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The Concept of Homo Economicus in Economic Theory: An Outline of the Evolution

Introduction

The origins of the stereotypical, instrumental view of *homo economicus* should be traced back to the tendency to describe and explain the reality in a scientific way that was dominant in the 18th century[1]. I. Newton's law of universal gravitation allowed explaining many phenomena ranging from free fall to the movement of celestial bodies. Attempts were made then to formulate a principle that would clarify interpersonal interactions; therefore, a perfectly rational man wishing only to maximise his or her own advantage seemed to be an attractive model. The construct of an individual always motivated by a personal profit and loss account was isolated from the context of specific conditions in which it functioned in the works by A. Smith. *Homo economicus* so understood was described in models and analyses of economic, political and social relations (Kliemt, 2005: 206). As *homo economicus* represented easily quantifiable characteristics, it became the basis for the neoclassical, largely mathematical, economic theory. Undoubtedly, *homo economicus* is recognised by schools of mainstream economics as a model that allows theo-

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[1] At the turn of the 20th century, a strong inclination to mathematise scientific discourse prevailed. At the International Congress of Mathematicians in 1900 in Paris, among the famous 23 problems put forward by D. Hilbert, there appeared the 6th problem of mathematical treatment of the axioms of physics (Hilbert, *Mathematical Problems. Lecture delivered before the International Congress of Mathematicians at Paris in 1900*. http://aleph0.clarku.edu/~djoyce/hilbert/problems.html). The directions proposed by D. Hilbert as regards the development of mathematics and physics also inspired the axiomatisation of individuals' rational behaviour. Under neoclassical economics, the mathematical narrative was raised to the rank of the official language of economics. Logical consistency of models became the basic criterion of their veracity and narrowly construed criteria of rationality were considered an indicator of a scientific approach.

retical generalisations concerning the functioning of the entire economy (the thesis of methodological individualism) and provides scientific unity to economics (Hogarth, Reder, 1987: 4).

In analysing the link between A. Smith's approach and I. Newton's research method, H.F. Thomson used the term "Newtonian moralism", claiming that the father of economics undertook the analysis of economic behaviours, inspired by the idea of balance and the law of gravitation (Thomson, 1965: 226).

The notion of *homo economicus* deserves a closer look because it is often used in a degenerated sense as a key word, with no reflection over the complexity of related tradition of economic, social and philosophical thought.

This article aims to outline the concept of *homo economicus*. The issues herein do not describe its whole range, but only selected elements. The first part focuses on the origins and elements of the *homo economicus* concept. Further, the most important criticisms of this notion are discussed, together with the most significant alternative ways of understanding *homo economicus*. Finally, major conclusions end this study.

The origins of the *homo economicus* concept

The concept of *homo economicus* as an individual guided by rationality when making choices was developed in the second half of the 18th century by Scottish philosopher, moralist, economist and humanist A. Smith, recognised as the father of economics, who – explaining the mechanism of the "invisible hand of the market" – stated that selfishness was a natural motivator for individuals to act and also a major driving force for the society and economy. However, A. Smith never used the term *homo economicus*.

Representatives of classical economics used neither the Latin term *homo economicus* nor its English equivalent, i.e. economic man. The Latin version defining the behaviour of a model economic man was first used by Adolph Lowe in *Economics and Sociology* (1835). Others point at Italian economist Vilfredo Federico Pareto, the author of *Manuale d'economia politica* (1906), who, in turn, mentions Vito Volter as the first person to allegedly refer to the term *homo economicus* in 1901 (O'Boyle, 2007: 321). Other sources consider that the fathers of this notion were Italian economist Maffeo Pantaleoni with his *Principii di Economia Pura* of 1889 and John Kells Ingram, who coined it in his *A History of Political Economy* in 1888 (Persky, 1968: 222). Still other explorations lead to an earlier period, to *Grundsätze Volkswirtschaftslehre* (1847) by Karl Rau (O'Boyle, 2007: 322). It may, therefore, be assumed that both theoretical foundations of this concept and its name as used today were outlined at the turn of the 19th century.

But let us return to A. Smith. The "economic man" – rational, seeking to achieve his or her own objectives, selecting optimum means to maximise gains – was described by him in *An Inquiry into the Nature and Causes of the Wealth of Nations*. In that work, *homo economicus* is characterised as an individual who is motivated by the desire to meet particular and selfish needs and is concerned about his or her own well-being and well-being of his or her family. It should, nevertheless, be borne in mind that *homo economicus* so interpreted is merely a theoretical construct operating in idealised conditions of perfect competition, full economic freedom and almost unlimited access to information – its market behaviours are thus the result of cold rational calculation where the aim is to optimise the means to pursue self-interests. As rightly argued by M. Kuniński (1980: 140), it may not be, however, considered as characteristics of real existing individuals – a more accurate solution is to define it as an "ideal type" described by Max Weber. According to Weber, an ideal type is formed by the one-sided accentuation of one or more points of view. A historian thus has to determine how much the reality approaches or departs from this ideal image on a case-by-case basis (Bittner, 2009: 11).

Adam Smith was aware of the incompatibility of the postulated conditions with the observed reality, yet an abstract theoretical model allowed him to present mechanisms that we observe – or could observe – in a somewhat distorted form in the real world. This does not mean, however, that A. Smith denied rationality of real people. Similarly to David Hume, he treated it rather instrumentally. For A. Smith, man is primarily a moral and social individual who is described by his concept of sympathy or construct of an impartial spectator – all these sub-elements make up a multidimensional person not free from flaws. Both in *An Inquiry into the Nature and Causes of the Wealth of Nations* and *The Theory of Moral Sentiments* and *Lectures on Jurisprudence*, he stressed that one of the basic motives of human beings is the desire for social acceptance (Smith, 1989: 109). Many needs beyond the basic biological wants are shaped socially. Appreciation by others and approval by the internal impartial spectator are essential for happiness. Concern for self-interest is necessary to meet the needs rationally – this is God's command. As claimed by A. Smith, individuals are free to decide how to use surplus goods – they can invest them, use them in a benevolent manner, or squander them (Hayek, 1978). Moreover, the rational behaviour of *homo economicus* contributes to the general well-being of the society at large through the mechanism of the invisible hand characteristic of the theory of spontaneous development. Nonetheless, it must not be forgotten that A. Smith argued that most people overestimate their chances of success and underestimate the risk of failure, as written by J. Polowczyk. Attachment to objects the loss of which causes frustration disproportionate to their actual value is also incompatible with rational reasoning. A. Smith also observed a phenomenon called "framing effect" whereby gains or losses of an individual appear to be disproportionately higher than those of others, meaning that we are not dependent on the context of our decision-making but focused mainly on ourselves. Furthermore, we are short-sighted when making decisions since we are interested in short-term rather than long-term rewards. We also succumb to changing fashions and customs that vary from one country to another (A. Smith gives an example of the attitude to hospitality among lavish Poles and the parsimonious Dutch) (Polowczyk, 201: 508–514).

The concept of *homo economicus* was introduced to economics by J.S. Mill[2], who was first to define the basic psychological characteristics of the economic man model. As emphasised by K. Szarzec, "[…] the model of *homo economicus* is already visible in A. Smith's works, where he relies on it to explain the mechanism of «invisible hand». However, it was never named by him and is reconstructed on the basis of this mechanism. It was introduced to economics by J.S. Mill, who, in his *Essays on Some Unsettled Questions of Political Economy* (1836), stated that the definition and characteristics of economic man did not formally occur in any work on political economics" (Szarzec, 2005: 10). It should be noted here that J.S. Mill claimed in that essay that economics should not be a science faithfully reflecting the reality, but its task was to present such reality and its mechanisms as if nothing beyond economy existed. He found that economics understood mankind as solely acquiring and using wealth and aimed at showing the course of actions that would have been pursued by humans living in a social state if the motive mentioned had exclusively ruled their actions.

It should also be highlighted that J.S. Mill emphasised particular interests of individuals much more strongly than A. Smith, as evidenced by his utilitarian ethics, which does not ignore, however, the notion of "public interest". It should be made clear that according to J.S. Mill, the concept of *homo economicus* is a theoretical construct that does not define any actual man, yet is useful in social economics analyses[3]. On the other hand, the view by Amartya Sen was more specific in this context. He appreciated the use of the *homo economicus* concept in economic theory, while pointing to the need to analyse it in its the then form in view of free competition, individual choice and the preference for maximum utility. In *Rational Fools: A Critique of the Behavioural Foundations of Economic Theory*, he argued that "economic rationality" contained in the traditional concept of economic man and determining individual behaviour did not provide an exhaustive explanation of individuals' behaviours in the light of the analysis conducted, and required the interpretation of these behaviours to be supplemented with their ethical dimension, in particular the motive of responsibility.

2 J.S. Mill is considered to be the author of the *homo oeconomicus* concept, although he never used this term.

3 In 1836, J.S. Mill, in his essay *On the Definition of Political Economy; and the Method of Investigation Proper to It*, called for personal interest of an individual to be distinguished among other motives of actions. A motive so identified was to be the basis for distinguishing economics from among social sciences. J.S. Mill also postulated that economics should be treated as an abstract science using the *a priori* method, drawing conclusions from abstract assumptions on maximising one's own advantage (Hausman, 2008: 45). Obviously, J.S. Mill was aware of the complexity of social processes. Indeed, he himself made his name not only as an economist but also as an astute observer of politics and a theorist of liberalism. He was, however, far from glorifying profit maximisation as an overarching principle of the economic life organisation. Nonetheless, he believed that distinguishing the motive of one's own advantage combined with rationality of action might be a lasting foundation of science, namely the then economics.

Elements of the *homo economicus* concept

The *homo economicus* concept has the following two components: a formal one which determines how the rational man behaves and a material element which describes the man's motivational structure, i.e. indicates what incentive is the primary factor in his or her behaviour. The formal element of *homo economicus* is rationality in the instrumental sense. This implies that, when selecting an action from among actions possible in a given situation, a person considers benefits and losses resulting from each choice and decides to undertake such action that yields the biggest advantage in terms of benefits and losses. In other words, when selecting an action from among those possible in a given situation, man chooses such action that allows for achieving the goals set to the fullest possible extent and at the lowest possible cost. Rationality in the instrumental sense is a formal element because one can be rational in this meaning regardless of what is sought. The material element of *homo economicus* is selfishness. This means that people seek to increase their wealth. Hence, they do not find any satisfaction with other people possessing a given good, but they find no satisfaction with the misfortune of others either. Depending on the type of goods the rational man wants to have, a strong and weak version of *homo economicus* can be distinguished. According to the former one, these are economic goods, whereas the second version assumes that the rational man may also care about intangible goods. Most representatives of contemporary economics seem to tend now to accept the weak version of *homo economicus*.

As argued by S. Ossowski, the formulation of man exhibiting an economic attitude involves some abstract simplification, and it is for us to decide which of the diverse psychological attitudes to consider as an essential attitude. According to this suggestion, the phenomenon of a human being oriented towards an "economic attitude" should be regarded as one of the varieties of human personality and thus a restriction of this personality to only one of its forms. Therefore, the *homo economicus* concept should be understood as one of personality modules corresponding to a specific model of man. If so construed, *homo economicus* may be considered a typological model defined by a set of preferences that is also conditioned in the sphere of consciousness (Ossowski, 2000: 127).

Criticism of the *homo economicus* concept

Despite its obvious methodological advantages, the *homo economicus* concept faces continuously more criticism. The main criticism focuses on the "unreality" of its fundamental principles. Undoubtedly, *homo economicus* is increasingly criticised also for its inadequacy to the current world economic situation and thus to the policy pursued by countries and other entities.

J.S. Mill's view of *homo economicus* as a typical egoist whose actions are motivated solely by the desire to accumulate wealth was sharply criticised by A. Marshall. According to him, *homo economicus* is actually influenced by lust for wealth in the economic sphere, yet is also vane, reckless and able to sacrifice for the sake of his or her family.

Later, the *homo economicus* concept was fiercely criticised by Amitaiz Etzioni (real name: Werner Falk) and John Ruskin (Zalega, 2009: 64). A. Etzioni's proposal is particularly interesting, insisting that rationality as such is not a "natural" inclination in every consumer's actions. That author puts forward a very logical thesis to the effect that rational actions involve a cognitive effort associated with the process of education, socialisation, building intellectual capital in social microstructures and a developmental effort referring to continuous investment in and support of one's ability to make rational decisions since otherwise as yet rational behaviour will revert to its entropic state (Etzioni, 1986: 32–36). The above reasoning suggests that rationality is a variable that is closely correlated with cognitive skills, effort, information costs, activating determinants and environmental conditions. A similar view was also held by Georgescu-Roegen, who claims that consumer behaviour is marked by largely random choices, emotionality, inconsistency, lack of calculation, internal conflicts, resistance to arguments and groupthink. Thus, that author argues that irrationality, which he described as an "entropic" state, is the "natural" state of consumers. Consumers do not calculate, are emotional, inconsistent, experience internal conflicts, make random choices, are resistant to arguments and inclined to groupthink. A. Etzioni asserts that the elementary question does not refer to whether consumers are rational or not, but to how and under what environmental circumstances they tend to be rational (Zalega, 2012: 87).

Etzioni is also the author of the *homo sociologicus* concept as opposed to *homo economicus*. The presumption is that man's actions are guided by heart rather than reason. Man attaches greater importance to value preservation than the economic result, that is profit. Of course, the line between *homo economicus* and *homo sociologicus* is quite smooth and these are two different concepts of man. Nonetheless, both of them contain essential elements that allow the creation of a socio-economic man whose behaviour is reflected in reality (Etzioni, Lawrence, 1991). It should be noted here that, from the point of view of sociologists, the model of "economic man" explains human behaviour by referring to individual needs and goals, with the social order being formed by combining individual interests. In contrast, the model of "social man" explains actions taken by referring to collective norms, values and rules, with the social order being based on cooperation and normative consensus (Reckwitz, 2002: 245).

Neoclassical thinkers assumed that *homo economicus* was an actor characterised by maximising (optimising) behaviour, cognitive abilities to make rational choices, autonomy and independent preferences (Doucouliagos, 1994: 877). Such an approach has been most commonly criticised because man's rationality is limited as there are cognitive constraints on making rational choices, decision-makers' behaviours tend to be adaptive rather than optimising, and decision-makers themselves are not typical maximialists, but their actions are only intended to find satisfaction. Another group of critics focused on the role of institutions, claiming that decision-makers could not make decisions autonomously and their preferences were neither exogenous nor independent. The former group of critics includes H.A. Simon, H. Leibenstein, A. Etzioni and R. Lutz. The first of them replaced *homo economicus* with *homo satisfaciendus*, i.e. man making choices on the basis of bounded rationality who, unable to maximise his or her utility function, meets his or her needs in a satisfactory manner only. According to H.A. Simon, man is not able to gather all information needed to make an optimal decision, hence is forced to take suboptimal decisions that must, however, be acceptable. He also divided rationality into real rationality, referring to the outcome of a decision, and methodological rationality, relating to the method of making decisions, i.e. currently prevailing conditions, including constraints (Simon, 1997: 293). In his concept of bounded rationality formulated in 1957, H.A. Simon highlighted subjective and inter-subjective approach to rationality, adding that it was of a methodological nature due to the way decision-making processes unfold and that it also became restricted due to specific conditions of knowledge collected and to uncertainty (Simon, 1976: 147). It should be stressed here that the theory of bounded rationality indicates two significant aspects: firstly, not all individuals are interested in achieving the optimum results, because they have only limited cognitive abilities which hinder them from considering all rational possibilities properly. Secondly, as people make consumption-related decisions, they are driven by the necessity to meet their needs, but they also consider social circumstances. This means that, according to the concept of methodological rationality, the very way of behaving in line with some specific rules (which are the foundation for evaluating of how rationally one manages one's income) is really more important than the result (Zalega, 2012: 88–89).

H.A. Simon's concept of bounded rationality was then extended in the works by R. Cyert and J. March (1963), the authors of the behavioural theory of the firm, by D. Kahneman and A. Tversky (1979), the proponents of the prospect theory recognised as the most prominent representatives of experimental economics and behavioural economics, by G. A. Akerlof (1984), the precursor of studies on information asymmetry, and by representatives of neoinstitutionalism D. C. North and O. E. Williamson (1985), the latter being the creator of the behavioural uncertainty hypothesis.

Also Harvey Leibenstein, in his selective rationality concept known as the theory of X-efficiency, argued that individuals were equipped with specific sets of personality traits determining the degree to which they were aware of constraints on their calculation involved in the pursuit and achievement of particular goals. On the other hand, however, there are various levels of internal or external pressure that imposes either a higher or lower level of "calculatedness" behind the actions taken. Therefore, human behaviour results from a choice of an appropriate combination of the level of awareness of limitations and that of pressure. It may thus be said that an individual's rationality stems from his or her maximising strategies of choice of a level of calculative rationality, depending on the pressure of the environment (Leibenstein 1979a: 13–14; Zalega, 2015: 133). Under the selective rationality concept, two degrees of calculation may be distinguished: *tenacious (tight) calculation* denoting a very prudent, tested and adjusted calculation and *approximate (loose) calculation* that may be treated as varying in a certain range and to a certain degree, thereby making the calculation imprecise (Leibenstein 1979b: 479). H. Leibenstein believes that people are rational only in certain areas of their lives. In fact, it is impossible to generate 100% efficiency because a human being is not completely rational. Consequently, there is a certain degree of inefficiency which undermines the very concept of *homo economicus* (Leibenstein, 1988). The selective rationality concept drives an individual's behaviour beyond the *homo economicus* scheme, yet it provides no tools to predict human behaviour.

The dual structure of rational behaviours, as observed by H. Leibenstein, was subsequently developed by representatives of the radical and critical current in economics, including, in particular, A. Etzioni and R. Lutz. Those authors derive the way a consumer's preferences are shaped from the so-called dual self concept, which assumes that first- and second-rank preferences are shaped in effect. A. Etzioni and R. Lutz argue that classical economic concepts only focus on the structure of first-rank preferences, while totally ignoring second-rank ones which include self-consciousness of individuals and their ability to reflect – in many cases morally – over the structure of the choices made. This, in effect, leads to the concept of the so-called restrained rationality based on a dual system of judgement, meta-rankings and meta-functions of utility (Etzioni, 1988: 47). This type of behaviour is often referred to as reasonable behaviour in the literature on this topic.

The second group of critics of the classical and neoclassical concepts of *homo economicus* includes representatives of institutional economics. Institutionalists understand *homo economicus* as a social entity that strives to gain own advantage in the first place, but whose behaviour also takes into account generally applicable social rules and norms developed in the process of socialisation. In contrast to representatives of classicism and neoclassicism, institutionalists recognise that the conditions in which decisions are made are also shaped by the decision maker. Therefore, not only the mode of action but also the objectives pursued by an individual must take into account cultural restrictions in the community in which one lives and which affects one's attitudes, values and beliefs.

F.A. Hayek attempted to refute what he considered to be wrong understanding of *homo economicus*. He emphasised the spontaneous development present in A. Smith's works and the social dimension of his theory. He believed that since the days of D. Hume and A. Smith, economics had faced the question of spontaneous development, striving to explain the fact that global results of actions taken by each individual were not an effect of coordination and rational planning but rather the invisible hand described by A. Smith. According to F.A. Hayek, it should be kept in mind that institutions are not established by individuals' rational acts of will but are a result of multiple processes and are shaped and changed socially. He stresses that individuals in A. Smith's writings are often irrational, and the primary role of the society and its institutions and, above all, the result of properly understood individualism is a potential reduction of negative effects of human activities. F.A. Hayek criticised A. Smith's theory insofar as his interpretation of *homo economicus* as extremely rational and selfish is concerned. He stressed non-rational elements in that description (Hayek, 1998: 18). However, he did not simplify Smith's concept of an individual, appreciating the multidimensional characterisation of man.

An important step in the development of the *homo economicus* model was the hypothesis of rational expectations formulated by J.F. Muth in his article *Rational Expectations and the Theory of Price Movements* (1961). He assumes that information is a scarce resource; therefore, it is not "wasted" (all information is sought, collected and used immediately); and that expectations are formulated by means of the current economic model. Based on these assumptions, J.F. Muth stated that possible deviations of the formulated expectations from "rational expectations" must be stochastic errors, hence in an aggregated scale, their expected value equals zero (Muth, 1961: 316–317). This means that economic entities cannot make the same mistakes in series. This implies the optimum use of all available information by means of the model that is best adjusted to reality (Wallusch, 2012: 74).

J.F. Muth's work led to giving *homo economicus* the ability to predict the future perfectly based on full knowledge of both theory and all the information available. In this way, economic considerations began to commonly accept the assumptions about the lack of uncertainty, ignorance and irrational behaviour, that is anything that might be called "human factor" (Jurek, Rybacki, 2014: 69).

The concept of *homo economicus* was also disputed by Public Choice theorists – James M. Buchanan and Gordon Tullock. They adopted a stereotypical understanding of man as *homo economicus*. As opposed to *homo economicus* motivated by self-interest, J.M. Buchanan and G. Tullock attempted to design its counterpart in the situation of public choice. Consequently, there emerged a concept of man who was inconsistent, internally broken, and behaved differently in situations of public choices and those of private choices (Buchanan, Tullock, 1962: 312).

Alternative *homo economicus* concepts

The evolution and progress in economic studies that have occurred in the past five decades provide a theoretical basis for changing the paradigm of *homo economicus*. Today, economics is constantly expanding and becoming more and more diverse internally, combining its own reflections with other social sciences, chiefly psychology, sociology and philosophy. As part of the interdisciplinary exchange, new methodologies and scientific approaches are emerging that are directed towards a more holistic view of economic processes and the functioning of entities in the market. Thus, the classical axiom of a rational man is being abandoned, with the concept of an emotional man gaining in importance. Such an approach resulted in a whole array of alternative ways of understanding of *homo economicus* in many heterodox schools of economics such as: Austrian economics, institutionalism, post-Keynesian economics, behavioural economics, evolutionary economics and ecological economics.

A classical example of a notion opposite to *homo economicus* is undoubtedly the idea of "social man" also conceptualised as *homo sociologicus* (Dahrendorf, 1968: 6). As claimed by J. Elster, it is the second dominant concept of human nature in social sciences besides *homo economicus* (Elster, 1989: 102–103). There are three subtypes of "social man": *homo institutional economicus*, *homo social economicus and homo socio-economicus* (Tomer, 2001: 289–290).

The idea of *homo sociologicus*, i.e. a perfectly socialised individual, was developed on the basis of institutional economics. The key assumption of the *homo sociologicus* concept is the belief that man is not wholly autonomous as he or she is determined by social norms and values. Man, therefore, acts in a specific organisational culture that shapes his or her way of thinking and feeling. According to R. Dahrendorf, this is the reason why this concept cannot be associated with pure selfishness but rather a kind of social altruism which involves roles imposed by the society (Dahrendorf, 1968: 6) or organisational citizenship behaviour (OCB) of workers as termed by D.W. Organ (Organ, Ryan, 1995: 776–778). *Homo sociologicus* is a part of his or her environment – the company for which he or she works and to which he or she devotes cognitive and emotional resources.

Homo sociologicus was created in order to prove that man does not always make decisions that can be rigidly defined as economically rational. Actually, man frequently makes decisions based on non-economic factors, which is confirmed by the existence of non-functional demand, for example, in the form of T.B. Veblen's paradox, conspicuous consumption and the snob effect aptly described by H. Leibenstein (Zalega, 2015b: 143–144).

Under the *homo sociologicus* concept, neither decision-making nor behaviour (also moral) is purely rational. It results from interdependences among individuals. As rightly pointed out by P. Hirsch, S. Michales and R. Friedman, in this meaning, the "social man" will be guided by collective values and norms or institutional conditions which impose an obligation to obey and show concern for others rather than selfish motives (Hirsch, Michaels, Friedman, 1987: 319–321). As an entity that is "socially implicated", man must respect supreme moral norms because they ensure the duration and continuity of any social system.

In turn, the concept of *homo socio-economicus* defined by S. Lindenberg as RREEMM (resourceful, restricted, expecting, evaluating, maximising man) was developed by combining *homo economicus* and *homo sociologicus* (Lindenberg, 1990: 739). He perceives *homo socio-economicus* as a flexible combination of an individual who is motivated by utility maximisation, yet is limited by the complexity of conditions in which he or she acts. Getting the model right is, however, possible through situational selection of utility components, i.e. instrumental goals set by individual preferences that are shaped in the social space in the socialisation process (Lindenberg, 1990: 745). The concept of *homo socio-economicus* emphasises that individual selfishness is merely one aspect of today's societies. In making decisions, man is constrained by norms, rules of conduct and recognised values of a given society. *Homo socio-economicus* may thus be said to be an individual with bounded rationality who seeks to make correct and best possible decisions under constraints existing at the moment.

In the socio-economic school, the opposition of *homo economicus* is the concept of *homo bi-economicus*, which evolved from *homo economicus*. This idea presumes that people have a double structure of their preferences – the needs of the lower self are limited by meta-preferences, namely the higher self (e.g. a sense of justice, law, fair trade, etc.). Two levels of preferences do not mean that the evaluation at these levels is independent. Maximising behaviours are restricted by preferences of the higher self. The choice of meta-preferences is determined by the ranking of objects to choose at the basic level, yet it is not a maximising choice since meta-preferences are an expression of a shared value system not subject to ranking. Consequently, assuming the existence of a double, introspective self and the structure of needs and values, we return to the question of utility (Wawrzyniak, 2015: 49).

The *homo economicus* concept does not work when the economy globally affects the natural environment and society either. First and foremost, this construct does not explain why current economically rational behaviours of individuals lead to irrational social and environmental consequences, and hence an increase in well-being of some individuals does not contribute to the overall increase in well-being but quite the contrary (Zalega, 2015c: 81). The economics of sustainable development may find the concept of *homo economicus* useful for interpreting the causes of lack of sustainability in the society-economy-natural environment macrosystem and forecasting problems with balancing its systems that ensue from short-sightedness and selfishness of economic men (Kiełczewski, 2011: 69–70). For these reasons, the idea of sustainable development assumes that an alternative to *homo economicus* is the concept of *homo sustinens* based on community and altruistic values. The adjective *sustinens* refers to sustainable development. *Homo sustinens* has its origins not in economic sciences but in philosophy, ethics, psychological and natural sciences. In a sense, it lends credibility to the idea of sustainable development and gives it a scientific character, also reflecting the overall potential of human beings. It is also a good methodological basis for economics of sustainable development in the normative dimension (Hodgson, 2006). In a positive dimension, on the other hand, it is problematic in view of its many dubious elements resulting from accepted implementation of its principles. It may, therefore, be said that the concept of *homo sustinens* is an attempt to create an anthropological foundation for the theory of sustainable development. *Homo sustinens* is the economic man who behaves like *homo economicus*, while still being able to undertake economic actions with the needs of future generations in mind.

The originator of the *homo sustinens* concept, B. Siebenhüner, understands *homo sustinens* as a man whose behaviour is driven by emotions as an expression of his or her emotional attitude to nature and whose motivation is intrinsic, not coming only from extrinsic stimuli. According to B. Siebenhüner, the concept of *homo sustinens* contrasts the utility maximisation hypothesis (*homo economicus*) and the hypothesis of *homo sapiens* survival (Siebenhüner, 2000: 16–19). This implies that *homo sustinens* is an individual who has a number of genetic predispositions to strive for sustainable development during daily individual activities in every sphere of the socio-economic functioning.

Apparently, K. Dopfer also criticised *homo economicus*. In his article entitled *The economic agent as rule maker and rule user: Homo Sapiens Economicus* published in 2004, K. Dopfer, taking into account the achievements of neurological, cognitive and behavioural sciences, demonstrates that the concept of *homo economicus* has long been outdated and must be replaced by the concept of *homo sapiens economicus* (Dopfer, 2004: 179–180). He recommends to pay more attention to the dualism of human evolution, namely biological and social changes, changes of behavioural patterns and interaction mechanisms. The concept of *homo sapiens economicus*, that is the emotional human paradigm, presumes that people's economic decisions are driven by non-economic factors (customs, habits, imitation, fashion), hence their decisions are not optimal (rational). In K. Dopfer' s opinion, due to the confusion that arose at the beginning of the 21st century (unbundling innovation and economic growth, threat of marginalisation, deterioration of competences, collapse of expectations, loss of cultural attractiveness), the "new" *economicus* is becoming emancipated and is striving to throw off the shackles of biology and culture. Moreover, such a man can use the latest scientific achievements, including the precision of sciences, like for instance artificial intelligence and mathematical optimisation of data when making decisions, on the one hand, and on the other hand – while remaining a human being – cannot suppress his or her emotional nature and the so-called human factor that are not so easily quantifiable in making economic decisions (Zalega 2016: 167).

In the 1970s, D. Kahneman and A. Tversky, in their work entitled *Prospect theory: An analysis of decisions under risk*, introduced research on behavioural decision-making in economics. They did not explicitly reject the behavioural assumptions of rationality; however, as written by C.F. Camerer (2006: 189), they treated them as a starting point and studied the deviations from these assumptions, which they perceived as departures from rationality as a standard behaviour. They proposed to replace the classical model of full rationality by a model that took into account the degree of risk aversion and its impact on the preferences of economic men. It should be noted here that D. Kahneman, in particular, questioned the canon of the economic theory relating to "rational behaviour" of the market and consumers.

At the same time, he challenged the traditional understanding of *homo economicus* as behaving rationally in accordance with the principle of maximum utility. Furthermore, he claimed that people were not rational in the economic sense, yet not because they sometimes behaved contrary to the rationality criteria but because they made predictable and systematic mistakes.

In the prospect theory, D. Kahneman and A. Tversky (1979) argue that people's decisions are influenced by emotions, attitudes, perceptual errors and the simulation context. In their view, the choices made by individuals are driven by heuristics that work well under normal conditions, but may lead to errors. According to them, people facing a specific decision search their memory for facts and situations that they might compare with the present moment. In their discussion, those researchers conclude that human attitude towards gains and losses may depend on the perspective (context) from which they are considered (prospect theory known as the reflection effect). As regards gains, the reflection effect refers to individuals preferring smaller but more certain gains to those that are bigger and uncertain. As for losses, consumers tend to prefer bigger and uncertain losses rather than losses that are smaller but certain. According to D. Kahneman and A. Tversky, this dependence of choices on the context (manifesting itself as the reflection effect) proves the irrationality of individuals' decisions (Zaleśkiewicz 2008: 39). It should also be mentioned that D. Kahneman and A. Tversky, in cooperation with R. Thaler, P. Slovik, C. Camerer and T. Gilovich, developed the entire research programme concerning cognitive biases and illusions that affect thinking and decision-making. In this way, a number of "heuristics of judgement" – as they called them – were detected. They can also be termed "mental shortcuts" or even simply "common-sense rules" that shape our thinking, in particular about financial matters (Shermer, 2008: 127). C.F. Cramerer and G. Loewenstein (2002) believe that in the long run, simplified models based on the assumption of strict rationality will be replaced by behavioural models. The assumption of strict rationality, which is now considered indispensable in economics, will be regarded as a useful but special case in future.

Currently, one of the most active representatives of behavioural economics is D. Ariely, who believes it to be based on a rejection of classical views about the rationality of choices. According to D. Ariely (2010: 30–31), despite their best efforts, people are often incapable of making rational decisions due to cognitive biases.

Experimental economics is founded on the concept of *homo reciprocans*, which refers to types of human behaviour that can be confirmed experimentally. The conclusions drawn from these experiments result in the following picture of man: man seeks fairness, is guided by the "tit for tat" principle, tends to escalate both positive and negative behaviours. An important assumption is repetition of results. The longer the experimental games, the better the results. "Homo economicus" playing games achieves a bad result (Falk, 2001: 154–167).

The concept of *homo economicus* was also addressed by G.A. Akerlof and R.E. Kranton in their book *How our identities shape our work, wages,* *and well-being* published in 2010. According to those authors, "economics of complexity" is a new sociological approach explaining human behaviours. Identity is understood as belonging to a certain social category that has its own norms, ideals and utility resulting from their implementation – utility which an individual seeks to maximise. Preferences (tastes) for some behaviours are defined by social norms. They are not only individual characteristics, but relate to whole groups such as other races, other castes in India, other tribes or even gender differences between people performing the same social roles (Akerlof, Kranton, 2010: 25–27).

The concept of *homo economicus* was criticised based on behavioural and social psychology research. In this area, Bruno Frey's works are of great importance. He accused contemporary economics of excessive mathematisation, formalisation and underestimation of interdependence of phenomena. He emphasised the consistent nature of man and the fact that man is motivated by the desire to maximise broadly understood utility rather than solely man's own advantage. According to this approach, the mechanism and motives of man allowed for presenting not only market but also social behaviour, not excluding altruistic deeds. In addition, he noted the fact forgotten by neoclassical researchers, namely that man has limited knowledge, is subject to institutional regulations, able to learn and can change preferences. B. Frey believed that the model of economic man should be rebuilt so that it could work successfully within interdisciplinary theories. According to him, *homo economicus* whose behaviour is determined and predictable based on motivators is not in conflict with the psychological approach. On the contrary, the psychological model of decision-making is perfectly compatible with the interpretation of the *homo economicus* concept. The economic and socio-psychological models of human behaviour have similar structures that are derived from a similar perception of man (Frey, Stroebe, 2001: 93–94).

As argued by T. Zaleśkiewicz (2012: 416), a confrontation between normative economic models and actual human behaviours in situations requiring decision indicates that the more difficult and complex decisions, the less one resembles the theoretical *homo economicus*. While simple financial choices tend to be consistent with models of rational behaviour, more complex decisions are usually non-optimum.

The "dusk" of the *homo economicus* concept is referred to in works by T. Sedláček and D. Orrel (2012) in the context of broadly understood economics. In turn, M. Shermer (2008: 119), who mentions dozens of results of worldwide research proving that the assumptions of rationality are false, even writes about the "death" of the concept of rational man.

The criticism of the traditional *homo economicus* model and its alleged imperfection and inadequacy in explaining economic decisions led to the search of alternative models by economists. In addition to alternative concepts described herein, a number of other ideas emerged, including *homo politicus*, *homo hobbesianus* and *homo darwinianus*, *homo orthodox*, *neo-homo economicus* and *paleo-homo economicus*, *homo erroneous* and *homo gustibus*, *homo sovieticus*, *homo religiosus*, *homo hero-*

icus, *homo corporativus*, *homo humanistic economicus* and *homo institutional economicus* (Tomer, 2001: 281–293), *homo postindustrialicus*, *homo globalicus*, *homo consumerus*, *homo cognitarius*, *homo postflaneur*, *homo maller*, *homo posturbanicus*, *homo timidus*, *homo postsacer*, *homo reciprocans* and finally *homo contracton*.

The presented changes in economics connected with the adoption of a particular picture of man are obviously only selected examples and do not aspire to form a holistic approach to these issues. They show, however, that many of these changes are only partial and do not grasp the economic man by referring to the basic dimensions of his or her actions. But even in such modest terms, strong links are visible between what economics thinks about man and the scope and often method of economic research.

Conclusion

Contemporary economics, since Adam Smith, has been based on the concept of rational choices made by economic men who seek to maximise their economic gains. The assumption on an individual's rationality implies the way of behaving where choices are made in consistence with a structured pool of preferences that are assumed to be entirely transitive and occur under conditions of perfect information and zero costs of information. It should, however, be borne in mind that the *homo economicus* approach does not regard man and his or her actions as they are, but creates a hypothetical and fictional idea of an individual. Man is a more complex social actor who not only takes rational and selfish decisions, but acts in accordance with social and ethical norms.

Homo economicus is a typical element of not only classical economic theories, but also those derived from the neoclassical trend. Nonetheless, it should be remembered that the usefulness of this model, though simplifying the structure of human actions, lies in the possibility of rationally explaining and predicting the actions of individuals operating in the economic life. It also has an advantage over more difficult models of quasi-rational entities because of theoretical generalisations and easily constructed models of rational and unemotional individuals (Thaler, 2000: 120). Undoubtedly, the adoption of the *homo economicus* concept allowed formulating all economic laws (e.g. the law of demand, the law of supply, and the law demand and supply) and provided the foundation for application of a theoretical model to explain complex economic problems such as consumer behaviour while making purchasing decisions.

Observing the evolution of *homo economicus*, significant differences can be observed between the Enlightenment idea of human rationality dominant at birth of economics and the contemporary neoclassical approach to economic rationality. A. Smith and J.S. Mill shared the Enlightenment faith in human progress through science – a rational product of the human mind and experience. In order to establish economics as an independent discipline, they sought to identify the motive for human action that would allow for distinguishing the science of economic activity from many other types of human actions. Maximisation of gains through rational behaviour set the direction for development of economics. Over time, however, the method began to triumph over the idea. A quest to formalise the economic discourse led to the definition of human rationality as a few simple axioms setting arbitrary standards of rational action. These axioms are: completeness, reflexivity, transitivity and monotonicity of preferences (Varian, 1997: 66–78).

A critical attitude to the concept of rational decision-making by *homo economicus* was expressed more or less firmly by representatives of economic schools competitive with the neoclassical approach. Depending on critics, it may be reformist or revolutionary. Reformist criticism is voiced by those scholars who consider the neoclassical approach to be too narrow and thus unrealistic but do not essentially question the assumptions on the rationality of an individual. Their criticisms aim to prove that decision-making in real situations is more complicated because of the lack of access to essential information about current and future conditions in the area on which the decision is made. As rightly observed by H. Zboroń (2012), that is why an individual must take actions the effects of which cannot be anticipated or controlled, contrary to the assumptions adopted by neoclassical scholars. Moreover, it may not be presupposed that only one optimum solution exists in a given situation.

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Summary

The Concept of Homo Economicus in Economic Theory: An Outline of the Evolution

The evolution and progress in economic studies that have occurred in the past five decades provide a theoretical basis for changing the paradigm of *homo economicus*. Today, economics is constantly expanding and becoming more and more diverse internally, combining its own reflections with other social sciences, chiefly psychology, sociology and philosophy. As part of the interdisciplinary exchange, new methodologies and scientific approaches are emerging that are directed towards a more holistic view of economic processes and the functioning of entities in the market. Thus, the classical axiom of a rational man is being abandoned, with the concept of an emotional man gaining in importance. This approach resulted in the emergence of alternative ways of understanding *homo economicus*.
This article aims to outline the concept of *homo economicus*. The issues herein do not describe its whole range, but only selected elements. The first part focuses on the origins and elements of the *homo economicus* concept. Further, the most important criticisms of this notion are discussed, together with the most significant alternative ways of understanding *homo economicus*.

Keywords: homo economicus, rationality, homo bi-economicus, homo satisfaciendus, homo sociologicus, homo socio-economicus, homo sustinens, homo sapiens economicus, homo reciprocans

Słowa kluczowe: homo oeconomicus, racjonalność, homo bi-oeconomicus, homo satisfaciendus, homo sociologicus, homo socio-oeconomicus, homo sustinens, homo sapiens oeconomicus, homo reciprocans

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