

The Categorical Requisite of Mises's Pure Time-Preference Theory of Interest

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Abstract

Ludwig von Mises affirmed a pure time-preference theory of interest. He asserted this theorem as a categorical requisite of human action. He rejected Eugen von Böhm-Bawerk's productivity theory of interest. He also rejected Böhm-Bawerk's and Frank Fetter's psychological and time preference explanations of a theory of interest. His presentation of time preference is advocated as a necessary condition of interest, even in a world without the existence of capital goods or the capitalistic method of production. This paper has three aims. The first is to show the rationalist basis for Mises's pure time-preference theory of interest. The second is to examine the relation between the pure time-preference theory and roundabout methods of production. The third is to discuss the connection between the pure time-preference theory and the market rate of interest.

1.1 Introduction

The purpose of this paper is to examine the theory of interest presented by Ludwig von Mises. In the first section I will consider the rationalist basis for Mises's pure time-preference theory of interest. In the second section I examine the relation between the pure time-preference theory and roundabout methods of production. The third section will focus on the connection between the pure time-preference theory and the market rate of interest. I will end with a conclusion that summarises Mises's position and places his theory of interest in the context of his epistemology.

Carl Menger's subjectivist theory of value is a common foundation for Eugen von Böhm-Bawerk (cf. Pellengahr 1996:11-12), Friedrich Hayek and Mises. Böhm-Bawerk developed Menger's nascent ideas and produced his own theory of interest. Hayek, also building on the groundwork established by Menger, developed Böhm-Bawerk's and Knut Wicksell's productivity theory of interest. Mises and Hayek both employed Wicksell's distinction between the natural rate and the market rate of interest in their analyses of the business cycle.

The surprising outcome is Mises's pure time-preference theory of interest. He adopted Menger's theory of value, Böhm-Bawerk's and Fetter's elaboration on time preference, included both in his rationalist epistemology of praxeology and concluded with a pure time-preference theory of interest.

1.2 Mises's Rationalist Theory of Interest

1.2.1 Praxeological Time Preference

Mises states that time preference 'is a categorial requisite of human action' (Mises 1966:484). Mises's epistemology of praxeology considers the role that choice plays in human action (*ibid*:3). Individual choices are made with the aim of the removal of uneasiness and, in

Mises's words, are 'directed by the categories *sooner* and *later*' (*ibid*:483; original italics). Time preference 'manifests' itself in the notion of ordinary interest. One example of this is the discount in value between future goods and present goods. Mises's adherence to Menger's subjectivism is evident in this notion of present value and future value, specifically in the categorisation of goods with respect to their temporal proximity to want-satisfaction (*ibid*:524): '[i]nterest is the difference in the valuation of present goods and future goods; it is the discount in the valuation of future goods as against that of present goods' (Mises 1980:187-8).

Israel Kirzner states that Mises's theory of interest 'expresses the universal ("categorical") phenomenon of time preference and will therefore inevitably emerge also in a pure exchange economy without production' (Kirzner 1976:52-3). Moreover, for Mises, interest is not a payment for the services of capital, nor is it interest on capital or the income from the use of capital goods (Mises 1966:524, 526). These statements display a clear separation from classical definitions for Mises. He refers to the correspondence between land, labour and capital, and wages, rent and profit as unsound (*ibid*:524).

Mises defends the notion that individuals place a higher value on present than future goods (or satisfaction) (*ibid*:484). He supports the definition of interest developed from the 'fact' of the preference for present to future satisfaction (Knight 1941:412). According to Mises, the reason for this is because individuals are purposive; they possess a necessity to improve their circumstances, which Mises refers to as the removal of uneasiness. Time has meaning to the individual; it is not undifferentiated with respect to want-satisfaction. Time cannot be collapsed into an instant and ignored or regarded as logical time in a model, which is irrelevant to the want-satisfaction of an individual. Each moment in time presents needs and circumstances in which choices can be made for the purpose of improving one's condition (*ibid*:483).

Mises follows Menger and Böhm-Bawerk when he states that ‘present goods are valued higher than future goods of the same kind and quantity’ (*ibid*:524; cf. Böhm-Bawerk 1959b:259, Gunning 2005:85). Consumption goods are present goods; factors of production are purchased in the present for the production of consumption goods to be generated and made available in the future. Mises interjects into the argument the distinction just noted, that a present good is valued higher than a future good of equal quality and quantity. What distinguishes the value of a present consumption good and a future consumption good (of equal quality and quantity) is time. Time demarcates the proximity of an object and its subject, its capacity to satisfy want. Moreover, time is a dimension and not a commodity; it is not traded. Time separates periods in which satisfaction occurs. An individual, for Mises, can choose to exchange satisfaction sooner (later) for later (sooner).

Goods are valued in terms of their capacity to satisfy want, not according to objective characteristics, however they may be objectively defined. It is implicit in Mises’s rationale that, when he refers to a good of a similar kind and quantity, he compares the same consumption good, but at different points in time. In other words, he refers to goods of equal value or satisfactions of equal value, but available in the present and available in the future.

1.2.2 Universal Time Preference

Mises states that individuals always prefer present to future satisfaction: ‘the very act of gratifying a desire implies that gratification at the present instant is preferred to that at a later instant’ (Mises 1966:484).

Mises demonstrates this for the individual who consumes and saves: ‘[h]e who consumes a non-perishable good instead of postponing consumption for an indefinite later moment thereby reveals a higher valuation of present satisfaction as compared with later satisfaction’ (*ibid*). If this were not the case, Mises argues that the individual would ‘never

consume and so satisfy wants. He would always accumulate, he would never consume and enjoy' (*ibid*). Mises also demonstrates time preference for the investor: '[t]hose contesting the universal validity of time preference fail to explain why a man does not always invest a sum of 100 dollars available today, although these 100 dollars would increase to 104 dollars within a year's time' (*ibid*:486; cf. Gunning 2004:3). Mises states that an individual must evaluate the benefit of present (i.e. \$100) versus future (i.e. \$104) satisfaction. If one does invest, this means that future satisfaction is preferred than present satisfaction. However, Mises's argument for universal time preference is revealed by individuals actually consuming in the present or immediate future and not permanently deferring consumption.

He notes that it is a praxeological not a psychology theory. This error, he states, was made by Böhm-Bawerk (Mises 1966:488). Mises did not deny the legitimacy of Böhm-Bawerk's psychological reasons for the under-valuation of future satisfactions. For Mises, Böhm-Bawerk's arguments were legitimate. Mises's concern is that such reasoning is 'not inexorably and universally true' (Mises 1974:151).

1.3 Time Preference and Roundabout Methods of Production

1.3.1 Böhm-Bawerk's Theory of Interest

Böhm-Bawerk's theory of interest is clearly stated: '*[p]resent goods are as a general rule worth more than future goods of equal quality and quantity*. That sentence is the nub and kernel of the theory of interest which I have to present' (Böhm-Bawerk 1959b:259; original italics; cf. Mises 1966:524, Fetter 1977:172-3, Böhm-Bawerk 1959b:289, Zuidema 1988:66).

Böhm-Bawerk's famous three causes for interest are as follows. The first cause of the difference between present and future value (i.e. ordinary interest), is in relation to demand and supply at different times with respect to an individual's marginal utility of income – the value of a present good is valued more highly than the value of a future good of an equal

quantity and quality (Böhm-Bawerk 1959b:265-6; cf. Hennings 1997:118). The second cause is because the individual ‘*systematically undervalue[s]*’ the same satisfaction in the future compared with the same satisfaction in the present (Böhm-Bawerk 1959b:268; original italics). The third cause is due to under-valuation as it applies, in this instance, to producers: ‘time consuming roundabout methods of production are more productive’; therefore ‘*present goods are for technological reasons preferable means to the satisfaction of wants and for that reason they are a warranty of higher marginal utility than are future goods*’ (Böhm-Bawerk 1959b:273; original italics).

Böhm-Bawerk’s three causes are presented as three necessary conditions that provide the sufficient condition for the existence of ordinary interest. Mises acknowledged that Böhm-Bawerk had adopted a time-preference argument in his first two causes, which did not consider material productivity as essential to the explanation of ordinary interest. The productivity which comes from the addition of more factor inputs explains their rental prices (White 2008:xxviii), not interest. The discount inherent between final products and factors of production is reflected in prices, but the discount is primarily in value terms and explained only by time preference and not by physical productivity. Böhm-Bawerk’s third cause was attributed to the technical or physical productivity of roundabout methods of production. It is generally accepted that roundabout methods of production are physically more productive than direct methods of production.

Mises rejected Böhm-Bawerk’s third reason for the existence of interest (as did Fetter), based as it was on technical superiority of roundabout methods of production. Böhm-Bawerk made this productivity theory of capital one of the bases of his theory of interest (Knight 1941:412). Mises notes Böhm-Bawerk’s return, albeit in a subtler form, to a productivity

theory (Mises 1966:527-8).¹ Moreover, Böhm-Bawerk argued in favour of his third reason for interest that could provide an exclusively sufficient cause for the explanation of interest, quite separate from the first two reasons (Fetter 1977:185; cf. Kirzner 1976:56, Schumpeter 1954:931-2). This is the argument that the physical productivity of roundabout methods of production always produces value productivity (Böhm-Bawerk 1959b:274-5), an *agio* or interest.

An examination of Böhm-Bawerk's three causes reveals that the first two reasons are psychological and focus on an individual's preference for sooner or later, to use Mises's words. They are subjective. Böhm-Bawerk investigates why, for example, \$100 is worth \$110 in one year's time and why consumers regularly discount the future. Because the marginal utility of a good now is greater than in the future, the individual undervalues future wants, that is, the marginal utility of future goods are lower (*ibid*:272).

The third reason, again, is wholly attributed to the superiority of physically productive roundabout methods of production; it is a reason that is entirely external to the subjective evaluation of the individual, and treated as objective. Böhm-Bawerk initially would not countenance the notion that interest could arise from the employment of roundabout methods of production. However, he did attempt to explain that interest is caused not only by roundabout methods (cf. *ibid*:274-5), but that his third reason would provide both the necessary and sufficient condition for the existence of interest. However, another premise is added to this argument, in which he states that greater productivity can produce greater value. That is, a greater output is available at the end of a roundabout production process, compared to the output (using the same present factors of production) from a direct production process. It is because time-consuming roundabout processes are more productive than present goods

¹ 'The weak point of the Böhm-Bawerkian theory [of Capital and Interest] is not, as Professor Knight believes, the useless introduction of the concept of the period of production. It is a more serious deficiency that Böhm-Bawerk reverts to the errors of the so-called productivity theory. Like Professor Fetter of Princeton I aimed at an elimination of this weakness by basing the explanation of interest on time preference only' (Mises 1980:232).

attain higher value than future goods (*ibid*:273). Also, due to the roundabout (indirect) process of production, ‘more’ or ‘better’ goods are available than compared to the non-capitalist direct method of production (*ibid*:82, 268; cf. Gray & Thompson 1980:343-5).

A tendency to lengthen the period of production infinitely, due to an expected greater output in the future is constrained by Böhm-Bawerk’s first two reasons – that a greater output is valued at an increasing discount. Therefore the propensity to consume later (i.e. Böhm-Bawerk’s third cause) is constrained by a propensity to consume sooner (i.e. his second cause). This will limit the length of the period of production.

Mises rejected Böhm-Bawerk’s third reason for interest (Rothbard 1970:457n27). Mises’s view that interest is determined solely by time preference (Rothbard 1991:414)² is juxtaposed with Böhm-Bawerk’s concern that locates one reason for interest with technically productive capital (cf. Pellengahr 1996:2). The latter argument, as noted, takes the form of attributing the cause of interest to the objectivity of productive technology (Knight 1941:412; cf. Moss 1978:158-66, Yeager 1979:208). Disagreement, however, stems back to Böhm-Bawerk’s earlier arguments (Böhm-Bawerk 1959a:74) against the productivity theory (cf. Pellengahr 1996:2). However, it must be emphasised that Mises supported Böhm-Bawerk’s notion that individuals choose more roundabout methods of production; such methods require more time, and this cost is compensated by the generation of more and better products (Mises 1966:260).

1.3.2 History and Development

Mises attributed time preference to Jevons and the elaboration of it to Böhm-Bawerk. He ascribes the development of time preference to Knut Wicksell, Frank Fetter and Irving Fisher. He notes that these economists built on the groundwork laid by Böhm-Bawerk. Hayek also

² Rothbard, following Mises, ascribed time preference as a ‘universal and *necessary* fact of human action’ (Rothbard 1970:457n27; italics original).

referred to Böhm-Bawerk's eminent contribution, and specifically with two distinct branches of thought that emerged from his work. One branch of thought that extended Böhm-Bawerk's work emphasised the productivity theory of interest, which included Wicksell, which Hayek found useful as the basis for his theory of capital (Hayek 1941:43). The other branch of thought that extended Böhm-Bawerk's contribution and which emphasised the time-preference theory, included Fetter and Fisher (Hayek 2008:377, 1941:420, 43-4; cf. Hayek 1945:22), though Fisher also emphasised the productivity element (Pellengahr 1996:37n76).

Fetter is credited with first formulating a pure, psychological time-preference theory of interest in response to Böhm-Bawerk. Mises later reformulated it as a praxeological proposition; Rothbard agreed with Mises's solution. Moss stated (as merely one response to Menger's criticism) that it was dissatisfaction with Böhm-Bawerk's third reason that caused Menger to refer to it as one of the greatest errors (Pellengahr 1996:12n22).

However, Mises concluded that this inability to demonstrate the universal nature of time preference was displayed by both Böhm-Bawerk and Fetter. Böhm-Bawerk's effort to show that individuals account for time in their calculations involved the consideration of psychology (Hennings 1997:117). Böhm-Bawerk's interest theory emanated from his intertemporal theory of value, which was an elaboration of Menger's (and Turgot's) theory of value in an intertemporal context (Pellengahr 1996:19; cf. Hennings 1997:2). He used one of Turgot's arguments, that interest is a legitimate (or just) recompense for the loan of capital (i.e. money and things) as his (legal) starting point (Hennings 1997:57-8, Böhm-Bawerk 1959a:35-8; cf. Groenewegen 1971:329-30). He also borrowed from Turgot and concluded that a commodity that satisfies 'an equally important want in the future with equal intensity' will be valued more highly in the present than the future (Böhm-Bawerk, cited in Hennings 1997:58; cf. Böhm-Bawerk 1959a:36, Groenewegen 1971:330).

It was not until late in his career that Mises presented a consistent Austrian view on capital and interest, though his earlier work was limited to mainly oral teaching and seminars (Kirzner 1976:51). Moreover, though little was written by Mises on capital and interest prior to 1940 (*ibid*:52), he later renounced the productivity theory of interest in favour of a pure time-preference theory, as developed by Fetter (Moss 1978:158, Pellengahr 1996:11) and Böhm-Bawerk.

Though he followed Böhm-Bawerk's method, Mises was not its advocate because he did not find it a satisfactory solution; he planned to present a study on the problem of interest (Mises 1934:339, 339n1). He did not present a separate study on the matter, but eventually presented his view on interest in his 1940 *Nationalökonomie* (Mises 1940), the German language precursor to his 1949 *Human Action* (third edition: Mises 1966). This is a transition for Mises from Böhm-Bawerk's productivity theory of interest (as well as Wicksell's development of Böhm-Bawerk's theory) to a more consistent subjectivist position, such as that found in Menger (Moss 1978:158). Fetter's pure time-preference theory exemplifies this subjectivism (Fetter 1915:248f).

Mises continued to use Wicksell's natural rate of interest, and improved it by contrasting it with a money rate of interest (Hayek 1935:25-6); this allowed him to analyse distortions in the capital structure due to what Fisher referred to as the 'money illusion' (Lachmann 1977:105). Thus Mises employed Wicksell's natural rate of interest in his study of the business cycle (Mises 2006:53-153).

Böhm-Bawerk's psychological notion of time preference was rejected (as was the concept of impatience) because Mises argued that it is a 'praxeological' concept that an individual prefers satisfaction sooner than later. As I have observed, Mises argued that if this were not the case, then consumption would never occur (Mises 1966:486). Mises also argued that Böhm-Bawerk's psychological position is inadequate because it does not apply

universally and therefore cannot adequately serve as a universally valid proposition (*ibid*:488).

Mises states that Böhm-Bawerk did not manage to avoid the error of the productivity approach, which he had previously refuted (*ibid*:485-6); this error was more serious than that of the average period of production. Mises states that he avoided this error by basing his theory of interest only on time preference (Mises 1980:232). He also states that the period of production is best expressed as a praxeological category of action (Mises 1966:527).

Mises's dissatisfaction with Böhm-Bawerk's position, at least with respect to Böhm-Bawerk's third cause of interest, may be reflected in the criticism by Menger of Böhm-Bawerk – one of the 'greatest errors' (Schumpeter 1954:847n8; cf. Tomo 1997:5, Endres 1997:171). It could be a reference to Böhm-Bawerk's theory of interest and not his theory of capital. It is important to note that Schumpeter offered praise for the two central contributions offered by Böhm-Bawerk – the physical productivity of capital and the systematic under-valuation of future satisfaction, both of which had been presented in nascent form by Menger (Schumpeter 1954:846-7; cf. Menger 1976:160-1). Menger's criticism can not be of his own position, but it was of Böhm-Bawerk's 'theory' as he had developed it; specifically, Böhm-Bawerk's theory was not 'a development of [Menger's] suggestions' (*ibid*:847n8). The unique aspect of Böhm-Bawerk's theory, and the reference here is to his theory (i.e. dual theories) of capital and interest, is the concept that physically productive capital also produces value or an *agio*.³ Mises developed a praxeological notion of originary interest that avoided this and located the authority for the valuation of objects to the (subjectively evaluating) individual.

³ Using different terminology, Böhm-Bawerk regards social capital as comprising concrete goods, an objectivist conception. Such a notion is irrelevant for Menger, who considers objects in terms of their economic goods' status, a universal (i.e. a relation) that relates objects to the want-satisfaction of the individual (cf. Endres 1987:302, 308).

1.4 The Connection to the Market Rate of Interest

1.4.1 A Rationalist or Psychological Basis for Interest

On the one hand Mises did reject the reasons for Böhm-Bawerk's second cause, the systematic under-valuation of future satisfaction or goods, but on the other hand he accepted the rationale but expressed concern that the reasons offered by Böhm-Bawerk (such as lack of knowledge of future needs and indecision) were inadequate because they were psychological. Mises believed that Böhm-Bawerk did not sufficiently answer the arguments mounted against his second cause. Mises offered opposing arguments for the potential over-valuation of future needs: the individual who refuses present enjoyment in order to train for future employment that provides a higher income, or the entrepreneur who lives frugally in the present and re-invests business earnings in anticipation of higher future earnings (Mises 1974:151-2).

Mises's contention is that Böhm-Bawerk's first two reasons – the higher valuation of present compared with future satisfactions – are plausible, but because they are psychological⁴ they cannot exhaustively account for all cases (*ibid*:155-6). Mises's aim (like Menger's, with respect to his concepts of value, goods and prices) was for a universal theory, one 'inexorably and universally true' (*ibid*:151), a 'definite conduct [that] is necessarily always and in the same way common to all men' (*ibid*:156).

For Mises, Böhm-Bawerk demonstrated a credible argument for a general rule: that certain individuals have an incorrect systematic under-valuation of future goods or satisfaction, but that others have an incorrect over-valuation (*ibid*). Mises found it was not sufficient to explain interest. There are no exceptions for Mises: '[i]n acting, one must always, without any exception, value a satisfaction at an earlier point in time more than the same kind and amount of satisfaction at a later time' (*ibid*:156). Mises states that if this were not the case, there would be no capacity for choosing present satisfaction; all actions that involve

⁴ Psychology considers why an individual chooses particular ends and praxeology the formal implications of the means used to attain desired ends (Rothbard 1970:64).

consumption or the relief of a present state of uneasiness, he argues, favour present satisfaction (*ibid*:155-6).

Mises's abstract conception of originary interest means that it is a metaphysical proposition. As such it does not have a direct connection with the objects of economic life. It does not depend on the productivity of capital. It does not depend for its cause on the existence of capital goods. Mises states that originary interest would exist in an economy given only to direct (non-capitalist) methods of production, because it is an *a priori* proposition, a universal, that present satisfaction is preferred to future satisfaction (Levatter 1979:73), and it does not depend on the structure of production. This is why Mises can refer to interest as a category of human action. He implicitly subsumes the capital productivity thesis under a theory of time preference, in which present satisfaction is preferred to future satisfaction.

As I have observed, it seems that his main rationale is that if it were not true, an individual would be ambivalent between present and future satisfaction, and that present consumption would never occur (Mises 1966:486). Mises refers to the necessity for time preference. The alternative choice is for a future that offers a greater value or yield and that would lead only to savings and investment, and limited or no present consumption (Mises 1969, cited in Hülsmann 2007:777).

It has been argued that a deeper cause may be behind Mises's view on interest. Mises states that time preference is necessary due to the chemical and physical structure of the universe. A decision that is not made in terms of present satisfaction means that the individual will not continue to survive (*ibid*). Mises does not refer to such a consumption-survival thesis as the justification for his universal notion of time preference (Gunning 2005:82-3), but it can be inferred that if an individual 'were not to prefer ... earlier to ... later satisfaction, he would

never be able to consume at all' (Mises 1974:157).⁵ The consequence is that is an individual will not survive without consumption.

1.4.2 Time Preference and the Market Rate of Interest

The market rate of interest is largely reflective of individuals' different valuations of present goods with respect to future goods. The market rate reflects the originary rate of interest or the social rate of time preference that consists of all individuals' rates of time preference.

Individual aspirations differ as to the choice of present to future satisfaction or goods. This is Mises's notion of a 'discount of future goods as against present goods' (Mises 1966:527).

Each individual differs in their provision for future needs; therefore originary interest differs from one person to the next, with 'valuations unceasingly fluctuating and changing' (*ibid*:536).

The result is a uniform (social) rate of originary interest. Marginal differences between the prices of present goods and the prices of future goods are resolved by entrepreneurs entering sectors of the economy where the margin is higher and avoiding those sectors where it is lower. This provides a tendency toward a 'uniform rate of originary interest in the whole market economy' (*ibid*).

Mises states that the prices of complementary factors of production equal the price of the product, with 'due allowance being made for time preference' (*ibid*:295). In other words, originary interest is '[t]he difference between the sum of the prices of the complementary factors of production and the products which emerges ... [and it] is an outcome of the higher valuation of present goods as compared with future goods' (*ibid*:525). It is notable that Mises avoids at this point any discussion about imputation that compares values; his focus is on objective exchange represented by prices, which in turn reflect subjective evaluations.

⁵ Mises states that '[t]ime preference manifests itself in the phenomenon of originary interest, i.e., the discount of future goods as against present goods' (Mises 1966:524).

Mises's notion of the gross market rate of interest is not fully explained by ordinary interest. In addition to the ordinary rate, Mises includes in the market rate an entrepreneurial element or a premium for uncertainty (or risk) due to the speculative nature of entrepreneurial activity, as well as a component that accounts for changes in the purchasing power of money. A price premium is thus added as a spread to the ordinary rate when prices are expected to rise due to an increase in the quantity of money (Moss 1978:164, Greaves 1974:electronic).

1.5 Conclusion

Mises's pure time-preference theory of interest is an *a priori* abstract theory. Mises observed in the debates between Böhm-Bawerk and his contemporaries the problems that arise when attempting to address concrete objects without a satisfactory method that delineates one object from another. He was cognisant of Böhm-Bawerk's significant effort to make use of Menger's subjectivism in the development of his capital and interest theories. Mises did not believe that Böhm-Bawerk had failed; a more charitable conclusion may be the one reached by Fetter, that Böhm-Bawerk did not achieve his aim (Fetter 1977:188).

Mises rejected Böhm's average period of production, as well as his argument that the technical productivity of capital (i.e. Böhm's third reason) explains interest. (However, he did modify and use Wicksell's natural rate of interest in his trade cycle theory.) This is a move for Mises away from existing classical notions to a more consistent subjectivism. Furthermore, Mises did not accept as given Böhm-Bawerk's first two reasons, because he felt that they were insufficient to be regarded as a universal explanation for the phenomenon of interest.

Mises's claim is one that attempts to explain the cause of ordinary interest, and not an argument that explains what determines the size of (ordinary or market) interest or the reason for why it is positive (Pellengahr 1986:73, 1996:2). Nevertheless, the exclusively subjectivist focus of the pure time-preference theory (Rothbard 1991:419-20), which does not depend on

physical productivity, is considered absurd by critics inside and outside the Austrian school (Kirzner 1993:166-7; cf. Pellengahr 1996:2-3).

Moreover, Mises's approach to interest developed the work of Jevons, Böhm-Bawerk, Fetter and Fisher. Fetter advanced a purely psychic approach (which Mises considered psychological, as he did Böhm-Bawerk's first two causes) and Fisher promoted the universal notion of impatience as a cause of interest. Mises perceived that empiricist generalisations were inadequate and must have seen in Menger's work (as well as in the debates in the *Methodenstreit*) the contrast between general and universal theorems. He was aware that Menger's aim was to attain to universal laws in economics. These he believed could not be reached via the method of the physical sciences.

Mises was well schooled in philosophy and realised that universals are not empirical by nature; they are abstract and invariant. He developed praxeology, the science of human action, which attempts to address the mind-body or subject-object issues of human life. This, too, is presented as an *a priori* universal, the notion that individuals act purposively to attain better ends. It is not surprising that he could elicit from this presupposition a theory of interest that is entirely abstract and not dependent on external objects.

The rationale is that the individual (i.e. the subject) is the cause of the valuation of economic goods (i.e. objects) of economic life, and must economise due to scarcity (defined according to clarification between non-economic and economic goods). Objects in themselves are mere form and matter (Böhm-Bawerk 1959b:6-7), and irrelevant to the economising individual if not brought into contact with the want-satisfaction of the individual. What follows from this subject-object universal relation, articulated by Menger, is the definition of economic and non-economic goods. As noted, the want-satisfaction of the individual is the cause of the definition of economic goods, scarcity and value.

Therefore Mises's praxeology consistently developed Menger's subjectivist insights. Mises argued that time preference is a category of human action, guided by the choices of sooner and late, and expressed as the discount in value of future goods as against present goods (Mises 1966:483-4, 1980:187-8). Though Mises did reject Böhm-Bawerk's productivity theory and psychological, time preference theories of interest, he did not reject Böhm-Bawerk's many eminent contributions. In one sense Mises returned to Menger. He developed Menger's important contributions, but placed them, as well as Böhm-Bawerk's contributions, within his rationalist epistemology of praxeology.

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