

Is utility a measure of commodity value?

On two different approaches to the subjective theory of value

KATARZYNA APPELT, *PH.D.*

e-mail: katarzyna.appelt@hotmail.com

SUMMARY

This paper reviews two theories of utility. In Jevons' theory, utility denotes an abstract quality of a commodity and value is derived from the knowledge of the utility of a commodity. Menger, however, argued that the concept of value cannot be associated with the fact that things are useful. Goods themselves are worthless unless a human assigns value to them. It is shown that utility as a measure of commodity value is a vague concept.

Keywords: theory of value, marginal revolution, utility, total utility, final degree of utility, human need, economic good, William Stanley Jevons, Carl Menger

Journal of Economic Literature (JEL): B13, D46, E13, E14.

DOI: <http://doi.org/10.18096/TMP.2021.02.03>

INTRODUCTION

The birth of the subjective theory of value is commonly dated to the 1870s, when Carl Menger, William S. Jevons and Leon Walras (known as the founding trinity of neoclassical economics) almost simultaneously questioned the classical (labour) theory of value and proposed a subjective approach to the issue of value in economics.

Closer analysis of the assumptions underlying the works of Menger, Jevons and Walras reveals fundamental differences in their approaches. Although they all state that value is subjective in nature, each of them defines it in a different way. Jevons introduced to economics the concepts of total utility and final degree of utility. In Menger's work, valuation is a matter of human judgment. The history of economic thought clearly shows that it was the mathematical approach that prevailed. The most popular economic theory today, that of Marshall, is the best evidence of this. As a consequence, the subjective theory of value appears to limit itself to marginal calculation based on the postulate of maximization of utility.

The goal of this article is to re-analyse the implications resulting from the approaches of Jevons and Menger. As we shall see, these two scholars attributed different meanings to the notion of value. They also used a different methodology, which would influence their ultimate conclusions. The promised return to the basic assumptions of Menger's and Jevons' theories is first of all an

occasion to verify the meaning and role of the category of utility.

THE NOTION OF UTILITY IN JEVONS' THEORY OF VALUE

The point of departure of Jevons' famous work is the assumption that economics, if it is to be a science at all, must be mathematical science. Economics deals with quantities and as such its laws and relations must be mathematical in nature (Jevons 1931, p. 3). Jevons begins his *Theory of Political Economy* (1871) by redefining the economic system of value, and he does this by introducing mathematical categories into theoretical analysis. The central element of Jevons' theory of value is the notion of utility. How does he explain this term? How is that notion related to Jevons' theoretical system of value?

In Jevons' theory, *utility* denotes the abstract quality whereby an object serves our purposes and becomes entitled to rank as a commodity (Jevons 1931, p. 38). A commodity is defined as any object, substance, action or service which can afford pleasure or ward off pain (Jevons 1931, p. 38). Whatever can produce pleasure or prevent pain may possess utility (Jevons 1931, p. 38)¹. Elsewhere in Jevons' work one can read that utility is the intensity of effect produced upon the consumer (Jevons 1931, p. 47). Jevons declares that utility must be considered as measured by, or even as

actually identical with, the addition made to a person's happiness (Jevons 1931, p. 45).

In presenting his theory of utility, Jevons discriminates between the total of utility of a commodity and the utility attaching to any particular portion of it. Jevons proves that the very same articles vary in utility according to whether we already possess more or less of the same article (Jevons 1931, p. 44). His well-known law of the variation of utility states that the degree of utility varies with the quantity of a commodity, and ultimately decreases as that quantity increases (Jevons 1931, p. 43). The distinct feature of his theory is the application of *utility calculus* to the theory of consumer choice. Pleasure and pain are undoubtedly the ultimate objects of the calculus of economics (Jevons 1931, p. 37). Utility as such is a quantity of two dimensions – one consisting in the quantity of the commodity, and the other in the intensity of the effect produced upon the consumer (Jevons 1931, p. 47). He quantifies the degree of utility by the differential coefficient of u as a function of x and states the *principle of the ultimate decrease of the utility of any commodity*. In the case of a good which can be employed for two or more distinct purposes, Jevons argues that the distribution of the good is completed when the increments of utility Δu_1 , Δu_2 are equal (Jevons 1931, p. 60). An increment of the commodity would yield exactly as much utility in one use as in another; at the limit we have the equation $du_1/dx = du_2/dy$. This guarantees a distribution of x and y as the distribution offering the individual the greatest advantage.

Jevons generally avoids using the term *value*. He points out that the notion of value has an ambiguous and unscientific character (Jevons 1931, p. 76). It is commonly considered as value in use, or as esteem, i.e. the urgency to desire, or as a ratio of exchange. Jevons himself does not enter into a scientific investigation of the meanings of *value*. Instead he assigns to commonly used value concepts the following categories: to the value in use – total utility, to the value of exchange – an exchange ratio, and to the notion of esteem – a final degree of utility (Jevons 1931, p. 81).

VALUE AS THE RESULTANT OF TRANSFER OF THE IMPORTANCE OF A NEED ONTO THE GOOD

A point of departure of Menger's *Principles of Economics* is the assumption that the goal of economic activities is satisfaction of human needs. The satisfaction of needs is an imperative for each person. His efforts are directed toward complete satisfaction of his needs, or if that is not possible, toward their satisfaction to the highest possible

degree. Each person has his individual hierarchy of needs. Menger divides human needs into two classes: those essential for our life and those serving our well-being. The relative significance of each need for human well-being decides its position in the overall hierarchy of needs. Each person satisfies his needs by means of goods. According to Menger, *value* is the importance we assign to a good because we are aware that satisfaction of a need depends on command over the good in questionⁱⁱ. The value we attribute to a good derives from the importance of the need it satisfiesⁱⁱⁱ. In Menger's system *the value of a good* is the resultant of a *transfer* of the importance of a need onto the good that satisfies that need^{iv}. The more important the need appears to be, the more valuable the good is to an individual. Menger noticed that the importance we assign to particular goods depends also on the quantities at human disposal. Humans assign value only to economic goods i.e. rare goods; their loss would result in a need going unsatisfied. Uneconomic goods do not have value to the individual. If goods are in abundance, we do not attribute importance to them; the loss of such goods would not affect (reduce) the degree to which needs are satisfied.

Since needs are satisfied with acts, each successive act of satisfaction of a need, and consequently each successive unit of a good, is less important to the individual. A good's importance decreases as the need is satisfied to a greater and greater extent by that good. A person having at his disposal a certain quantity of a good, and recognizing the significance of the need it satisfies, assigns an appropriate value to the unit of the good that satisfies the least important need.

In other words, an individual who has at this disposal a scarce good that satisfies more than one need makes a choice between needs of higher and lower importance giving priority to the first. As a consequence the value of the good is the value of the unit which satisfies the least important need. Determination of the value always requires an answer to the question of which need would be left unsatisfied if an individual had a smaller quantity of the good than he has today. Each person would give up the need that is the least important to him, i.e. the good that satisfies his least important need.

As we see, Menger departed from the concept of utility as a fundament of value theory. The commodity value is not a property of the good itself; nor does it have anything to do with human preferences and human will. It is a human judgment on the importance of the good for human life and well-being, i.e. for the satisfaction of human needs^v.

On the issue of measuring value

Having introduced the basic assumptions of Jevons' and Menger's theories of values, let us recall their essential characteristics and implications (Table 1).

Jevons referred the economic question of a commodity's value to its utility. Value depends on the utility. The utility is an abstract quality of commodity which serves human purposes. It is, according to Jevons, the intensity of the effect produced upon the consumer (Jevons 1931, p. 47). A similar understanding of utility can be found in earlier works, among others those of J.S. Mill (1806–1873), J.B. Say (1767–1832) and E.B. de Condillac (1715–1780). Mill (1848) argued that utility is an inherent property of a good which serves the satisfaction of human need. In Say's treatise (1814) utility is a quality of a good that makes it desirable for each person. Condillac (1776) demonstrated that value is based on utility, on the need that is satisfied by a commodity or on the benefit (behoof) that a good provides. As we see, Jevons referred to the classical and pre-classical approach to utility. However, it should be noted that Jevons, in introducing the notion of utility as a property of a good, did not provide a scientific analysis of the nature of utility as a category of value. *Value* seems to be identical with the final degree of utility of a commodity. (...) It is measured by the intensity of pleasure or benefit which would be obtained from a new increment of the same commodity (Jevons 1931, p. 80). Jevons did not explain either the genesis or the essence of valuation. In his theory, utility is rooted in a

commodity's attribute. As a consequence, Jevons did not succeed in explaining what makes certain goods more useful than others, which factor or process determines the magnitude of the utility and eventually what makes each successive unit of commodity less useful than previous (as required by the law of diminishing marginal utility). This fact has had significant implications for the development of the theory of value in its neoclassical and mathematical versions. In the end, utility as a measure of value has vanished from the theory of economics; or if it formally exists, then only as a vague concept. Pareto introduced the notion of preference, assuming that an individual does not need to determine utility with cardinal numbers – instead he appoints the quantitative set of goods which are to him indifferent.

Menger developed a subjective theory of value without referring to the 'old' notion of utility. In Menger's theory, it is not utility that is the key concept. Goods themselves are worthless unless a human assigns value to them. For Menger, *value* belongs to the category of human judgment. It is a human judgment on the importance of a good for human life and well-being, i.e. for the satisfaction of human need. Each person satisfies his less or more important needs by means of goods. Consequently we assign those goods a certain importance, which can be called a value. The magnitude of the value depends on the relative rank of the need satisfied by the good and on the quantity of the good available to the person. A good's importance decreases as the need is satisfied to a greater and greater extent by that good.

Table 1
Jevons' and Menger's theory of value

	Jevons	Menger
origin	commodity	human
category	property/attribute	judgment
notion	total utility final degree of utility	value

Source: prepared by the author.

Menger viewed the theory of economics as a science related to human action which explores relations of cause and effect. Each person seeks to satisfy his needs while having at his disposal a limited quantity of goods. He assigns a certain importance to his needs, and then to the goods which are capable of satisfying those needs. It is assumed that each human being, having his individual (subjective) hierarchy of needs, assigns certain values to goods. The category of value is presented by Menger in terms of cardinal numbers. Cause-effect relations that have roots in human valuation – that is, human judgment on the importance of a good for human well-being –

exclude mathematics as a scientific tool. For this reason, we do not find in Menger's economics the concepts of optimization or maximization. Mengerian laws are derived by deductive methods and as such have a qualitative character. As we see, Menger's theory of value is not a non-mathematical version of marginal utility theory. Valuation cannot be the subject of measurement or any attempts at quantification.

Menger departed from the long-held assumption that value is derived from knowledge of the utility/the usefulness of a commodity. He showed that the notion of value cannot be derived

from the principle of utility taken as an inherent property of a good.

Table 2
Economic goods and non-economic goods in Menger's theory of value

	utility	value
economic goods	+	+
non-economic goods	+	-

Source: prepared by the author.

Menger used the notion of utility in a narrow, technical meaning, belonging rather to the theory of goods than to the theory of value. A commodity is useful if it satisfies human need. This ability is

defined by Menger as utility^{vi}. In that sense both economic and non-economic goods are useful (Table 2).

REFERENCES

- BLAUG, M. (2000), Teoria ekonomii: ujęcie retrospektywne, *Economic Theory in Retrospect*, Warszawa: Wydawnictwo Naukowe PWN.
- CALDWELL, B., ed. (1990). Carl Menger and His Legacy in Economics. History of political economy. Annual supplement; Vol. 22, London: Duke University Press.
- CONDILLAC, E. B. (1776). Handel i rząd w ich stosunku wzajemnym, *La commerce et le gouvernement considérés relativement l'un à l'autre*; w (in): Zawadzki, W. (1949): Wartość i cena, *Value and price*, Wypisy z dzieł autorów polskich i obcych, *Extracts from the works of polish and foreign authors*, Warszawa – Łódź: Wydawnictwo Kazimierza Rutskiego;
- JEVONS W. S. (1871). Theory of Political Economy, Reprint 1931, London: Macmillan.
- KRZECZKOWSKI, K. (1932). Próba rozgraniczenia pojęć wartości i ceny, *On the distinction between value and price*, Warszawa: Tow. Ekonomistów i Statystyków Polskich, t. 1.
- MENGER, C. (1871). Grundsätze der Volkswirtschaftslehre, Reprint 2010, Wien: Wilhelm Braumüller, Nabu Press.
- MENGER, C. (1871). Principles of Economics, Reprint 1950, Illinois: The Free Press, Glencoe.
- MILL J.S. (1848). Zasady ekonomii politycznej z niektórym zastosowaniem do filozofii społecznej, *The Principles of Political Economy with some of their applications to social philosophy*, w(in): Zawadzki, W.(1949), Wartość i cena, *Value and Price*, Wypisy z dzieł autorów polskich i obcych, *Extracts from the works of polish and foreign authors*, Warszawa – Łódź: Wydawnictwo Kazimierza Rutskiego.
- PĘCIAK, R. (2011). Subiektywna teorii ekonomii, *Subjective theory of value*, w (in): red. Zagóra-Jonszta U., Marginalizm zachodni, *On the marginal approach in western economics*, Katowice: Wydawnictwo Uniwersytetu Ekonomicznego.
- ROLSKI, M. (2014). Kategoria wartości w interpretacji trzech szkół ekonomicznych nurtu subiektywno-marginalistycznego, *A category of value in the interpretation of three schools of subjective (marginal) revolution*, w(in): red. Zagóra – Jonszta U., Podstawowe kategorie ekonomiczne w ujęciu wybranych kierunków myśli ekonomicznej: Kategoria wartości. Katowice: Wydawnictwo Uniwersytetu Ekonomicznego.
- SAY, J.B. (1814). Traktat o ekonomii politycznej, *A Treatise on Political Econom*, w(in): Zawadzki, W. (1949), Wartość i cena, *Value and price*, Wypisy z dzieł autorów polskich i obcych, *Extracts from the works of Polish and foreign authors*, Warszawa – Łódź: Wydawnictwo Kazimierza Rutskiego.
- VON WIESER, F. (1889). Der Natürliche Wert, *Natural value*, Wien: Alfred Hölder

ⁱ In further parts of his analysis Jevons argues that the notion of utility is related to human wants (Jevons 1931, p. 39). Utility, though a quality of things, is no inherent quality. It is better described as a circumstance of things arising out of their relation to man's requirements (Jevons 1931, p. 43). However, that line of argument was not further developed by Jevons.

ⁱⁱ (...) Es ist somit der Werth die Bedeutung, welche konkrete Güter oder Güterquantitäten für uns dadurch erlangen, dass wer in der Befriedigung unserer Bedürfnisse von der Verfügung über dieselben abhängig zu sein bewusst sind (Menger 2010, p. 78).

ⁱⁱⁱ Der Güterwert ist in der Beziehung der Güter zu unseren Bedürfnissen begründet, nicht in den Gütern selbst (Menger 2010, p. 85).

^{iv} Die Bedeutung, welche die Güter für uns haben, und welche wir Werth nennen, ist lediglich eine übertragene. Ursprünglich habe nur die Bedürfnisbefriedigungen für uns eine Bedeutung, (...), wir übertragen aber in logischer Konsequenz diese Bedeutung auf jene Güter, von deren Verfügung wir in der Befriedigung dieser Bedürfnisse abhängig zu sein uns bewusst sind (Menger 2010, p. 107).

^v Der Wert ist ein Urteil, welches die wirtschaftenden Menschen über die Bedeutung der in ihrer Verfügung befindlichen Güter für die Aufrechthaltung ihres Lebens und ihrer Wohlfahrt fällen und demnach ausserhalb des Bewusstseins derselben nicht vorhanden (Menger 2010, p. 86).

^{vi} Nützlichkeit ist die Tauglichkeit eines Dinges, der Befriedigung menschlicher Bedürfnisse zu dienen (...) (Menger 2010, p. 84).