UTILITY OVER TWO CENTURIES

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Abstract

Utility has been an economic concept since late nineteen century. J.W. Jevons who is with his "Economy as a Calculus of Pleasure and Pain" considered one of founders of neoclassical theory, declared his inspiration with Jeremy Berthaus Utilitarism. Since the very beginning the Berthaus concept what was originally complex social phenomenon with developed internal structure, by economists has been simplified to, their words, economic content, it means to simple consumption of material goods. Jevons along with his contenporaries and early followers consciously underwent the simplification to comply with the requirements for the economics as a mathematical theory, as "physics of society". He needed for his theory an easy abstract concept comparable with universality of Theory of Gravity.

Despite the original neoclassic economists considered their theories complete, the principle of utility maximization which was later named rational consumer choice has become subject for later unflagging neoclassical development . The paper aims to remind simplicity of original neoclassical utility maximalization principle in conceptions of founders of neoclassical theory (Jevons, Menger, Mill, Wallras, Marshall) in contrast with new utility theory and to point out that the principle is meaningful as long it is seen in original abstract form. The utility itself cannot be a research subject for mathematical approach to economics (Walras). It must be seen in institutional context and analysed using adequate method of social sciences.

Key words: utility, utilitarism, neoclassical economy

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Introduction

Homo Economicus concept generally understood as a model of an agent acting rationally with the aim of maximizing the utility is unambiguously the main source of dispute with the representatives of neoclassical economic theory (Džbánková, 2015). The two pillars of this dispute include „rationality“ of an economic man perceived as an ability to assess all available options of how to achieve maximum utility which results in the bounded rationality concept (Simon 1955). Secondly, it is a generally accepted notion that a utility-maximizing economic

man pursues their selfish wants which are in contradiction to the interests of society. This prerequisite is subsequently refused as unreal and unacceptable at the same time (Etziony, 1995).

The aim of my paper is to verify the justness of these disputes by confronting them with the original formulations by neoclassical economists – founders and their latter day followers. I am not aiming at providing a complete historical overview and therefore the process is not governed by time but by logical sequence.

1 Utilitarism

The term „utility“ is not of economic origin. Jeremy Bentham is generally considered the founder of utilitarism as a philosophy, although J.S.Mill considers himself an author of this term. Bentham considers achieving pleasure the only natural incentive of human behaviour. He namely says: "Nature has placed mankind under the governance of two sovereign masters, pain and pleasure. They alone point out what we ought to do and determine what we shall do the standard of right and wrong..." In connection to that, utility is defined as the property of something whereby it tends to produce benefit, advantage, pleasure, good or happiness or on the contrary reduce pain, evil, or unhappiness. If an individual is a part of a community, then a sum of the benefits achieved by individuals forms the benefit of the community. (Bentham, 2000)

The understanding of achieving benefit of an individual as a factor defining what is good and what is bad and community benefit as a sum of individual benefits can be perceived as radical individualism. If we understood Bentham’s definitions like this, we would rip them out of their context of utilitarism as a moral science. An individual is understood as a community member and their benefit as a social phenomenon. The thesis will be dealt with in more detail in the comments to the works of his followers. In this place Bentham’s classification (incomplete) of the kinds of pleasures might be used for illustration. The kinds of pleasures are: 1. The pleasures of sense, 2. The pleasures of wealth, 3. The pleasures of skill, 4. The pleasures of amity, 5. The pleasures of a good name, 6. The pleasures of power... (Bentham, 2000). While the first two correspond to our conventional perception of maximizing individual utility of a single person, the others are unambiguously connected with the individual’s engagement in a community and they have their ethical and moral dimension. A selfish person probably achieves pain of amity instead of utility of amity as utility and pain are symmetrical in Bentham’s conception. In this

sense we then understand that the amount of community utility as a sum of individual utilities depends not only on the fulfilment of selfish interests of its members but also on their behaviour to other community members, i.e. on their morality and ethics. According to Bentham, the amount of each pleasure or pain then depends on 1. Its intensity, 2. Its duration, 3. Its certainty or uncertainty, 4. Its propinquity or remoteness, 5. Its fecundity, 6. Its purity and 7. Its extent depending on the number of individuals concerned.

J.S. Mill in his non-economic work Utilitarism focuses his attention on the relationship between individual and community benefit rather than on the achievement of individual utility; according to Janíčko and Janíčko, his greatest contribution to the utility theory was the division of wants basic and secondary ones (Janíčko, 2014). This is because he emphasizes that when assessing utility, we have to consider not only its quantity but also its quality, just like with other things. Utility is a material and immaterial benefit of which we cannot measure only intensity and duration but also its quality. Mankind satisfies greater wants than animals; the human wants have various levels (a man will not voluntarily become a pig, a smart person will not turn into a stupid person and an educated man will not become uneducated). (Mill, 2011)

In my point of view the most important part of Mill's concept of utilitarism is the purely explicit delimitation of its basic principle, namely that individual happiness is the source of happiness of the whole due to the fact that it is in human nature to perceive the happiness of others as a part of one's own happiness. In other words, utilitarism is not based on moral standards but on moral feelings. Doing good does not aim at the welfare of others but at one's own welfare which is a part of the common welfare. (Mill, 2011). With this formulation the selfish Homo Economicus concept goes up in a wisp of smoke. In conformity with Mill we can remark that if the critics do not like the fact that the purpose of human existence is „merely" the welfare of mankind, they do not understand the nature of welfare. It includes morality, education, regard for further generations, etc.

Mill also uses the term „rationality" in connection with utilitarian behaviour. Rational means utilitarian, i.e. behaviour leading to achieving utility in accordance with the previous definition. With regards to Mill's concept of utilitarism Sidgwick emphasizes the necessity to distinguish utilitarism from egoistic hedonism as a difference between theses: each ought to seek his own happiness' and 'each ought to seek the happiness of all'. Utilitarianism directs us to make the number of happy people as large as we can without lowering the average level of happiness [...] Utilitarianism prescribes as the ultimate end of action, happiness on the whole, not any individual's happiness except considered as a part of the the whole. (Sidgwick,1907)

We can say that Sigwick's concept of utility highlights its social aspects even more. It perceives individual welfare as a part of welfare of all whereas " it's still not quite determinate who the morally relevant 'all' are. How far we are to consider the interests of posterity when they seem to conflict with those of now-existing human beings?" (Sidgwick, 1907)

He considers utilitarian behaviour rational and moral; in contrast to that he places hedonic behaviour pursuing individual welfare on one side and intuitive behaviour whose consequences are immediate, not a result of calculus on the other. Rationality expects that all pleasures included in our calculation can be compared quantitatively with one another and with pains (Sidgwick, 1907). It is good to notice that his rationality does not expect calculation of all possibilities which the world offers but only those that the agent considers.

Sigwick's theory is explicitly normative and as its climax Sigwick formulates the basic hypothesis of utilitarism as a harmony between one's own interest and duty. This unsubstantiated hypothesis should be subjected to further inquiry of philosophy and moral sciences.

2 Utility in the Original Neoclassical Concept

Before we start investigating utility in neoclassical concept, we have to remind ourselves that the common ambition of late 19th century neoclassical economists was to use mathematical tools to turn social science into science. They likened the importance of economics for the society to the importance of physics for natural sciences. The use of mathematical tools called for substances which the tools could be applied on. Perceiving economics as a quantum science brings J.S. Mill from utilitarism to the statement that political economy, "has nothing to do with the consumption of wealth, further than as the consideration of it is inseparable from that of production, or from that of distribution "(Mill, 1909).

W. S. Jevons did not agree with this opinion. Although he was sure that mathematical approach is a prerequisite for scientism in economy, he was concurrently the first or one of the first who shifted the attention of economics to the consumer and he is often considered the founder of utilitarian approach to the value determination and marginal utility (degree of utility in his terminology). He attempted to treat Economy as a "Calculus of Pleasure and Pain" with emphasis on the word calculus. In the same sense in which physical science is based on general principles of mechanics, economy is based on analogical general principles: self-interest and utility. (Jevons, 1888).

He professes to have been inspired by utilitarism (namely Benthaus), however the purpose of economy leads him to reduce the utility to physical pleasure: "It is lowest rank of feelings which we here treat" as "The calculus of utility aims at supplying the ordinary wants of the man at the least costs of labour". He distinguishes between physical feelings and "mental and moral" ones, i.e. higher feelings which he perceives as a superstructure of the economy; he pays special attention to the relationship between economy and ethics which, in his opinion, cannot be a subject of scientific (meaning mathematical) research.

In his effort to turn human feelings into a required "physical" substance - amount of feelings which is continually prompting us to buying and selling, borrowing and lending, aware of the fact that men will ever have the means of measuring directly the feelings of the human heart and that a unit of pleasure or of pain is difficult even to conceive (Jevons, 1888). To him utility is a quantity immeasurable in its absolute size, constant at the given moment and shifting in time which can be used for mathematical approach using marginal analysis if a man is able to compare its intensity and duration to the intensity and duration of other pleasures and pains.

In Jevons‘s approach the utility thus becomes a universal, relatively measurable substance. Comparison of this utility (Pleasure) with the costs of labour (Pain) is the basis for deriving balance in barter exchange. Jevons thus deals with universal market outside time and space in conformity with his conception of the existence of general principles, economic behaviour with complete awareness of the degree of abstraction to which it shifts with full awareness of the fact that "real motives and conditions are so numerous and complicated, that the resulting actions have the appearance of caprice, and are beyond the analytic powers of science" (Jevons, 1888).

I consider Walras’s concept closest to Jevons’s concept of utility. Walras stepped over the borders of neoclassical economy with his political and social visions; he aspired to the Nobel Peace Prize persuaded that his general equilibrium theory in connection with the state ownership of land can solve the social problems of mankind. He is considered pure neo-classicist in the field of economic theory. It is true that his concept of utility and rationality is closest to its current majority interpretation but not even in his case this interpretation can be accepted without reserve. Walras differentiates between pure, applied and social economics. Pure economics is a science for him (in the sense of analogy with physics). For the sake of science the agent maximizes the function of utility without explaining what exactly it means. The maximization of utility is a manifestation of will and is not a subject of pure science. Pure science cannot examine the utility but only the results of its achieving. Science presumes perfect conditions, whereas in reality they do not exist. We have never attempted to predict decisions

made under conditions of perfect freedom, we have only tried to express the effects of such decisions in terms of mathematics.(Walras, 2000). Concurrently, as Mirrowski highlights, Walras sees the perception of man as an organized body which seeks utility as a unilateral liberal perception which can be applied to the industry field only (Mirrowski, 1989). Walras aims for synthesis with the perspective of socialists who on the contrary perceive man purely as a "rational soul" who is guided by criterion of justice "the good" and can be applied to relations of persons to persons. (Walras from Mirrowski). Even Walras is thus aware of the limitation of mathematical view of economic behaviour of man and commits conscious abstraction.

Paralelly with Jevons, Gossen also comes up with the marginal utility theory (Sirůček, 2015). Even he highlights analogy with physics (particularly Newton's Theory of Gravity) and Copernicus's astrology. He considers himself the first to use mathematical tools in economics. His three laws rank among the most cited principles and they are present at every microeconomics textbook. Nevertheless, Steiner gives much more comprehensive attention to his work; he deals not only with the marginal utility theory but also with Gossen's perception of utility itself (Steiner, 2011). Gossen's approach to economics is idealistic, the force that brings a man to long for utility comes from the Creator: In the same way He (Creator) established order among His worlds [the planets, through gravitation and its law], He has established order among His human beings [...] In this way, He made sure that once man comprehends the laws pertaining to the operation of this force, every individual concerned exclusively with his own personal welfare must bend his efforts to the benefit of all men. Utility is the prime ordering law of humanity (Gossen from Steiner, 2011). Thus in full conformity with utilitarists he perceives achieving individual utility as achieving utility of the whole, egoism is therefore made the behavioural principle of the individual, for that individual and also for the entire human collectivity – this totalising vision of humanity is one of the characteristics of Gossen's thinking. (Steiner, 2011)

Pleasure which a man compares to trouble can be created through material or nonmaterial goods and it is very comprehensive. Man strives to maximize the sum of happiness all his life. Behaviour leading to achieving this goal is rational. A man uses various tools, e.g. education, to realize this goal. He is concurrently influenced by the behaviour of others which creates standards, meaning that his pleasure derives from the behaviour of others, namely his social

class. Steiner remarks that this conception resembles something that was discovered in the following century and named bounded rationality. (Steiner, 2011)

Edgeworth's man as a pleasure machine is used as a synonym for selfish Homo Economicus. Edgeworth's conception of pleasure is actually also purely utilitarian.
He refers both to utilitarists (particularly Sidgwick) and to Jevons. In connection to Jevons, he substantiates marginalism as mathematical reasoning applicable to quantities which may not be susceptible of numerical evaluation. He supplements Jevons's units for measuring utility – intensity (especially this is immeasurable according to him) and time – with a third one, number of those who achieve the given utility. He thus turns utility into a social quantity which he uses to express conditions of his maximization using differential and integral (analogically to Lagrange's processes in physics - Pleasure is the concomitant of Energy): a mass of utility, 'lot of pleasure,' is greater than another when it hasmore intensity-time-number units. The third dimension is doubtless an evolutional acquisition; and is still far from perfectly evolved. (Edgeworth, 1885). He considers application of economic (understand mathematical) tools to social sciences as his contribution. For Economics investigates the arrangements between agents each tending to his own maximum utility; and Politics and (utilitarian) Ethics investigate the arrangements which conduce to the maximum sum total of utility. He thus extends Jevons's approach beyond the framework of "the lowest rank of feelings". Edgeworth perceives his as application of economy to "the utilitarian problem of which the object is the greatest possible sum total of universal happiness", even among generations. (Edgeworth, 1885)

This very brief overview of neoclassical economists - founders' opinions which is possible within the scope of my paper, I have to conclude with none other than Marshall. It is generally known that although Marshall was a well-educated and skilful mathematician, he was sceptical towards using mathematical methods in economy. Similar to his predecessors he found analogy between economics and physics and astronomy, however with a reserve saying that while in physics or astronomy the variables used in the theory can include most of the important causes and effects, so that an empirical test can match the theory quite closely, economic theory often fails in this regard because, by necessity, human sciences often rely on theories that do not include all of the variables that are relevant at a specific time and place. He therefore equates economics rather to meteorology. The laws of economics are to be compared with the laws of the tides, rather than the simple and exact law of gravitation. The actions of men are so various

and uncertain, that the best statement of tendencies, which we can make in a science of human conduct, must needs be inexact and faulty (Marshall, 1920). Marshall accepted mathematical models and static equilibrium theory as helpful organizing principles that can help in understanding the functioning of actual markets. But he insisted that tendencies produced by self-interested, rational human behaviour yield predictable results only within the limited confines of "disturbing causes", which must be examined one at a time using the ceteris paribus assumption. In conformity with that he perceives economics, similarly to Walras, as a science concerning activities leading to the meeting of wants rather than science concerning wants. Wants depend on time, sex, social standing, wants induce activities and activities induce new wants; wants also include spending one's free time, namely in case of high society, while Indians and working class limit their wants to surviving and consuming alcohol. This outline of the "science of wants" is borrowed from the science of efforts and activities. The higher study of consumption must come after, and not before, the main body of economic analysis; and, though it may have its beginning within the proper domain of economics, it cannot find its conclusion there, but must extend far beyond (Marshall, 1920).

Even Marshall therefore limits using mathematical tools in order to create a general model describing universal behaviour of economic agents outside time and space with full awareness of limitation of these methods.

3 Utility in 20th Century

We can call the early 20th century the period of deflection from utility to preferences. If utility was perceived by neoclassical economics as absolutely ungraspable substance until now, it seems logical and legitimate that after some time economists, the first of them being P. Samuelson with his revealed preferences theory, came to the conclusion that utility is not necessary for consumers' decisions. Samuelson's opinions were grasped both critically and admirably by others (Paretto, Rothbard) to rid the economics of psychologization and behaviourism which they consider useless using a preference scale (Vojáček, 2011).

The completely innovative perception of utility by G. Becker several decades later seems all the fiercer then. Becker emphasizes that what most distinguishes economics as a discipline from other disciplines of the social sciences is not its subject matter but its approach, it means

approach maximizing behaviour, be it the utility or wealth function of the household, firm, union or government bureau that is maximized (Becker, 1976).

Becker is the first economist to give some content to utility as an ungraspable „physical" substance of neoclassical economists - founders. He defines stable preferences, by which he does not mean preferences towards market goods, such as oranges or automobiles, but rather so-called underlying preferences defined over fundamental aspects of life such as health, prestige, sensual pleasure, benevolence, or envy. (Becker, 1976). He thus returns to the utilitarian concept of utility which he does not consider an addition to an economic perspective but he rather uses it as utility function variables, on contrary to his predecessors. A household has both its utility and production function using not only market prices but also so-called shadow prices which include time as an expense for consumption. For illustration, in his Theory of Marriage Becker creates production function of marriage in conformity with the formula of Cobb-Douglas's function. A man and a woman are complements as only by their accouplement children can be produced. Children are then a substance of long-term consumption as well as capital, the demand for them is declining and it is different for high quality and low quality children. Marriage is affected bylove and attraction, namely in a way that it reduces alternative costs on the mutually spent time due to the fact that the spouses share the household. (Becker, 1973)

In his theories Becker partly tries to explain each type of human behaviour exclusively as a rational comparison of all known expenses and incomes and concurrently tries to project all circumstances of such rational decision-making into his functions as variables. He thus radically modifies the original neoclassical perception of maximizing utility as a general principle of preference of pleasure to pain, more pleasure to less or less pain to more which the neoclassical economists - founders formulated as a law of gravitation of economic behaviour of man. Figuratively speaking, Becker used the gravitation law to explain why and how a bird flies.

Kahneman does not seemingly belong among neoclassical economists. He is neither neoclassical nor an economist. While Becker was awarded the Nobel Prize for applying the rationality principle to uneconomic behaviour of man, Kahneman received it exactly ten years later for behavioural approach to economic decision-making which contradicts rationality. The reason why Kahneman has been included in this overview of evolution of neoclassical perception of utility are his previous experiments leading to the confirmation or contradiction of the maximization principle. Not only a mathematical proof but also scientific experiment is

considered a proof of relevance of neoclassical principles. Kahneman is thus one of the most notable supporters of the other way of evolvement of economics as a "pure science".

The most easily describable Kahneman's experiment is the one based on the perception (Bentham's) of pain of sense in dependence to its intensity and its duration. ´The experiment participants dipped their hand into very cold water for a defined time and subsequently once again for a longer time to equally cold water but after this longer time has passed, the water was warmed for a while. When the test subjects were offered to repeat either the first or the second part of the experiment, majority opted for the second part in contradiction to Bentham's rationality. Kahneman thus proved that the decision of the participants was influenced by the last sensation which prevailed over the duration of equally unpleasant feeling and they opted for the variant offering more pain, i.e. irrationally. (Kahneman, 1993)

Conclusion

Does Kahneman's conclusion thus contradict the first axiom of neoclassical theory? Kahneman does not prove that people behave irrationally; he rather proved that they do not a behave only rationally. If we accept neoclassical theory as „physics" of social sciences and rationality as a general principle of behaviour of an economic agent and limited principle of behaviour of a human being, we can live in symbiosis with the mainstream economics from the position of behavioural, institutional or social economists. At least as long as we are left have space delimited by Marshall's statement mentioned above: "The higher study of consumption must come after, and not before, the main body of economic analysis". Utility, whose social and ethical dimension is explicitly allowed by the original neoclassical theory, must be investigated in its psychological, historical and social connections as a social science which, in my opinion, economics still remains in its major part despite 150 years of mathematical invasion. I refuse to accept the claim that any particular market-related, let alone not market-related, decision of an agent can be predicted after its substitution in a utility function with arbitrary but definite number of variables. I therefore do not see any sense in the current effort of a part of neoclassical economists aimed at formulating such functions. (Rusmichová, 2016).

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