

THE CONCEPT OF ORDERS OF INSTRUMENTS AND GOODS
IN J. RAE AND C. MENGER

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Abstract

A key feature of the general logic of paradigms or research programs as applied to the history of economic thought, is the acceptance of the fundamental change in the ways of formulating, and analyzing facts and concepts. One can discern an example of the above fundamental change in a critical comparison of a particular aspect of the work of the classical economist J. Rae and of one of the first adherents of the marginalist school, C. Menger. This aspect is the idea of orders. In particular, both economists had as a basis a similar view that objects can be classified in terms of orders. However, they developed a completely different theory which was driven by their respective conceptual framework. The purpose of this paper is to illustrate by using the case of Rae and Menger, how the same idea can lead to completely different approaches depending on the conceptual framework

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I. Introduction

Many works have pointed out the shift in conceptual framework that took place with the marginalist revolution. The emergence of marginalism represented a theoretical shift of major importance with two main characteristics: The change of emphasis to questions of allocation and a movement away from a supply-based explanation of value and prices to a demand-based explanation. A number of historians of economics have characterized this change as an example of scientific revolution in the sense of modern philosophies of science like Kuhn's and Lakatos' (e.g. Coats,1969; Bronfenbrenner,1971;Blaug,1976; Deane, 1978).¹ If one accepts the general logic of paradigms or research programs, one is ready to accept the fundamental change in the ways of formulating, and analyzing facts and concepts and in general, the change in conceptual framework.

One can discern an example of the above fundamental change in a critical comparison of a particular aspect of the work of the classical economist J. Rae and of one of the first adherents of the marginalist school, C. Menger. This aspect is the idea of orders. In particular, both economists had as a basis a similar view that objects can be classified in terms of orders. However, they developed a completely different theory which was driven by their respective conceptual framework.

Thus the purpose of this paper is to illustrate by using the case of Rae and Menger, how the same idea can lead to completely different approaches depending on the conceptual framework. Thus the paper starts with a brief section on Rae and Menger in historical perspective. The next section discusses and compares the concept of orders of instruments which can be found in Rae with the orders of goods which is in Menger's work.

¹ It has to be noted though that not all historians of economics accept the idea of scientific revolutions especially with reference to the classical and the marginalist schools (e.g. Hollander, 1979)

II. Rae and Menger in Historical perspective

Rae (1796-1872) can be classified as belonging to the classical school. Emerging from the Universities of Aberdeen and Edinburgh, he published one main work in Boston. This work was entitled "The Statement of Some New Principles on the Subject of Political Economy Exposing the Fallacies of the System of Free Trade and of Some other Doctrines Maintained in the 'Wealth of Nations'". The book was published in 1834 and as the title indicates it was targeted against some of A. Smith's views. More specifically, he attacked the role of the free-trade and the anti-state views of Smith (Schumpeter, 1954, pp.468-469 and Roll, 1973, p.418). Apart from his attack on Smith, Rae developed a thorough theory of capital which as we shall see, had as a starting point the idea of orders of instruments.

Although J.S. Mill had quoted the book, it did not make considerable impact among his contemporaries. Some of his ideas re-surface almost 50 years later, in Böhm-Bawerk's theory of capital. Initially, he learned of Rae's ideas through Mill, but later he cited from Rae's book itself (see Mixter, 1897, 1902). After a few years, there was a new rearranged edition of his book by C. Mixter under the title "Sociological Theory of Capital", through which Rae's ideas started to be re-introduced in the history of economic thought. It has to be pointed out though, that for the majority of historians, he still remains one of the lesser figures.

On the other hand, Menger (1840-1921) is thought to be a member of the marginalist trinity, although an increasing number of historians of economic thought have promoted the view that Menger cannot be categorized in the same school as Jevons and Walras (see for instance Jaffe, 1976; Loasby, 1976; Alter, 1982, 1990; Staley, 1989). Menger's ideas were much more influential in terms of subsequent influence than Rae. He was the founder of the Austrian school which can still be discerned as one of the non-orthodox approaches. Menger, for instance influenced the economic thought of E. von Böhm-Bawerk and through him Hayek. (Backhouse, 1985, p.93). The use of the concept of margin in his economic analysis, his

subjective theory of value and his emphasis upon competitive markets are the main elements which justify his position in the development of marginalist thought (Drakopoulos, 1991,p.74). The main body of his work is to be found in his first book which has been translated to English as *Principles of Economics* (1871). His well known methodological anti-historicist position can be found in his second book translated as “*Problems of Economics and Sociology*” (1883).

III. Wants, Instruments and Goods

For Rae, human wants is the basic concept. “The end [of Man] is a supply for future wants.” (Rae,1834,p.83). On this concept he builds the notion of instrument which is central in his analysis.

“The term instrument is, in general, properly enough employed, to denote any means for the attainment of some end” (Rae,1834,p.86).

Combining the above with his definition of end, it is clear, that instruments are the means for the attainment of human wants. The more detailed definition that Rae gives is the following:

“In general then, all the changes which man makes, in the form of arrangements of the parts of material objects, for the purpose of supplying his future wants, and which derive their power of doing this from his knowledge of the course of events, and the changes which his labor, guided by his reason, is hence enabled to make in the issue of these events, may be termed instruments” (Rae,1834,p.87).

Almost forty years later, Menger’s definition of the good is conducted in very similar terms. According to Menger, a thing can become a good when the four following conditions are present:

“ A human need, 2) Such properties as render the thing capable of being brought into a causal connection with the satisfaction of this need 3) Human knowledge of this casual connection, 4) Command of the thing sufficient to direct it to the satisfaction of the need”(Menger,1950, p.52).

It is clear that the two definitions are extremely similar.

Rae goes on to give a number of examples of instruments. For him, a field and the wheat grown on this field are instruments. The want that the wheat satisfies is nourishment (Rae, 1834,p.88). Further examples are the flour, all tools and machines, houses, ships, cattle, gardens, stores (Rae, 1834,pp.88-89).

Menger also gives examples of goods which are more or less similar to the ones we saw in Rae (Menger, 1950,p.57). Thus up to this point, one can observe that both authors have extremely similar ideas.

Rae proceeds to list the common points to all instruments:

- 1) They are all either directly formed by human labor, or indirectly [through the use of other instruments]
 - 2) All instruments...either produce, or contribute to the production, of events supplying some of our wants. Their power to produce such events, or the amount of them that they do produce, may be termed their capacity
 - 3) Between the formation and exhaustion of instruments a space of time intervenes.
- (Rae, 1834,pp.91-93)

The first point gives the first hint for a classical theory of value. Rae's theory of value is not entirely clear as Böhm-Bawerk had also pointed out (Böhm-Bawerk 1959, p. 237).

However, one can argue that he held a classical theory in a wider sense (see Ahmad, 1996, p.7 and Maneschi, 1996). As far as the second point is concerned, Rae explicitly states that the measure with which capacities are measured is labour. Again this reinforces the move towards a classical oriented theory of value. Furthermore, the term exhaustion is defined as the passage of things from the class of instruments, into things which are not instruments (Rae, 1834,p.93).

It is clear that up to now, Rae only talks about instruments, without any reference to the concept of good. For Rae goods are just a special category of instruments. Their distinguishing characteristic is that they can be exchanged.

Some instruments are easily moved from place to place, and, on this account, they are peculiar facilities, in exchanging them with others. This seems to be the character distinguishing what are called goods, or commodities, from other instruments (Rae, 1834,p.94).

The common measure of instruments is labour. As Rae states:

“...a day’s labor as the unit, serving as the base of calculations, concerning the formation and exhaustion of the capacity of instruments (Rae, 1834,p.98).

On the other hand, Menger uses satisfaction as the key concept with which different goods are compared. In particular, in the table that he constructs, he compares the magnitudes of satisfaction of different goods by using a scale of satisfactions (Menger,1950,p.127).

Thus one can observe the point of departure here for the two authors. Rae uses labor as the key for comparing instruments and goods while Menger, adopts the concept of satisfaction.

IV. Orders of Instruments and Goods

The next concept that Rae builds is the idea of orders of instruments. The basic element which determines the order is time.

“Every instrument would find a place, in some part of a series, of which the orders were determined by the period of time at which instruments placed in them, issue, or would issue, if not before exhausted, in events equivalent to double the labor expended in forming them (Rae, 1834,p.100).

According to Rae, theoretically it is possible to have an infinite number of orders since the time period determines the order. The definition of instruments which belong to Order A is the following:

“They in one year issue in events equivalent to double the labor expended on their formation.” (Rae,1834,p.101)

By the same reasoning, the definition for Order B is in the same lines the only difference being that instead of one year we have two years. The same holds for all other Orders. Rae realizes that it is possible that many instruments might not be exhausted in an exact number of years nor that the capacities double the cost of formation. However, it would be possible to “reduce the instruments to some order that may be interposed between two proximate orders” (Rae, 1834,p.102). One can observe that Rae had a cardinal approach.

Menger on the other hand defines orders purely in terms of their proximity to the satisfaction of human needs. More specifically, Menger, proceeds to separate goods into four orders. The goods of the first-order are those that directly satisfy human needs and therefore acquire value. The second-order goods are those used for the production of the

first-order goods and it is only through this relationship that they acquire their goods character (Menger, 1950,p.57). By the same principle, the third-order goods are those that are used for the production of the second-order goods. Finally, the fourth order goods are those that are used for the production of the third-order goods (Menger,1950,p.57). Thus one can note that only first -order goods which directly satisfy needs have direct value. Values of higher order goods are imputed. (Drakopoulos,1991). Furthermore, Menger's schema is characterized by a ordinal dimension.

Given the above, Menger provides some examples of orders of goods. According to Menger, bread, beverages, clothes are examples of first order goods since they directly satisfy human needs. The "labor service of a journeyman baker, and ordinary flour are examples of second order goods. Grain mills, wheat, rye, and the labour services applied to the production of flour, are examples of third order goods because they are used in the production of the second order goods. Finally, the fields for the cultivation of wheat and rye, instruments and appliances necessary for their cultivation, and the specific labour services of farmers are examples of fourth order goods (Menger,1950,p.57)

Rae, based on the definition of orders of instruments, gives two general rules for the placement of instruments into orders. The first rule is the following:

"The shorter the space of time between the period of its formation, and that of its exhaustion, the nearer will any instrument be placed to the order A, that is, towards the more quickly returning orders." (Rae, 1834,p.108)

The second rule relates the capacity and the cost of formation:

"The greater the capacity, and the less the cost of its formation, the nearer will any instrument be to the order A; the less the capacity, the greater the cost of formation, the further will it be from A." (Rae, 1834,p.108).

The summary of the above is that the proximity of instruments to A is inversely as the cost and the time, and directly as the capacity (Rae, 1834,p.108). As a final point here, Rae accepts that it is possible to place an instrument further from order A :

“The procedure of adding to the durability, by adding equally to the expense of formation, will have greater effect in placing an instrument further from A, the more it is subjected to its operation” (Rae, 1834,p.111)

Rae gives virtually no specific examples of instruments belonging to orders. However, it is not very difficult to place instruments to orders based on his general definition. It might be interesting to see where the examples that Menger supplies would be placed in Rae’s schema. Bread and Beverages are first order goods in Menger’s system but similarly, they are close to the A orders of instruments in Rae’s schema since the period between their formation and exhaustion is short and also because the relatively low cost of formation. By the same reasoning, grain mills which is an example of third order good according to Menger, must be further away from the order A since the time period and the cost are higher than the previous two. The fields for the cultivation of wheat and rye and the instruments necessary for their cultivation which are all fourth order goods in Menger’s approach, are again even farther away from order A since their cost of formation and the time are even higher. Thus one can observe that there is a general agreement between the two authors concerning the placement of goods in lower and higher orders. This can be seen as an additional indication that in the long-run classical and marginal value theories converge.

However, it should be pointed out that the general implications of the concept of order in Menger is radically different than those of Rae. In particular, in Menger’s system, capital goods are placed in the category of higher order goods since they are indirectly linked to human needs. This means that the idea of capital goods or means of production become a special category of incomplete consumable goods . The consequence of this is that it “extends the range of the principle of marginal utility over the whole area of production and

distribution” (Schumpeter, 1954, p.913). In general, cost phenomena are explained by the principle of marginal utility.

On the other hand, Rae’s approach enables him to set the basis of a theory of capital which is founded upon the concepts of time and cost of production. It is indicative, that subsequent historians of economic thought gave Rae the highest credit for his idea that the lengthening the process of production will in most cases increase the physical amount of the final product (e.g. Schumpeter,1954,p.469).

It is possible to think of other similar examples in the history of economic thought where, an apparently similar concept or an idea acquires different role and meaning in a new conceptual framework. The example of the concept of utility can be mentioned here. More specifically, it is not unknown that many classical economists such as Ricardo and Mill used the utility approach even in some connection to the theory of value. For instance, Ricardo thought that commodities possess utility and that utility is absolutely essential to exchangeable value (Ricardo,1817 [1987], p.5), Furthermore, Mill in the process of defining wealth explicitly accepts that utilities are embodied in material objects (Mill, 1848 [1909],p.46-48) However, utility was never employed to build an entirely subjective theory of value as was the case with the marginalist school.

V. Concluding Comments

The basic idea of this paper was to examine the concept of orders of instruments in the thought of Rae and the concept of orders of goods in Menger. It was seen that both writers had an exceptionally similar definition of instruments and goods based on the idea of human needs. Subsequently, they both devised the concept of order which categorizes instruments and goods. For Rae, the basic criterion for the placement of instruments to orders is time and the cost of formation. These ideas were the building blocks for a classical theory of capital, technology and accumulation. For Menger, the placement of goods in orders depends on how

directly satisfy human needs. Reflecting the marginalist perspective, Menger's wider aim was the construction of a theory of consumer. The two criteria also indicate the difference between a classical theory of value that Rae had and the subjective theory of value that was followed by Menger. In spite of this however, the paper showed that there is a general agreement between the two authors concerning the placement of goods in lower and higher orders. Given the different theories of value on which they are based, this point is of particular importance. It was then argued that the case of orders in Rae and Menger, is a good example of how the same idea can lead to completely different approaches depending on the conceptual framework: Rae's thought is closer to the traditional themes of the classical while Menger's ideas reflect the shift of emphasis to demand based theories. A similar example might be the concept of embodied utility which was employed by classical economists but it never led to a utility-based theory of value. Thus the findings of this paper might be seen as reinforcing the belief that the role of conceptual framework, or paradigm if one wants to follow a Kuhnian approach, is important in understanding the development of economic thought.

REFERENCES

- Ahmad, S. (1996) Rae, Böhm-Bawerk, and Fisher on the Supply and Demand of Capital, paper presented to the **J. Rae Bicentenary Conference** at Aberdeen,
- Alter, M. (1982) "Carl Menger and Homo Oeconomicus: some Thoughts on Austrian Theory and Methodology, **Journal of Economic Issues**, 16, pp.149-60.
- Alter, M. (1990) "Carl Menger and his Legacy in Economics", in B. Caldwell (ed.), **Annual Supplement to the History of Political Economy**, vol. 22, pp.313-348.
- Backhouse, R. (1985) **A History of Modern Economic Analysis**, Oxford: Basil Blackwell.
- Blaug, M (1976) "Kuhn versus Lakatos or Paradigms versus Research Programmes in the History of Economics" in **Method and Appraisal in Economics**, S. Latsis (ed.), Cambridge: Cambridge University Press.
- Böhm-Bawerk, E. (1959) **Capital and Interest vol. I**, transl. by G.D. Huncke and H. F. Sennholz, South Holland Ill.: Libertarian Press.
- Bronfenbrenner, M. (1971) "The 'Structure of Revolutions' in Economic Thought", **History of Political Economy**, 3, pp.136-51.
- Coats, A. W. (1969) "Is There a 'Structure of Scientific Revolutions' in Economics?", **Kyklos**, 22, pp.289-96.
- Deane, P. (1978) **The Evolution of Economic Ideas**, Cambridge: Cambridge University Press.
- Drakopoulos, S. A. (1991) **Values and Economic Theory**, Aldershot: Avebury-Gower.
- Hollander, S. (1979) **The Economics of David Ricardo**, Toronto: University of Toronto Press.
- Jaffe, W. (1976) "Menger, Jevons and Walras De-homogenized, **Economic Inquiry**, 4, pp.511-24.
- Loasby, B. (1976) **Choice, Complexity and Ignorance**, Cambridge: Cambridge University Press.
- Maneschi A. (1996) John Rae on Trade, Inventions and Infant Industries: a Capital-Theoretic Perspective, paper presented to **the J. Rae Bicentenary Conference** at Aberdeen.
- Menger, C. (1950) [1871] **Principles of Economics**, trans. by J. Dingwall and B. Hoselitz, Glencoe, Illinois: The Free Press.
- Mill, J. S. (1909) **Principles of Political Economy**, by W. Ashley (ed), New York: Augustus M. Kelley.

Mixer, C. (1897) "A Forerunner of Böhm-Bawerk", **Quarterly Journal of Economics**, 11, pp. 161-190.

Mixer, C (1902) "Böhm-Bawerk on Rae", **Quarterly Journal of Economics**, 16, pp.385-412.

Rae, J. (1964) [1834] **The Statement of Some New Principles on the Subject of Political Economy Exposing the Fallacies of the System of Free Trade and of Some other Doctrines Maintained in the 'Wealth of Nations'**, New York: A.M. Kelley.

Ricardo, D. (1987) **The Principles of Political Economy and Taxation**, London: Dent.

Roll, E. (1973) **A History of Economic Thought**, London: Faber and Faber.

Schumpeter, J. (1954) **History of Economic Analysis**, London: Allen and Unwin.

Staley, C. (1989) **A History of Economic Thought: from Aristotle to Arrow**, Oxford: Blackwell.