

Two Marginal Principles and One Subjective Revolution

A Misesian View on the Marginal Revolution

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The position of the Marginal Revolution is so high in the typical history of economics that it is seen as the critical turning point of the *whole* history of economics. The reason, however, is not necessarily evident in view of the nature of mainstream economic theorizing of utility. Among the “triumvirate” of the Revolution, Jovons and Walras developed their arguments mathematically and this suggests an agent who finds the magnitude of satisfaction prescribed by the utility function. Menger, on the other hand, viewed the matter quite differently. While he did not formalize his own marginal theory so as to illustrate the fundamental difference from the other two, successors deduced from his view another type of principle which dominates our everyday exchanging activities.

The aim of this presentation is to formalize it in a concise manner, and provide a due reflection that scheme implies. Our approach is more theoretical than historical, which the nature of the problem necessitates. From Aristotle on, economic theoreticians have been in a serious trouble with respect to proper catallactics, and it was not before Austrian economists discovered it that mankind understood the way he evaluates the goods in real marketplace transactions.

I Two Evaluation Principles and Two Marginal Principles

There were two different types of evaluation principles in exchange: equivalent equilibrium exchange (EEE) and inequivalent reciprocal exchange (IRE) in the history of economics. Both originate from Aristotle, though he clearly was in favor of the EEE. What is important in relation to the utility theory is that these two evaluation principles suggest different marginal principles for each.

I.1 EEE and Its Last-Unit Marginal Principle

The EEE presupposes that we exchange goods when they are same in value. But what sort of value is it? As a matter of fact, this is the question yet to be settled, or, to be exact, yet to be *asked* in due detail to this day.

Suppose you have exchanged your twelve bananas for a partner's three apples today. The EEE describes that the value of twelve bananas is exactly same with that

of three apples. And a question arises: is that the exchange value or the use value? Yet the exchange value of a banana is one fourth apple, and that of an apple is four bananas. In other words, the price of a banana is .25 apple and that of an apple is four bananas. Are they same? If so, when you find another partner who gives you an apple in exchange of two bananas, and later, more fortunately, you encounter another who sells you an apple for a banana, then is an apple equivalent with four bananas and two bananas and one banana in the same day, henceforth four bananas are same with two bananas and even one banana? You can assume equality in any exchange this way, but it is this that nullify the notion of equality itself.

Instead, you may think that what is equal in the EEE is the use value. Let us formulate the problem in line with this view. You find a larger utility in the first apple than in the first set of four bananas, and so do in the second. Henceforth¹⁾,

$$UV(1^{st}A) > UV(1^{st}4Bs) \quad \dots\dots\dots (\alpha)$$

$$UV(2^{nd}A) > UV(2^{nd}4Bs) \quad \dots\dots\dots (\beta)$$

Because total utility is supposed to be the sum of marginal utilities, 'UV(1stA) + UV(2ndA)' equals to 'UV(2As)', and with respect to the third unit:

$$UV(3^{rd}A) = UV(3^{rd}4Bs) \quad \dots\dots\dots (\gamma)$$

You have the following equation as you total the each sides of (α), (β) and (γ):

$$UV(3As) = UV(12Bs) \quad \dots\dots\dots (\delta)$$

For (γ) and (δ) to realize, the good in question should be highly divisible. This is why mainstream economists assume infinite divisibility in the given good. Historically, Irving Fisher (1867-1947) sought this path by introducing such goods as petroleum and flour (Fisher 1925).

In the 3As-12Bs exchange, you find the utility²⁾ of the first apple is larger than that of four bananas, but the third apple brings to you exactly the same utility with four bananas do. This is how the EEE calls for what we dub the marginal principle of the *last unit of non-defined amount of goods* ("last-unit marginal principle" in short).

Nevertheless, there remain some unsettled questions: if the given good is not so highly divisible or it has physical nature that the division itself undermines the marketability of it, should we apply another principle?; if so, what is it? But this shortfall is far less important than another: why do you exchange the goods whose use values are one and the same at all?

I.2 IRE and Its Relevant-Unit Marginal Principle

It was this question that Carl Menger (1840-1921) asked. In everyday transactions, we never care such an equality to realize. Menger was quite conscious of this. He developed an entirely different theory on the basis of what we name the “pure qualitative utility theory: PQUT.” But his presentation was unfortunately misleading for the numerical settings. Two models are well known that represent his theory on marginal utility: i) cow-horse trade between isolated farmers and ii) competitive model under a monopolistic supplier assumption³.

A farmer S with six cows and one horse goes to a marketplace to buy horse for cow: another T with six horses and one cow, to buy cow for horse. And numerical utility schedule is given as table A. S finds 50 of utility in the first cow, 40 in the second, ·····, and zero in the sixth; the only horse is evaluated as 50. As for B, the schedule is reversed. Trade proceeds one by one. After the first trade, their schedules will be as B, and after the second, C. If trade were to continue for five times, their schedules would be as F, which shows the other farmer’s initial cattle portfolio.

Utility Table			
Mr. S		Mr. T	
C	H	C	H
50	50	50	50
40			40
30			30
20			20
10			10
0			0

Utility Table			
Mr. S		Mr. T	
C	H	C	H
50	50	50	50
40	40	40	40
30			30
20			20
10			10

Utility Table			
Mr. S		Mr. T	
C	H	C	H
50	50	50	50
40	40	40	40
30	30	30	30
20			20

Utility Table			
Mr. S		Mr. T	
C	H	C	H
50	50	50	50
40	40		40
30	30		30
20	20		20
10	10		10
0	0		0

A. Before

B. First Exchange

C. Second Exchange

F. Fifth Exchange

Mengerian Table

Menger 2007, 183-186

Menger asks, how many times would the trade take place when two farmers act *economically*? Two times only. When home, the total utility of both was 200. After the first trade, it increases to 240, and after the second, 260. But after the third, it remains 260. Hereafter the number decreases, but what is important is that he seems to set these tables *deliberately* so as to equalize the second with the third in utility and to deny the third to occur. Here he says in the note:

I classify indifferent exchanges such as this as definitely *non-economic* since in them the provident activity of men is set in motion *aimlessly* quite apart from all the economics sacrifices they may entail. (Menger 2007, 185.n—italics mine)

It is superficial at best to think he believed that these numbers really represent the utility of each of the cattle. Rather, these are simply hypothetical samples to

show that equalization worth nothing. The EEE gives no theory of utility in real and feasible exchange. We exchange not because we find equality in use value or utility, but because we see inequality in it. We may name this the *antinomy of exchange and equivalence*: equality never causes exchange⁴).

Ludwig von Mises (1881-1973) inherited this view. When he restated it in the pathbreaking *Theory of Money and Credit*, however, Mises used no cardinal utility. You can exchange three pears for two apples without any knowledge of the exact utility of each. You have only to know that the latter is higher than the former in utility. And the proportion of utility has nothing to do with the rate of exchange, because the utility you find in two apples is *not same with*, but *higher than* that of three pears, and it is *needless and impossible* to know how much higher.

The judgment “Commodity *a* is worth more to me than commodity *b*” no more presupposes a measure of economic value than the judgment “*A* is dearer to me…… than *B*” presupposes a measure of friendship. (Mises 1980, 58)

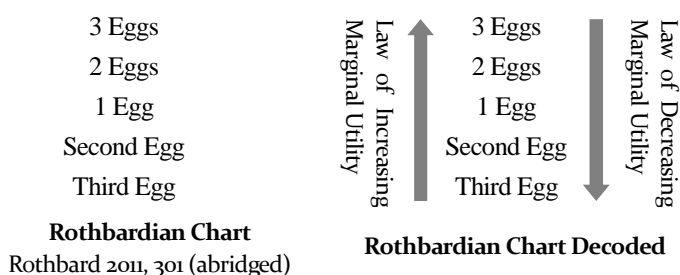
In the trade above, the utility magnitude of each is not the sum of smaller unit, for we evaluate the utility of two apples as one.

The person making the choice does not have to make use of notions about the value of units of the commodity. His process of valuation …… is an immediate inference from considerations of the utilities at stake. When a stock is valued as a whole, its marginal utility, that is to say, the utility of the last available unit of it, coincides with its total utility, since the total supply is one indivisible quantity. (Mises 1980, 60)

This view was more accurately formulated by Murray N. Rothbard (1926-95).

In human action, “marginal” refers not to an infinitely small unit, but to the *relevant* unit. Any unit relevant to a particular action is marginal. (Rothbard 2011, 300)

He drew a chart to show the essential feature of this view, in which total utility has no place for it is shown as the marginal utility of enlarged amount of goods.



As a matter of fact, there is no such thing as “total utility” because the economic good you pay attention to at a particular time is total all the time. This totality is marginal. When you buy a pack of four apples in a supermarket, do you summate the marginal utilities of each? If so, how to? Now we call this type of theory the marginal principle of the *relevant unit of the defined amount of goods*, or the “relevant-unit marginal principle” in short.

II Integration of Austrian Utility Theories

But a question remains: what is the relationship of the Misesian-Rothbardian theory to the Mengerian? The clue can be found in a further development of the Rothbardian view. We rewrite the Mengerian Table with the help of the Rothbardian Chart. This task is very easy. Although we can make this ranking table without numbers, they help understand the Austrian idea of utility. We may conclude that the Mengerian Table is presented simply as a classroom tool to let the students know the essence of the relevant-unit marginal principle with *tentative* numbers put on each goods.

6 Cows	150
5 Cows	150
4 Cows	140
3 Cows	120
2 Cows	90
1 Cow	50
2 nd Cow	40
3 rd Cow	30
4 th Cow	20
5 th Cow	10
6 th Cow	0

Integrated Austrian Utility Exhibit

A Mengerian farmer, who knows his utility schedule, is able to imagine beforehand how many cows he should exchange. And if he finds a partner, he can buy two horses for two cows in one exchange, valuing two horses and cows as one. His evaluation, therefore, can be seen as based on the relevant-unit marginal principle. And this can be done without knowing the digital utility distribution of respective cow and horse. Thus numerically presented schedule is known to be transformed into non-numerical, PQUT-type ordinal ranking. Now we need no numbers. And this is the way we evaluate things every day.

III Revolutionary Margin of Marginal Revolution

The aim of the Marginal Revolution was to subjectify the economic system departing from the Classical objective tenet. But what does “subjective” mean at all? If marginal utilities are to be summed up into total utility in a uniform manner, you have to obey it every time you buy something. While you buy it because you have some purpose in mind, you are not allowed to evaluate as you like. This is least subjective. It is rather a predestinated subjectivity, or an embedded subjectivity bound to the mathematical straitjacket. Math does not go along with rationality in

the sphere of economic action. You need not attach numbers on each quantity of goods because you are able to know the value *difference* between them in so simple a manner that even kids can do without instruction. This is how Brentanian active psychology, or science of human mind in action, is inherited all the way from *fin-de-ciècle* Vienna to the present day United States and the world. Humans are so made as to evaluate this way, not otherwise.

Now we should define the term “subjective” as *optionality*. You may not only find any magnitude of utility in anything but change it as your aim differs, in which the conception of optionality consists. This freedom of action assures you of liberty. And this is what the Austrian economics is all about. The Marginal Revolution left a revolutionary margin because of the flight to *indifference* in exchanging activities without proper proof by easily presupposing the last-unit principle and absent equality. In so doing, the mainstream economics failed to subjectify the whole edifice of economic science. We are left with a “subjective irrevolution” in 2016 within the last-unit framework. There were two marginal principles, but there was only one subjective revolution. And it was accomplished by nobody else but the Austrian econmists⁵⁾.

Notes

- 1) ‘UV(1stA)’ shows ‘use value of the first apple,’ and ‘UV(1st4Bs)’ is that of the first four bananas
- 2) We define utility as same with the use value in this context.
- 3) The second model is omitted here.
- 4) In recent studies a fact has been formulated that Menger introduced the ethics of Franz Brentano (1838-1917) who established a new psychology of active construction of objects around human being (e.g. Smith 1994). Brentano thought that we tend to rank object even with “love and hate” in mind. Mengerian economics is said to be an application of this theory on our mental custom to economic actions.
- 5) For an attempt at reconstructing the microeconomics on the basis of realistic goods-money catallactics, see my article, Murai 2015.

Selected Bibliography

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