>
<thead>
<tr>
<th>HOs</th>
<th>Some irreducible social entities are social kinds</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOw</td>
<td>There are some irreducible social entities at the level of institutions (without necessarily being kinds)</td>
</tr>
<tr>
<td>HMS</td>
<td>Only social and no other entities should occur in the explanans of social phenomena</td>
</tr>
<tr>
<td>HMw</td>
<td>At least some social entities should occur in the explanans of social phenomena</td>
</tr>
<tr>
<td>ROs</td>
<td>Some individual entities are social kinds</td>
</tr>
<tr>
<td>ROw</td>
<td>Some social entities are reducible to entities at the level of the individual</td>
</tr>
<tr>
<td>RMS</td>
<td>Only individual and no other entities should occur in the explanans of social phenomena</td>
</tr>
<tr>
<td>RMw</td>
<td>At least some individual entities should occur in the explanans of social phenomena</td>
</tr>
</tbody>
</table>
Böhm-Bawerk needs descriptions of a modelled reality, viz. of aspects of economic reality as they are expected to be under the force of isolating assumptions. As we have seen above, the OVT theorists also described a world that is under the protection of isolating assumptions. But in Austrian eyes, they did so mistakenly. An interesting example of an isolating assumption is that equilibrium in markets comes into being instantaneously. It obviously does not, but under this isolating condition, we can see interesting patterns and mechanisms. So contrary to the view often coined ‘instrumentalist’ – that isolating assumptions take away the realism of a model – the view expressed here is of a role of assumptions as highlighting aspects of (economic) reality that otherwise remain unseen. It is a perspective, which helps interpreting Böhm-Bawerk’s particular heuristic.

4 Discrete narratives versus continuous mathematics

The whole of PTK, but also Böhm-Bawerk’s (1886) Grundzüge, made use of numerical examples in which much was exogenously given and in which figures were altered just to inspect the consequences. It is easy to detect clumsy dynamics in it. But whatever one thinks of the inefficiency of this method, logically a numerical approach is in itself not invalid. At most, the use of these examples is risky in that readers may take them for proofs instead of illustrations. They are of course not; Böhm-Bawerk constructed the numbers in such a way as to fit his explanatory needs.

In economics generally, the mathematical treatment of theoretical links between the elements of an economic system under research is supplemented by a more concrete story about the referents of all the variables and their connections; and so was Böhm-Bawerk’s description of interest in the market system. In the combination of a unifying conceptualisation, theoretical links between the variables, and numerical examples, the latter played the role of what in Wicksell is preempted by the mathematical equations. Discrete cooked-up examples did the work that continuous mathematics did in Wicksell. These examples were adorned by lots of story-telling.

In this section, I first present Wicksell’s mathematical re-interpretation of Böhm-Bawerk’s system. In the second subsection, I shall show that the numerical approach is necessarily associated with a partial analysis. The last subsection is devoted to a discussion of an advantage of giving a partial analysis. I shall draw the conclusion one is led to once it is accepted that Böhm-Bawerk’s analysis is partial. I shall claim that, implicitly, Böhm-Bawerk has been inventing a demand curve for capital and that Wicksell failed to see this.

32 For instance, Bleicher (1890) accused Böhm-Bawerk of this fallacy.
33 In economics, ‘partial analysis’ is the term used for any model that disregards the feedback effects of changes in the market under investigation as discharged by other markets.
4.1 Böhm-Bawerk’s interest theory in Wicksell’s *Wert, Kapital und Rente*

For the ease of presentation I redisplay table I.11 from the previous chapter. It shows the case of the optimum roundaboutness of production with a market wage level of 500 Austrian guilders.

<table>
<thead>
<tr>
<th>prod. period (1)</th>
<th>pecunary yield (2)</th>
<th>marginal yield (3)</th>
<th>interest payable per worker (4)</th>
<th>surplus value per worker (5)</th>
<th>labour demand (6)</th>
<th>surplus value ‘z’ (7)</th>
<th>interest ‘z’ (8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>150</td>
<td>**</td>
<td>**</td>
<td>-350</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>350</td>
<td>200</td>
<td>0.800</td>
<td>-150</td>
<td>60.0 m.</td>
<td>-9.0 b.</td>
<td>loss</td>
</tr>
<tr>
<td>2</td>
<td>450</td>
<td>100</td>
<td>0.400</td>
<td>-50</td>
<td>30.0 m.</td>
<td>-1.5 b.</td>
<td>loss</td>
</tr>
<tr>
<td>3</td>
<td>530</td>
<td>80</td>
<td>0.320</td>
<td>30</td>
<td>20.0 m.</td>
<td>0.6 b.</td>
<td>0.0400</td>
</tr>
<tr>
<td>4</td>
<td>580</td>
<td>50</td>
<td>0.200</td>
<td>80</td>
<td>15.0 m.</td>
<td>1.2 b.</td>
<td>0.0800</td>
</tr>
<tr>
<td>5</td>
<td>620</td>
<td>40</td>
<td>0.160</td>
<td>120</td>
<td>12.0 m.</td>
<td>1.44 b.</td>
<td>0.0960</td>
</tr>
<tr>
<td>6</td>
<td>650</td>
<td>30</td>
<td>0.120</td>
<td>150</td>
<td>10.0 m.</td>
<td>1.5 b.</td>
<td>0.1000</td>
</tr>
<tr>
<td>7</td>
<td>670</td>
<td>20</td>
<td>0.080</td>
<td>170</td>
<td>8.6 m.</td>
<td>1.46 b.</td>
<td>0.0971</td>
</tr>
<tr>
<td>8</td>
<td>685</td>
<td>15</td>
<td>0.060</td>
<td>185</td>
<td>7.5 m.</td>
<td>1.39 b.</td>
<td>0.0925</td>
</tr>
<tr>
<td>9</td>
<td>695</td>
<td>10</td>
<td>0.040</td>
<td>195</td>
<td>6.7 m.</td>
<td>1.3 b.</td>
<td>0.0867</td>
</tr>
<tr>
<td>10</td>
<td>700</td>
<td>5</td>
<td>0.020</td>
<td>200</td>
<td>6.0 m.</td>
<td>1.2 b.</td>
<td>0.0800</td>
</tr>
</tbody>
</table>

**table II.2** Market clearance at roundaboutness of t=6

Entrepreneurs demand subsistence means, or social capital, for the employment of workers. We assume now no other factors of production. Rising levels of roundaboutness of production raises returns, but it also requires more labour-years to be employed. Labour must be paid out of a wages fund, the social capital from which entrepreneurs can take at market interest rates. This wages fund is exogenous in the partial analysis and given by a perfectly inelastic capital supply function as ‘the stock of capital’. The same is true for ‘the stock of labour’. As returns are assumed to grow out of production and sales gradually, without any cyclical investments in private stock, and as inputs of labour are also assumed to be distributed evenly over time, the per new worker investment in increasing roundaboutness is half the price of labour, or $\frac{1}{2}f$. If the individual entrepreneur chooses t=0, labour intensity of his production process (labour relative to total input) is 100%. Roundaboutness (in years, t) is the equivalent of what in modern terms is called capital intensity. At t=1 and t=2, and given the production function, he uses capital but the yield of this longer production route does not match the cost of employing more workers. We can see this in the column (2), which gives pecuniary outputs, p, per worker. The surplus value per worker is given in column (5).

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\[34\] So capital for this entrepreneur is nil. Social capital, K, is still 15 billion.
In the third column marginal returns (or yield) is discretely given, whereby each next row is supposed to represent the difference in values between two successive rows in column (2). The same is true for column (4). Hence, the ‘interest payable’ (to be referred to as $z_{pay}$ from now on) is what the entrepreneur can afford to pay as interest if he increases capital intensity. If for instance he increased roundaboutness from $t=5$ to $t=6$, $z_{pay}$ would be 12%. This is equal to the extra income made possible by the raised – and, according to the third cause, more productive – roundaboutness.

Given vertical factor supply functions, equilibrium exists in the labour and capital markets at $t=6$. Columns (6) and (7) speak for themselves. Note that column (6) shows that one effect of the numerical treatment by Böhm-Bawerk is that the capital constraint is exercised over the labour market. Social stock of capital – or the wages fund – determines the wage if labour stock is given. Column (8), finally, represents surplus value in relation to the total capital market costs of the respective investments in roundaboutness. In what follows, I shall focus on columns (4) and (8).

To illustrate how the economic process leads to individual optima in this discrete production function, let us take a starting point in a situation when interest is 10% and $t=6$. In the chapter of PTK about the level of interest in the isolated case of a market situation, Böhm-Bawerk reasons:

Diejenigen Produktionslustigen […], welche Subsistenzmittel aus dem Markte zu nehmen suchen, um die Produktionsperiode noch auf ein siebentes Jahr zu verlängern, könnten aus dieser Verlängerung nur ein Mehrerträgnis von 20 fl. (670-650) gewinnen.\(^{35}\)

Apparently, there are those who might want to extend the production period to $t=7$, for which they can afford to pay an interest of no more than 8%. That is, an increase of $t$ by one year would render an extra yield of 20 (indicated in column 4), earned over the extra investment of $\frac{1}{2}l$ or 250. This outcome turns out to be impossible in equilibrium, as interest to be paid in the market will be 10%. The capital constraint comes to be realized by labour market forces. The wage level is constant even if entrepreneurs change the roundaboutness of their production process.

Wicksell’s *Wert, Kapital und Rente* (WKR) gave the mathematical interpretation of this theory of interest. The first possibility is that the worker is also entrepreneur. So he has to borrow capital for paying his own wage $l$, and the interest $z$ on the loan during the average production period.

The following legend of variables will be used for a representation of Wick- sell’s reformulation of the Austrian interest theory and distribution theory. Note that the choice of symbols is partly in accordance with the German of WKR.\(^{36}\)

\(^{35}\) PTK, p.455.
\(^{36}\) Thus, interest is *Zins*, wage is *Lohn*, and land is *Boden*, and so on.
Chapter II

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Interest: $z$
Production period: $t$
Optimal production period: $t^*$
Increase of period $t$ by one year: $\Delta t$
(Yearly) wage and land rent: $\ell$ and $r$
Total revenue per worker: $s$
Yearly revenue per worker: $p$
Optimal revenue: $p^*$
Commodities: $x$ and $y$

Relative price of one commodity: $\pi$
Real price of the product (numerary): $n$
Individual yearly income: $e$
Countries: subscripts $i$ and $j$
Total amount of capital: $K$
Total amount of labour: $A$
Total amount of land: $B$
Units of land per worker, $B/A$: $g$
Marginal utilities $x$ and $y$: $U'_x$, $U'_y$

Briefly, Wicksell’s reformulation looks like this.

\[ s = (1+z^{1/2})\ell t \]  \hspace{1cm} (1)

Production per year – per unit of time $t$ – is:

\[ p = \frac{s}{t} = \ell + \frac{1}{2} \ell z t \]  \hspace{1cm} (2)

which gives the production function. With $t$ as instrument variable, the task is to maximise $\ell$ by choosing the period of production well:

\[ \frac{dp}{dt} = \frac{1}{2} \ell z \]  \hspace{1cm} (3)

Wicksell turned Böhm-Bawerk’s discrete production function into a continuous function. The figure Graph 1 below displays yearly production per worker, decreasingly rising as marginal returns diminish. This is the production function $f$: $p=f(1+\frac{zt}{2})$ in the way Wicksell depicted it.\(^37\)

Note that the tangent line $dp/dt$ (tangent $\frac{1}{2}\ell z$) intersects with the horizontal axis at $-2/z$. This can be seen if it is noticed that $\ell$ is the vertical part of the tangent running from this intersection to the vertical axis. Given $f$, the relation between $\ell$ and $2/z+\ell t$ is given. In the partial analysis, the interest $z$ is given. Both a shorter and a longer roundabout period than $t^*$ causes $\ell$ to fall. *Equilibrium is settled on the credit market.*

The other possible case is the entrepreneur-capitalist, the one Böhm-Bawerk had described. In this case, wage $\ell$ is given (from the point of view of the indi-

\[^{37}\text{Wicksell uses the letter ‘h’: hectares. I want to avoid the suggestion that per worker, the number of hectares exceeds 1, and use ‘g’ instead: Größe.}

\[^{38}\text{See WKR, p.97. My graph has been based upon his.} \]
ual entrepreneur – as the partial analysis suggests) and $z$ is the variable to maximise, while $t$ is still the instrument variable. (The tangent line $dp/dt$ is then drawn from $\ell$ on the vertical axis, instead of $-2/z$.) Now equilibrium is accomplished in the labour market.

4.2 The limits of a discrete analysis

Böhm-Bawerk, working with a discrete production function, did not calculate marginal production in optimum $t^*$, like Wicksell, as $f'(t) dt$ but as $f(t) - f(t-\Delta t)$. This is much higher, especially with discrete steps as large as one year. Below, figure 1 shows the difference between the continuous and the discrete cases.

![Figure 1. Total and marginal production per worker per year](image)

In a continuous analysis, the increase in pecuniary output is $(dp/dt) \Delta t$, while a discrete analysis leaves open two options: either $f(t) - f(t-\Delta t)$ (as Böhm-Bawerk did) or $f(t+\Delta t) - f(t)$.

The first option gives a higher output differential than the continuous approach, the second option gives a lower output differential:

$$f(t) - f(t-\Delta t) > f'(t) \Delta t > f(t+\Delta t) - f(t)$$

where $f(t)$ is the production function denoted as $p$ above, and $f'(t)$ is $dp/dt$. Filling in $\frac{1}{2}lz$ for $f'(t)$, Wicksell shows that wages cannot be assumed constant, because they will rise as a consequence of rising capital intensity.
Man könnte aber nach dem Wortlaute des Satzes verleitet werden zu glauben, daß, wenn eine Vermehrung des Volkskapitals bei gleichbleibender Arbeiterzahl zu einer Verlängerung der Produktionsperiode führt, das Mehrerträgnis dieser Verlängerung, durch die bezügliche Kapitalvermehrung dividiert, etwa die Zinshöhe ließere. Das wäre entschieden unrichtig. Letzteres Verhältnis ist, wie wir sehen werden, immer kleiner als der Zins, und zwar um eine endliche Größe kleiner, auch wenn von einer minimalen Veränderung die Rede ist, was damit zusammen hängt, daß jene Vermehrung des Volkskapitales von einer Lohnerhöhung begleitet wird, die sie teilweise verschlingt, so daß die wirklich erreichte Produktionsverlängerung immer hinter der bei unverändertem Lohnsätze möglichen zurückbleibt.

His mathematical analysis allowed Wicksell to deal with more variables simultaneously and account for the causal feedback from the distribution theory (to be dealt with below). Specifically, he could put into one system of equations both the production period of the firm’s level of investments and the macro equilibrium in income distribution. Any increase of the production period would thus raise demand on the labour market, and increase the wage level. Consequently, due to a higher wage to be paid by the entrepreneurs, any lengthening of the production period would be inhibited. Indeed, under a regime of a flexible labour market the production period will not rise as much as under the condition of fixed wages.

The tangent of the production function is lower at t* than at t*–∆t. But the fact that Böhm-Bawerk’s \( f(t) - f(t-\Delta t) \) renders higher interest, as noted above, than Wicksell’s \( f'(t)\Delta t \) is a consequence first of all of the fact that the former used discrete numerical examples, not continuous mathematics. In itself it is not in consequence of Böhm-Bawerk’s ignoring the causal feedback from adjustments in the labour market.

However, interest as he calculates it is overvalued. But it looks as if Wicksell conflated the issues of the Austrian discrete analysis, on the one hand, and the Austrian partiality of the approach on the other, as causes of the overvaluation. Considering that Böhm-Bawerk gives a partial analysis, there is nothing flawed about his method in principle, even though the continuous method renders more precise outcomes than the discrete method. Böhm-Bawerk had hoped to reach such precision by dropping the assumptions associated with the partiality of the approach in the closing part of PTK (viz. section III of chapter III, book IV: der Kapitalsmarkt in Entfaltung). Wicksell’s conflation of these two issues is remarkable because he praised section II of this ‘Abschnitt über „die Zinshöhe im Marktverkehr“, an dessen genialer Gestaltung und überzeugender Kraft nur wenige Kritiker etwas auszusetzen gehabt haben’, while section III contains the key to understanding what Böhm-Bawerk had been out to do.

Why did Böhm-Bawerk, in PTK, not stress the consistency of his numerical approach and try to justify it? He never responded to the criticism expressed by Wicksell already in 1893, of the alleged imprecision that comes with the discrete

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39 WKR, p.111-112, emphasis by Wicksell.
40 Wicksell (1928), p.199.
f(t)–f(t−Δt). But he could have easily done so. He assumed investment periods to increase discretely in the partial analysis – the analysis of decisions taken by an individual entrepreneur. So he could have easily defended his method. The intervals between two successive roundaboutness periods – intervals of entire years – were to narrow down in the macroanalysis he had proposed (though not developed formally) in the last chapter. Furthermore, Böhm-Bawerk could have made remarks about Wicksell’s misunderstandings.

As he did respond to many other criticisms by Wicksell in his third edition of PTK (1914), I think that Böhm-Bawerk simply never understood the point of this one. Hennings says that ‘Böhm certainly learnt from him, but whether he understood the full import of Wicksell’s reformulation of his theory may well be questioned’. In a letter to the Swede, Böhm-Bawerk wrote:

You are such a keen expert of the works of Pareto, which are less accessible to me because of their mathematical form, that I would like to ask you to inform me occasionally in a few lines to which group of theories in your opinion Pareto’s doctrine regarding the cause of capital interest belongs. In recent months the problem was in particular a criticism that was put forward simultaneously by Bortkiewicz and Irving Fisher [about the third cause of the relative higher value of present goods as being dependent on the other causes]. Both also use mathematics against me, and I have the suspicion that the latter is somewhat abused by them.

Gehrke also quotes a rather painful letter to Wicksell by Alfred Marshall:

A boy in a village school who made such a blunder in his arithmetic would be punished: and [Böhm-Bawerk] knows I am a trained mathematician. If he were really earnest in his desire to know what I mean, he would turn to my mathematical notes.

The absence of mathematical treatment in Böhm-Bawerk’s models – due to his lack of active mathematical skills – had caused his putting a large share of his intellectual resources into explaining the mechanism behind economic processes. (See section 5 below.) Meanwhile, his lack of mathematical understanding was not limited to active skills, but stretched to passive insight too.

4.3 The demand curve for capital

The strategy of Böhm-Bawerk to take the viewpoint of an individual entrepreneur – taking wages exogenous and constant even if production processes with varying roundaboutness were considered – was not just a second best option in the absence of mathematical skills to deal with the problem of interest in a general distribution theory. It did have an advantage. By his rhetorical strategy, Böhm-Bawerk had

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44 Ibidem, Marshall about Böhm-Bawerk’s attack on the former’s abstinence theory of interest, p.231.
highlighted the underlying mechanism, which could explain how economic processes turned positions of disequilibrium into positions of equilibrium. Böhm-Bawerk brought his own version of short run dynamics into the picture by telling a story about maximizing entrepreneurs. And it was not just some story.

If we assume again that the data from table 2 above are given; what if an individual entrepreneur were in the position to marginally lengthen the period of production beyond t=6? Then the maximum interest he could pay for a share of the wages fund is 8%. Likewise, the entrepreneur who goes from a period of t=5 to a production period of t=6 will even be able to pay a maximum interest for borrowing capital of 12% (30/250) to his creditors, all under the assumption that wages are constant and exogenous. The marginal demander, investing in a roundabout production of t=6, is positioned exactly in between the former two and can afford to pay a maximum of 10% (25 over 250), which, given the variables as Böhm-Bawerk had drafted them, happens to be equal to equilibrium. (This may not be obvious from table 2, as columns (3) and (4) refer to differentials. The interest level of 10% lies in between 0.08 and 0.12 at t=7 and t=6 respectively.)

It seems that column (4) represents a demand curve for capital. Then again, it is a demand curve established not by entrepreneurs’ marginal utilities, but by determinants that lie in mere technical data. It is a function of roundaboutness of production. Thus, it can be seen as a list of demanders’ (future) preferences, but determined solely by the objective ‘third cause’. In the terminology of Marshall, column (4) represents the ‘demand price of capital’. Below, figure 2 presents a curve, progressively decreasing with rising capital intensity t: ‘interest payable’. This curve is a reproduction in terms of a continuous function of what were discrete figures in column (4) of Böhm-Bawerk’s table: $z_{pay} = (p_t - p_{t-1})/\ell / (\ell t)$.

The ‘interest payable’ is the amount of output an entrepreneur can maximally afford to pay for borrowing subsistence means to maintain extra workers needed to lengthen roundaboutness of production. It is a function that Wicksell – and, as far as I can see, every other commentator – ignored. The parabolic line, in its turn, represents column (8) of the table: the interest line $z = (p-\ell)/\ell t$. It reflects the market price of capital at a given wage. ‘Interest payable’ intersects at the top of the interest curve $z$. This must be the case by implication, because every time an optimum production period $t^*$ is achieved, the marginal demanders for capital are able and willing to precisely pay the resulting interest. After all, this is what makes them marginal demanders. Left of $t^*$ extra investments turn out profitable, beyond $t^*$ production is too capital intensive. Roundaboutness $t^*$ is the entrepreneurial equilibrium.

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45 This interpretation could have served as part of the defence, in PTK Vol. 2, Exkurs XII, of Böhm-Bawerk’s much disputed claim that the third cause is independent from the first and the second. See Bortkiewicz, L. (1906), Fisher, I. (1907), and Wicksell, K. (1928).

46 The intersection is $z^*=(p_t-p_{t-1})/\ell t^*=(p-\ell)/\ell t^*$. The optimum production period $t^*=p-\ell/p_{t-1}$.
There is an important similarity between the capital market and the horse market, the latter of which had made its appearance in the chapters of PTK on the value theory. In discussing the mechanism that translates individual decision making into goods market outcomes Böhm-Bawerk had already given a step-by-step alternative to the infinitesimal approach. We have seen that equilibrium pricing takes place within upper and lower limits. The price (of horses) remains indeterminate if few market parties meet, but the boundaries converge as the number of suppliers and demanders grows. In the limit, so to say, the degrees of freedom for the price to come into being is zero. In similar fashion, as concerns the capital market, Böhm-Bawerk proposed the reader to imagine ever more demanders-entrepreneurs in the aggregated model. These demanders for capital are willing to engage into ever more production processes, some with a roundabout period of t=5, some of t=6, and some of t=7. We may assume the price of capital to grow toward a determinate equilibrium. Below I propose to represent Böhm-Bawerk’s method as revealing that a narrative approach – his use of narratio’s – about market forces adds intelligibility to the process that leads to market outcomes.
5 The principle of sufficient complexity

Wicksell complained about the irrelevance of column (4):

Wirkwürdigerweise glaubt aber Böhm-Bawerk in den aufgestellten Zahlnreihen „noch andere Beziehungen“ gefunden zu haben, die in positiver (?)
Weise auf den resultierenden Zinsfuß von 10 Proz. hindeuten. […]

Wie könnte […] von der Verfügung über 250 fl. ein Mehrerträgnis von 30 fl.,
d. h. ein Reingewinn von 12 Proz. abhängen, da ja […] sich das Kapital
höchstens mit 10 Proz. verzinsen kann? […] Es ist somit allerdings wahr, daß
der Zins, auf die halbe Lohnhöhe berechnet, „zwischen dem Mehrerträgnis
der letzten gestatteten und dem der nicht mehr gestatteten Produktions-
verlängerung“ zu liegen kommt; zwischen diesen Grenzen aber wird seine
definitive Höhe nicht etwa durch Angebot und Nachfrage, sondern einfach
durch die Ergiebigkeit der lohnendsten Produktionsperiode festgestellt.

Indeed, the demand curve for capital – as I now coin the fourth column – is not
needed to determine the interest rate. It can only intersect with the top of the hyperbolic curve that represents column 8; that is, logically so. What is the point of a
story on the decision process that is supposed to be going on in the entrepreneur’s
mind if the optimum production period can be calculated with a given wage and
production function?

I am not aware of any literature that explores this specific question, only of
writings that discuss the Austrian project of highlighting processes rather than end
states of these processes. Therefore I now discuss how economic narratio’s con-
vey intelligibility to process theory. An Austrian claim has since long been that a
study of processes by which equilibria come to be, rather than of equilibria per se,
is legitimate and even a pressing matter for an understanding of social reality. My
claim is that Böhm-Bawerk stood out in this tradition, because he so intensely ex-
plotted his narrative talents to this end.

The first subsection introduces As-If narrative reasoning (a notion that will get
extra momentum with a discussion of counterfactuals in chapter III). The second
subsection links this notion to an epistemological view on the constructs
historians make in their tales about the past. I shall pay special attention to the dif-
fERENCE between the narratives of the German historicist economists and those of
Böhm-Bawerk. The last subsection draws the conclusion that Böhm-Bawerk ex-
plotted his narrative approach so as to suit research interests that required a certain
minimum of complexity, that is, an upper limit to the amount of disregard for the
very mechanics that shapes the market process.

See for instance Ullman-Margalit (1978), who discusses Hayek’s stance on unintentional consequences
of intentional action, Mäki (1990, 1991, 1992a), and Lachmann (1976). The latter has consistently
stressed the time dimension of subjectivism, viz. that individual knowledge (and, hence, individual
decision making) is subject to change. Although Lachmann critically stresses Böhm-Bawerk’s ‘Victo-
rian’ view of a world with no error, ‘a world of steady progress through capital accumulation’
(p.61), he does admit that its Walrasian expression was not to Böhm-Bawerk’s taste at all.
5.1 Hypothetical worlds in the theory of the market

A story about what an entrepreneur would do if he were in the position to lengthen roundaboutness of production fits into the subjectivist treatment of political economy. It pictures the choices individuals make in a changing environment. This environment later turned much more dynamic and uncertain in von Mises’ praxeology, but already Menger and Böhm-Bawerk gave a subjectivist picture of the economic process, i.e. a process as generated by individual choice making. The idea of choice splits up reality in actual and hypothetical situations, because rational decisions are taken on the basis of hypotheses about what will (would) be the case if a particular decision is (were) taken. Though not (yet) actual, these subjunctive or hypothetical worlds are real enough, at least in the sense that the choices the entrepreneurs are facing are real. The story telling approach makes for our imagination of a protagonist who really chooses. The narrative method helps shape the subjectivist approach.

There is nothing mystical about this presentation in terms of possible worlds. Column (4) of table 2 serves to explicitly report on possible configurations of the capital market from the point of view of individual capital demanders. A report on the consequences of other than the optimal choice depicts other worlds than just the one that becomes actual under the force of the familiar conditions of rationality and perfect markets. Such a report does not serve to contemplate the possibility of error – as it would do later in the development of praxeology – but it shows a world As-If demand and supply determine equilibrium demand for capital and As-If another than the optimal choice could be made. The model Böhm-Bawerk built allows only for optima – there is no error – but the individual agents deliberate, weighing alternatives against the optimum. They act As-If they were given the option to make an error, even though there is no such thing under the force of the assumptions.

There should be no confusion between the label ‘As-If’ in my understanding of Böhm-Bawerk’s use of narratives and the same label in the familiar debates over Milton Friedman’s (1953) essay ‘The Methodology of Positive Economics’. Friedman attached an As-If status to theoretical assumptions, which did not reflect true descriptions of the world but nevertheless produced good predictions in economic research; or at least so he conceived of these. In the present context As-If reasoning is supposed to give true descriptions of real choice options.

Note that, in fact, any economics textbook treats markets – all markets – this way. Consider figure 3 below, representing a familiar textbook demand-and-supply scheme (of the now familiar horse market, if you like). P and Q represent
price and quantity. The figure represents the idea of economic rent in markets. All the points on the demand line north-west of the intersection of the demand and supply lines represent, one could say, the readiness of demanders to buy at prices higher than equilibrium. As the resulting market circumstances allow them to purchase at a price lower than the marginal utility they perceive for at least some of their wants, they enjoy a demander’s surplus or rent. In a world where the equilibrium is in fact generated the one point of intersection is actual. The points that fence off demanders surplus (and, mutatis mutandis, those that fence off suppliers surplus, southwest of the intersection) are then non-actual insofar as the commodity in question is traded only at one price at one point in time: against the equilibrium price. But the other points on the lines refer to some state of affairs nonetheless.

On the one hand these points on the demand and supply lines that fence off the surpluses are hypothetical, for they refer to choices that would be made if it were the case that the price turned out higher. This means that there is a hidden semantics of counterfactuals at work in a simple demand-and-supply scheme. Demanders would satisfy some of their needs at a higher price (and suppliers would sell at a lower price). This way of putting it is like sketching a possible but non-actual world.

On the other hand these intra-marginal market parties are, by implication, demanders and suppliers who exist in the actual world. The same is true for the demander’s surplus and for the supplier’s surplus. (The points, in turn, that refer
to the preferences by demanders and suppliers with regard to the excluded objects of satisfaction (east of the intersection) do not fence off any actual surplus. As a consequence, these seem to be merely hypothetical: they tell us how much suppliers would offer if the market price were higher and how much would be demanded at lower possible market prices.)

Textbooks treat intra-marginal demanders and suppliers as if they exist in the actual world and place them, as one could say, in the nearest possible world where equilibrium has not yet been attained. My interpretation of Wicksell’s complaint quoted at the beginning of this section can now be expounded as missing a point. Böhm-Bawerk’s narrative strategy must be read as the pretense to have epistemic access to the hypothetical possible worlds where actors on the demand side and on the supply side act upon other (possible) prices than the equilibrium price settled in the actual world. I believe that it is the semantics of this As-If strategy – interpreted here as a possible worlds semantics – that Wicksell failed to capture.

Böhm-Bawerk had read Wicksell’s WKR before the later editions of his PTK and added eight full pages to further explain das Grundgesetz der Preisbildung, and an extensive note in which he dismissed that there was a problem of matching a narrative both with continuity on the factor market and with discontinuity on the market for horses:

Bei meinen späteren Darlegungen über die Preisbildung auf dem Kapital- und Arbeitsmarkt hatte ich mit Märkten und Waren zu tun, die über jenen einfachsten Typus hinauswuchsen, und deren Preisbildung daher alle Eigentümlichkeiten der “reichsten Ausgestaltung des Sachverhaltes” aufwies.\(^52\)

He had made a point of this matching in the first and second edition, but now took back the provisions in the third edition because he considered them unnecessary. Indeed, in the last chapter, about the Hohe des Kapitalzinses, he explicitly referred to Wicksell’s complaint, saying “Ein gegen [...] Wicksell (Wert, Kapital und Rente S. 111) erhobenes Bedenken behebt sich wohl durch die inzwischen von mir oben S. 288ff. gegebene Erläuterung”.\(^53\)

Böhm-Bawerk had thus put aside Wicksell’s interpretative mistake, without much ado, as missing the point. The Austrian seems to have had a weakly developed sense of how much care a formal approach requires. But this seems to be constitutive of his rhetoric: inserting and dropping assumptions at will, loosely and conveniently.

5.2 Narrativism: a concept from historiography

Böhm-Bawerk had told narratives about decision making in an economic environment with the effect that it became clear to the reader what was the steering

\(^{52}\) PTK, pp.289-290.
\(^{53}\) PTK, p.454, note.
mechanism behind market outcomes. In the imagination of who reads these stories, the entrepreneur, however hypothetical his actions may be, turns into a living person. But we have now reached a point in our interpretation of Böhm-Bawerk’s rhetoric where it becomes delicate to talk of narratio’s, because the art of tale-telling is, naturally, the prerogative of the historian while the Austrian method of social study is opposed to, not in line with, the historical method advocated at the time in Germany.

It is very important to observe the As-If character of the narrative, not the truth of the stories told in terms of what did or did not happen in the actual past. Böhm-Bawerk did not carry out the sort of historical work the German historicists did. His narrativist engagement differs completely from the motives behind historical tales. Indeed, it is ironical that he is known to have once criticised the German historical school for sticking to mere anecdotic work, as opposed to the, in his eyes, much needed theory development. Every time I have spoken, above, of Böhm-Bawerk’s ‘narrative approach’, then, I have been referring to what is the opposite of the anecdotic and the superficial in nineteenth century German-style socio-historical research. Böhm-Bawerk pretended to use the narrative method in order, not to evade theory development, but to dig into a slice of reality that did not come to the phenomenal fore so easily. For instance, with regard to the solution of the scientific problem of the ultimate principle and measuring rod of our utility valuations of economic goods, he wrote:

> alle Elemente, aus denen die Lösung [to this problem] zu gewinnen ist, sind in der ersten Million, vielleicht selbst im ersten Tausend der beobachteten Fälle schon ganz ebenso enthalten wie in allen späteren. Die Kunst ist nur, sie herauszulösen, und dazu kann nicht Verbreiterung, sondern nur Vertiefung helfen [...] eine tiefere geistige Durchdringung

This means that historical research may record actual preferences, but after having accumulated many data on this issue the use of yet new data is very small. But deductive research engages in setting free (herauszulösen) the underlying principles according to which such data emerge: they are integrative for the data. These principles lie hidden till the moment of discovery by the shrewd economist. It is easy to see that in both areas of research – historical and deductive – the problem of the truth of the story arises in some form. In both areas the question arises of how the narrative integration of the facts is done. In other words, in both German and Austrian story telling we are in need of an understanding of the truth conditions of these different tales. Do these conditions differ?

In order to acquire some conceptual clarity on this question, I rely on Frank Ankersmit (1983) concerning matters of the truth and cohesion of historical tales.

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54 The concept of ‘actual past’ may sound paradoxical, but the use of the term ‘actual’ is not committed to any reference to a moment in time. The concept entails that the actual world differs from hypothetical worlds in that the latter are constituted by the course of things as these could have logically been in the past, the present and the future, different form and in comparison to how they actually have been, are, and will be. Throughout this dissertation, I shall use the term ‘actual’ in this way.

55 Böhm-Bawerk (1890b), p.85. Italics are mine.
He has given some definitional ground for two possible epistemological positions on the question of what it is that makes a story true or false, how the elements of a story are put together, and where to find the rules for this narrative integration. The positions are narrative idealism and narrative realism. We first have to well understand the use that is made of these two epistemological views by philosophers of history. Let me go into this before investigating what these positions entail and how they can serve us in explaining the nature of Böhm-Bawerk’s efforts to give an insight into the choice making process of hypothetical entrepreneurs.

In tales told by historians, the past cannot simply be represented ‘as it really was’. A complete description of (a particular aspect of) the past is never possible and Ankersmit is out to find ‘the mechanism enabling the historian to give a narrative representation of the past’.\(^{56}\) His conviction is that ‘a narrative structure cannot be attributed to the past as such’. The past is not a tale but it is made into a tale. Also, to produce our narratives, ‘we do not possess a set of translation rules either’. Yet ‘there are certain rules governing the narratio which we cannot risk ignoring’\(^{57}\).

Now, essentialists would have it that ‘historians should indicate what is important or essential for a correct understanding of the past’.\(^{58}\) This sounds plausible enough, but turns out to be highly problematic in its application. So Ankersmit defends an anti-essentialist position about history writing:

Where is this “essence” [of the past] if there is such a thing? Surely not in the past itself. The past itself has no “essence”: there are no episodes or aspects of the past which for the historian’s convenience bear the label “this is the essence”. [Otherwise] the writing of history would be a very simple affair. […] Whoever says “this is the essence of (part of) the past” points to an interpretation of the past and not to part of the actual past […]. When we speak of ‘essences’ of the past it is always narratio that we speak of and nothing else.\(^{59}\)

Ankersmit concludes that the narratio has epistemic autonomy. The rules of the logical structure of our narrative knowledge of the past can be found only in the very narrative accounts of the past. The story told about the past obviously is an interpretation by the historian. The facts about the past, drawn from historical resources such as manuscripts, artefacts, oral history, and the like, have to be integrated into one single story. The (supposed) facts are glued together by the historical narratio. So we can see that the question does indeed arise as to which are the rules according to which this ‘gluing’ takes place.

Ankersmit calls himself a narrative idealist. He warns that we should not believe narrative idealism to mean that ‘we should be able to discover the nature of historical reality by means of an a priori inquiry into narrative philosophy’\(^{60}\). But a narrative idealist looks for the rules of how to integrate the historical facts in the story about the past, instead of in history itself. (Ankersmit compares this view

\(^{57}\) Ibidem.
\(^{58}\) Ibidem, p.53.
\(^{59}\) Ibidem, p.54. All italics are Ankersmit’s.
\(^{60}\) Ibidem, p.93.
with the Popper’s position, who compared the empirical basis of science with a swamp above which we erect our bold structures of our theories. There is also ‘no past that could serve as bedrock for our narratives’61.) In contrast, narrative realism in history writing is the view that the rules, which determine how the narrative should be told, lie in historical reality itself and not in any epistemic order. According to this view, not only should the historian try to find particular facts in historical sources, also the way in which these facts are to be arranged must be sought in history itself.

The current insight into the nature of historical narratio’s seems to follow Ankersmit in his narrative idealist orientation. With this weaponry of historiographical epistemology brought to bear, I return to the original question: how do German historicist and Austrian theoretical story-telling differ in terms of the truth conditions of these stories? The German historicists appear to be committed to narrative realism. (But, as shown in appendix 3, I reject Milford’s association of holism with essentialism.) I endorse the interpretation of the Austrian outlook to social research as being essentialist. Austrian narratio’s cohere and have structure. There must be logical rules for these stories. It seems that, for Böhm-Bawerk, this logical structure lies in economic reality itself.

The assumptions of the story and the three Böhm-Bawerkian causes of the productivity advantage of present as compared to future goods determine a decision space from the entrepreneur’s perspective, i.e. in a partial model. The deliberations of the hypothetical entrepreneur are bounded by this decision space, so the story about these deliberations has a structure given by the way in which Böhm-Bawerk models economic reality. But above I have claimed that he believed a true theory to mimic the unified characteristics of the world. With the conceptual explications of this subsection, we can now conclude that the narrative logic of Böhm-Bawerk’s tale-telling is a realist one. This leads to the curious conclusion that modern historians, though reporting about historical facts, see themselves mostly as employing a narrative idealist logic, while an Austrian economist reporting about individual agents that never have really existed in any straightforward sense can be conceived of as applying a narrative realist logic.

However, the anecdotic character of a story, about an hypothetical entrepreneur who considers to augment capital intensity from t=5 to t=6 and then finds out that the interest he could pay for this has an upper limit of 12%, is of course not meant to suggest the actual existence, at any point in time, of an entrepreneur who can be picked out as an historical individual. Nor has there been any real situation that conformed to the assumptions listed, like perfect capital and labour markets, perfect foresight, etcetera, and the initial condition of a wage level of 500. Let it be clear that Böhm-Bawerk’s tales are no historical tales.

The narrative aspect of Böhm-Bawerk’s theory has often been taken to cover up lacking active mathematical skills in developing an integrative model. Quite

61 Ibidem, p.92.
apart from the question whether this complaint is justified, the narrative practise has the positive effect of making the decision space of an individual economic agent perspicuous. This is a rhetorical and didactic advantage. Is there is a further advantage of this strategy, for the justification of theory development? I have hinted at an answer already. Let me consider this question more fully now.

5.3 Highlighting the mechanics from micro to macro: sufficient complexity

The reason why Böhm-Bawerk had inserted column 4 – the ‘interest payable’ declared out of court by Wicksell – was not to explain the resulting interest level itself, as his admirer-critic must have thought he was trying to do. The reason was that he could use it as an exemplification of the subjective perspective. He searched for the mechanisms that turned individual decision making into the social (equilibrium) outcomes found at the phenomenal level; outcomes that were, in his eyes, essentially driven by subjective decision processes. The deliberations and accounting processes that steer decisions had to be (or to become) objects of study for whom was interested in the essential character of social reality. Decision making results are in turn inputs in the grand transition process of which we only can see the superficial market phenomena. Although Böhm-Bawerk had a rather harmonious and relatively predictable reality in view – a ‘Victorian view’ as it was called by Ludwig Lachmann – I believe he was strongly aware of the uncertainty an individual agent had to cope with.  

The essentially subjective orientation Böhm-Bawerk had inherited from Menger implies the view that a study of equilibria as outcomes of the mere solution of equations would be prone to miss the essential structure of complex social reality. It would fail to spot explanatory categories like meaningfulness, individual decision taking and partial perspectives.

It was therefore imperative that economic theory would refer to the underlying subjective micro-processes that come, both causally and analytically, before macro outcomes. A theory that failed to do so was too simple. Economic theories are too simple if they fail to identify precisely those aspects of social reality that we should research in order to capture the essentials of its workings. True science cannot disregard the underlying mechanics of the transition process that turns individual decisions – themselves a product of deliberation in a meaningful decision space full of uncertainty and led by a partial view – into collective outcomes such as ‘objective’ market prices. Böhm-Bawerk stressed the partiality, not so much the uncertainty. The topic of uncertainty was for later Austrians to expand social theory to. Their world view was less ‘Victorian’. However, as I hope to have made clear by now, the interest for a partial representation of economic processes came

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62 See note 49. Lachmann: ‘The kaleidic society is […] not the natural habitat of Austrian economics, but the alien soil may prove nourishing. A model in which individual plans, each consistent in itself, never have time to become consistent with each other before new change supervenes has its uses for elucidating some striking features of our world.’ Lachmann (1976), p.61.
not out of modesty (as it perhaps did for Alfred Marshall). The partial view on economic phenomena was to pay attention to social mechanisms, i.e. those mechanisms that should always be the domain of social research. The ‘narratio intensity’ of his approach yields a positive (and presumably decreasing) marginal amount of meaningfulness to his capital and interest theory. Wicksell had invested more in formalization, Böhm-Bawerk in story telling. Each of them found their own harvest more palatable. But Wicksell did fail to see Böhm-Bawerk’s point. The identification of underlying economic mechanisms was the ultimate project the latter was engaged in. It is not possible to track down Wicksell’s misunderstanding of Böhm-Bawerk without seeing the narrative realism which is involved in the latter’s study of economics.

6 Conclusion

Böhm-Bawerk’s contribution to capital and interest theory uncovers essentialist inclinations and a narrativist realist rhetoric.

As to ontology, or metaphysics, there are supposed to be structures, mechanisms, and processes. Böhm-Bawerk assumed that the economic mechanism – which transmit individual intentional behaviour into market results – is rooted in a unified structure, which is there, waiting to be discovered. Hence, one of his self-imposed tasks is to provide for conceptual and explanatory unification. In addition, economic theory has to describe this mechanism as fundamentally causal in character. The belief that such a unified structure objectively exists and that processes are fundamentally causal in character entails a commitment to essentialism. The economist, then, is to give a unified picture that reflects a unified world. The drive to theoretically unify has been illustrated in section 2 by the discussion of Law of Costs, but also by examples of the concept of interest in the Use Theory and the Exchange Theory, in chapter I and section 3 of the current chapter, and by the subsumption of many markets under one that trades present against future goods, in chapter I.

As to methodology, Böhm-Bawerk walked a road largely rhetorical in kind. Its persuasive force rests on the method of inserting and dropping assumptions at will and on what I suggest to call ‘narrativist realism’. One of the assumptions that mislead Wicksell in the interpretation of the demand for capital was that social capital was exogenously given. This assumption enabled Böhm-Bawerk to adopt a partial view on the level of interest and thus to undercut his lack of mathematical skills. At the end of the very chapter of PTK that Wicksell said to admire the assumption was dropped, though it must be admitted that Böhm-Bawerk did not properly finish the job of nailing up a comprehensive macro model with an endogenous wage level. Let alone that he would have liked to endogenise capital too. The want for mathematical proficiency certainly prevented Böhm-Bawerk from
knitting the loose ends together.

Böhm-Bawerk sought to achieve, firstly, *theoretical unification* with, secondly, *sufficient complexity*.

One tool for theoretical unification was that of unifying the microeconomic conceptual apparatus, another was offering explanations that covered explananda both in and out of equilibrium. As to conceptual unification, Böhm-Bawerk undertook to subsume as many real world phenomena under one and the same concept. Thus, in credit markets and capital markets, but also in labour markets, the traded commodities are always future against present goods; wages are subsistence goods and, hence, present goods, while labour is a future good. In accordance with what later was coined praxeology much of the conceptual apparatus was entrenched in a civil law framework, unifying praxis and theory too in a way that is, in view of the divergence of disciplines today, uncommon.

Böhm-Bawerk’s hope to offer sufficient complexity lies in his use of an economic narrative. The (comparative) static analysis helped Wicksell to calculate market results in a mathematical model but it obscured the mechanical genesis of these results. As Böhm-Bawerk chose the transmission of individual decision making to market results as explanandum – which typically places him in the Austrian tradition – he was concerned not to disregard the mechanics. This is true even though Böhm-Bawerk’s system described stationary state economies: constant capital.\(^6\) He saw that there is a dynamics at yet another level than that of an expanding economy: the market process is dynamic even in a stationary state and positive interest is possible even when capital does not accumulate.

In WKR Wicksell refined Böhm-Bawerk’s system. But, with regard to the implicit dynamics of individual rational adjustment decisions and their collective consequences, the narrative technique enabled the latter to formulate an explanans of higher complexity. This level of complexity, springing from the inclusion of the mechanistic underpinnings, was to satisfy his typically Austrian explanatory needs. Wicksell misunderstood this aspect of Böhm-Bawerk’s work.

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\(^6\) For Wicksell the assumption of a stationary state amounts to idealization. See chapter IV, section 2.