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A HISTORICAL NOTE ON THE ORIGINAL MEANING OF METAECONOMICS

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Abstract. This is a brief note on the original meaning of the term "metaeconomics" that was coined in 1936, in Vienna, by the mathematician Karl Menger. He was involved in the Viennese debate on the relation between mathematics and logics. As he was a strong supporter of Hilbert's program, he applied it to social sciences (economics and ethics in particular) in order to find their logical structure. From the point of view of the history of economic theory, Hilbertism was the philosophical framework of the following economic mainstream, i.e. the neoclassical approach. In neoclassical economic theory, there is no place for moral considerations and ethics remained strictly separated from economics. Contemporary behavioural economics considers metaeconomics as a tool for re-embedding ethics into economics, this is an example of the so-called "heterogenesis of the aims".

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Reikšminiai žodžiai: metaekonomika, Mengeris, Hilberto nuostata, etika.

1. Introduction

The actual debate on metaeconomics involves many fields and spreads upon different methodological approaches. The introduction of the term *metaeconomics* is due to the mathematician Karl Menger (1902-1985). In 1936 he wrote an article on the law of diminishing returns on land, under a suggestion of a famous economist of the Austrian School, Ludwig von Mises. Menger clearly stated that metaeconomics is an application of the Hilbertian program on economic theory. Today metaeconomics has many connotations (Buracas 2004). I will focus my attention on that meaning according to which it is regarded as "an economic approach that makes ethics and the moral dimension explicit in economic reasoning" and "in contrast to (neoclassical) microeconomics proposes to reintegrate ethics and economics" (Buracas 2004, 3): this approach is the one of the so-called behavioural economics (Lynne, 2003). The aim of this short note is to show that if today metaeconomics has reached this kind of intent, then there was a sort of heterogenesis of the aims as it was conceived by Menger, whose aim was to apply a metamathematical model *à la Hilbert* to economic theory in order to free economics and ethics (generally speaking regarded as social sciences) from logical mistakes.

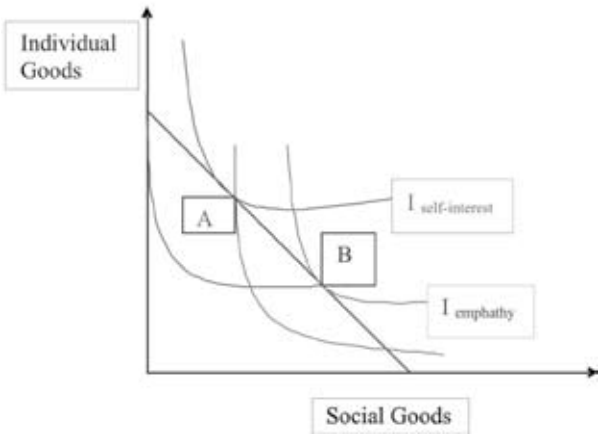
2. Metaeconomics as a tool for embedding ethics into economics

According to Lynne (2006) metaeconomics is to be intended as a way for going beyond economics: i.e. a way to recognize that there are people oriented not in self-interest, but in the other-interest; metaeconomics approach is oriented to integrate individual and social plans. In this sense it is a form of behaviour economics. Metaeconomics is regarded as a tool for resolving conflicts between egoistic and altruistic behaviours: it is able to satisfy simultaneously ego

and empathy; moving back and forth on a path where any point could or maximize individual interests and satisfy empathetic interests, or vice versa.

Lynne describes metaeconomics model as follows:

$I_{self\text{-}interest}$ and $I_{emphathy}$ are isocurves that represent respectively individual interests and empathetic ones: A is the point in which an agent maximizes his individual interest and satisfies his empathetic one; B is the point in which an agent maximizes his empathetic interest and satisfies his individual one.



Moving back and forth on his own isocurves, an agent can alternatively maximize both self and social utility: "metaeconomics value arises from the co-evolutionary (through time, and thus dynamic) interaction and feedback between ego and empathy, self-interest and other-interest, as each conditions and influences the other" (Lynne 2006, 639). Summing up, according to Lynne, metaeconomics is a tool able to reintegrate egoistic motivation of behaviour into altruism and vice versa.

The present note is not focused on going inside Lynne's model in order to verify and/or criticize it; it is a presentation, mainly from an historical point of view, of how Menger applied metatheory to social science during the 1930s, in order to contextualize his introduction of metaeconomics inside the economic theory. Menger's aim was very far from reintegrating ethics into economics. An intent conceived in such a way would have left Menger outside the mainstream economic theory. On the contrary, Menger can be regarded as one of the pioneers of mainstream economics, because he applied Hilbertian metatheory to economics and ethics in order to show the proper way for describe social dynamics without any logical fallacy. When he coined the term "metaeconomics" he did not think of a sort of reintegration of ethics in economics; he was thinking of modelling economics and ethics as well into a coherent logical pattern, without any connections between them.

3. The very beginning of metaeconomics

Menger's adherence to Hilbertism is fundamental in the history of economic theory, because it was the methodological paradigm shared inside his Mathematical Colloquium, where scientists such as Abraham Wald and John von Neumann introduced neowalrasianism into the neoclassical theory, firstly through the formalization of the theory of the General Economic Equilibrium by Schlesinger, Wald and von Neumann, and thereafter of the Theory of Expected Utility by von Neumann and Morgenstern (Weintraub, 1983, 2002). In this sense metaeconomics is strictly connected to neoclassical economic theory.

3.1 The exact thinking in economics

As it is well known, logic deals with the validity of the argument of a proposition and with the degree of truth of propositions. An argument is a set of propositions formed by two premises and a following conclusion. Validity and truth are connected: an argument is valid when, if the premises are true, the conclusion cannot be false. Logicians just deal with the validity of an argument without any regard to other proprieties of an argument (such as utility or persuasion). A valid argument can be formed by false propositions; when a valid argument is formed by true premises, then it is correct.

Menger was engaged in the debate around logics and mathematics that spread in Vienna during the interwar period. Firstly interested in intuitionism (he worked with Brouwer during he mid 1920s), he became a strong supporter of Hilbertism during the 1930s. He tried to apply the Hilbertian model of metalogics to ethics (Menger [1934] 1974) and economics (Menger [1936] 1979) and he coined the term "metaeconomics": "following a suggestion of Hilbert, modern logicians refer to the study of the logical relations between the statements of a theory as the corresponding *meta-theory*. In this terminology, the contents of the present paper can be described as a chapter in *metaeconomics*" (Menger 1979, 280)[1]. He wrote the paper in answer to Ludwig von Mises's claim "that certain propositions of economics can be *proved* [and] as an example he mentioned the law of diminishing returns" (Menger 1979, 279).

1 In 1936 Menger published "Bemerkungen zu den Ertragsgesetzen", which was translated in English in 1954 as "Remarks on the Law of Diminishing Returns. A study in Meta-Economics" (Becchio 2008).

According to Menger, economists tried to find the logical relations between laws about returns and other propositions of economic theory (such as the theory of value) from a logical point of view based on deduction, but they ignored the incontrovertible fact that any kind of scientific proof requires logical sequences of (inductive) inferences. Moreover economists use often badly logical quantifiers. This two kind of inaccuracies, from a logical point of view, often led economists toward confusion between the validity of an argument and its truth. Menger criticized also the fact that economists are mainly worried about the empirical confirmation of the laws they formulate, without caring enough of the correctness of their logical argumentation.

As an example, Menger considered the law of diminishing returns to land first formulated by Eugen Böhm-Bawerk: "additional applications of capital and labor on a piece of land increase the total product, but after a certain point this output increases relatively less than further costs. In other words: like increases of cost produce a decreasing increase of the product" (Menger 1979, 281). It should be referred to diminishing product increments for large outlays. When it is referred to average product for large outlays, "it can be shown by elementary algebra that one satisfies the law of diminishing product increments, but not that of diminishing average product" (Menger 1979, 282). Economists considered as equivalent the two propositions of diminishing product increments and of diminishing average product and they call them "the law of diminishing return"; but according to Menger "hence far from being equivalent, neither of the two laws implies the other" as it can be shown "by elementary algebra and by "simple geometric interpretation" as well (Menger 1979,. 282).

Moreover, Menger analyzed the fact that "all so-called proofs of the laws of return ... use the assumption that the input factors of production are economic goods. However, *the economic character of the inputs bears no relation to the question of whether the product increments are non increasing*. Without superadditivity and subhomogeneity of the production function, the law of non increasing product increments need not hold even if the inputs are economic goods. On the other hand, if the product function is superadditive and subhomogeneous, the law does not hold even for non economic inputs" (Menger 1979, 299).

Menger's conclusions are focused on the fact that it is necessary not to mix the logical interrelations (deductive and inductive) among the statements of a scientific law and the empirical validity of the law itself: "how the various propositions are related, which ones are consequences of others – these and similar questions are purely logical and have nothing to do with experience" (Menger 1979, 300).

3.2 The exact thinking in ethics

Menger tried to apply Hilbertian metatheory to ethics as well (Menger 1974; 1983). He proposed a general criterion for explaining how to form cohesive social groups, i.e. peaceful groups able to share the same norms. It is a formal ethics (i.e. there are no values hierarchically ranked), logically explained and very far from any normative approach. Menger tried to show how cohesive groups are formed and are able to share the same rules in order to find logical relations among precepts and to reach "an exact thinking in the field of ethics" (Menger 1974, 95), i.e. to apply "*logico-mathematical* thinking to ethical material" (Menger 1974, 97).

According to Menger the adoption of a moral code is an individual decision, but an exact thinking in ethics could be applied to "the treatment of social problems" (Menger 1974, 97), i.e. to the dynamics of social groups. Menger presented a model made by two *disjoint* groups (G_1 and G_2). Any member has four possibilities to associate himself with others: he can associate just with members of his own group (G_1^1 and G_2^2), or just with members of the other group (G_1^2 and G_2^1), or with everybody ($G_1^{1,2}$ and $G_2^{1,2}$) or with nobody (G_1^0 and G_2^0) . These four attitudes applied to G_1 and G_2 lead to eight subgroups. Each member of any subgroup is a singleton.

Relations among the eight subgroups can be described as this matrix shows:

	G_1^0	G_1^1	$G_1^{1,2}$	G_1^2	G_2^2	$G_2^{1,2}$	G_2^1	G_2^0
G_1^0	–	0	0	0	0	0	0	0
G_1^1	0	1	1	0	0	α	α	0
$G_1^{1,2}$	0	1	1	α	α	1	1	0
G_1^2	0	0	α	1	α	1	1	0
G_2^2	0	0	α	α	1	1	0	0
$G_2^{1,2}$	0	α	1	1	1	1	α	0
G_2^1	0	α	1	1	α	α	1	0
G_2^0		0	0	0	0	0	0	0

α = members of one of the group are willing to accept members of the other group, but not vice versa.

1 = totally compatible;

0 = totally incompatible;

"G_1^0 and G_2^0 are "hermit groups"; one member of G_1^2 and one member of G_2^1 are "singular pairs" (compatible); one member of G_2^1 and a subgroup of $G_1^{1,2}$ (and one member of G_1^2 and a subgroup of $G_2^{1,2}$) are defined "centered groups"; $G_2^{1,2}$ and $G_1^{1,2}$ are tolerant; G_1^1 and $G_1^{1,2}$ (and G_2^2 and $G_2^{1,2}$) are "pure groups"" (Menger 1974, 100).

G_1^1, G_2^2, $G_1^{1,2}$ and $G_2^{1,2}$ are cohesive. There is a difference between (G_1^1; G_2^2) and ($G_1^{1,2}$; $G_2^{1,2}$). Members of the (G_1^1; G_2^2) shared the same rules, there is a sort of internal cohession, but nobody is willing to share norms with member of the opposite groups: they are closed; on the other hand, every member of the ($G_1^{1,2}$; $G_2^{1,2}$) is willing to associate with any member of the other groups.

Having built a logical-formal pattern for describing how peaceful social groups are formed, we would better come back to the initial definition of G_1 and G_2: "if [they] consist of the members of two faiths, then the groups G_1^2 and G_2^1 are empty. If the members are of two different nationalities, then there may also exist snobs belonging to G_1^2 or G_2^1. If G_1 and G_2 are the men and the women at a party, then, with respect to the association of dancing, all four cohesive fundamental groups are empty. The only cohesive groups are singular pairs (dancing couples), hermits (non-dancers), and other singletons (wall flowers of either sex)" (Menger 1974, 101).

Summing up, when Menger spoke of a logic of ethics he was referring to social dynamics of groups able to reach coexistence and cohesiveness; any value judgement was dismissed and any consideration on individual choice was avoided: it was a logical description of the ethics of social groups, confined to facts "to describe and to order them without saying anything about foundation or justifications" (Menger 1974, 2).

Concluding remarks

Since the introduction of the term *metaeconomics* by Menger (1936), its meaning shifted towards different connotations. Generally speaking, it can be regarded as the logical and semantic aspects of the "analysis of the taxonomical contents of economic methods and criteria" and of "the nature of economic concepts" (Buracas 2004, 2).

When Menger introduced this term for the first time he had clearly in mind the application of the Hilbertian program to economics, i.e. its axiomatization into a strictly logical pattern. It was a methodological project that soon led economic theory to the foundation of the neowalrasianism approach in the general economic equilibrium model and to the formulation of the theory of expected utility (Weintraub 1983; 2002). These results are very far from the interpretation of metaeconomics as a form of reintegration of ethics and economics made by behavioural economics.

References

1. Becchio, G. The Complex Role of Karl Menger in the Viennese Economic Theory. *Review of Austrian Economics.* 2008, 21: 61-79.
2. Buracas, A. On Paradigm of Metaeconomics: Essence and Sense. *Management of Organizations: Systematic Research.* 2004, 54:1-12.
3. Lynne G.D. Toward a dual motive metaeconomics theory. *The Journal of Socio-Economics.* 2003, 35: 634-651.
4. Lynne G.D. On the Economic of subselves. Toward a Metaeconomics. *Handbook of contemporary behavioural economics. Foundation and Developments* (Morris Alta med.) New York, Sharpe, 2006, p. 99-122.
5. Menger K. An Exact Theory of Social Groups and Relations. *The American Journal of Sociology*. 1938, 5: 790-798.
6. Menger K. *Morality, Decision and social organization toward a logic of ethics*. Dordrecht and Boston: Reidel Publishing Co., 1974.
7. Menger K. *Selected papers in Logic and Foundations, Didactics, Economics*. Dordrecht and Boston: Reidel Publishing Co., 1979.
8. Weintraub, E. R. On the existence of a competitive equilibrium: 1930 – 1954. *Journal of Economic Literature.* 1983, XXI: 1-39.
9. Weintraub, E. R. *How Economics Became a Mathematical Science*, Durham: Duke University Press, 2002.

ISTORINĖS PASTABOS DĖL ORIGINALIOS METAEKONOMIKOS PRASMĖS

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Santrauka. Trumpai apžvelgiama originali *metaekonomikos* termino, 1936 m. įvesto Karlo Mengerio, reikšmė. Jis įsitraukė Vienoje į diskusijas dėl matematikos ir logikos sąsajų. Jis domėjosi Hilberto programa, todėl pritaikė metaekonomikos sampratą socialiniams mokslams (konkrečiai, ekonomikai ir etikai) siekdamas išryškinti jų loginę struktūrą. Hilberto nuostatos buvo tuo metu plėtojamos neoklasikinės teorijos filosofinis pagrindas. Šioje economikos teorijoje atsisakyta moralinių bei etinių nuostatų ir jos griežtai atskirtos nuo ekonomikos. Šiuolaikinėje bihevioristinės ekonomikos koncepcijoje metaekonomika vertinama kaip priemonė vėl integruoti etiką į ekonomikos teoriją. Tai akivaizdus vadinamosios tikslų heterogenezės atvejis.

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