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### **THE GOAL OF EVOLUTIONARY AND NEOCLASSICAL ECONOMICS AS A CONSEQUENCE OF THE CHANGES IN CONCEPTS OF HUMAN NATURE**

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#### **Abstract**

The economics depends on the concept of human nature very strongly. The concepts of human nature can be understood as a set of assumptions made about the individual (on different levels: behavior, motives, meaning) and his interactions with other people, with groups and diverse institutions. It corresponds with the image of world people have. The concept of human nature together with an image of the world builds the basis of thinking about the economics and about such fundamental element of it as its goal. Therefore if those images of men change, the way of thinking about economics and their elements adjust to those changes as well. The goal of the paper is to present the impact of these alterations of image of man on the economics. This impact will be illustrated on the example of the evolutionary economics, which is contrasted with the orthodox concept of human nature persisting in the neoclassical economics – homo economicus. The method applied to this research is, among others, a content analysis of the most important texts developed within neoclassical and evolutionary economics. To reach this goal, the following steps will be conducted: firstly, the concepts of human nature will be defined in regards of their particularity depending on the discipline by which they are defined; secondly, the main differences between concepts of human nature in neoclassical and evolutionary economics will be analyzed, and thirdly the differences in understanding of the goal and field between those two schools will be explained as resulting from the diverse concepts of human nature. The analysis proved that the main differences in those economic schools might be explained by the changed assumptions about the human nature and the image of the world.

**Keywords:** Goal of Economics, Field of Economics, Concept of Human Nature, Neoclassical Economics, Evolutionary Economics

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#### **1. Introduction**

During the last years economists are more and more concerned with the changes within economics and its future in the sense of stages of development as described by Kuhn (2012). Those changes are characterized by the emergency of many different economic schools. This evokes the question, whether the mainstream economics has to change, and which paradigm is going to be dominant. The economists ask themselves as well, what factors are especially responsible for those changes and what consequences may result from those changes especially when it comes to the understanding of the goal, the method and the field of economics.

The changes in the concept of human nature (for reasons of the changes see Horodecka, 2014b) influence primarily the way of understanding of the economics within particular economic schools. Anticipating of those changes in the core of economics is more accurate, when knowing the impact of the concept of human nature on the foundations of

particular economic schools. Some authors see the future of economics in its evolutionary stream (Reinert, 2005; Glapinski, 2012). There are other reasons for considering evolutionary economics as an example. Growing popularity among economists in last decades, it's wide developed research program including micro- and macroeconomics and its very interdisciplinary character, which allows for more profoundly understanding of economic phenomena.<sup>1</sup> Such a scenario would as well cause a necessity of accepting other assumptions about the human nature. This causes as well changes in understanding of the goal of the economics.

The paper's central thesis is therefore that the understanding of the goal of the economics depends on the main assumptions about human being. The main goal of the paper is to present how and why changes in the concept of human being (image of man) have an impact on our understanding of the goal of the economics. This impact is taken on the example of neoclassic and evolutionary economics. The method adapted to reconsider this thesis – is a content analysis of the most important texts emerged within those schools, and interpretations delivered by particular economics associations which contribute or even build up a specific school of economics. Whereas the model of man in mainstream economics is formulated in an explicative way (Horodecka, 2014a) taking form of strict assumptions, in other schools the image of man is less explicative and often implicit. Therefore it is necessary to conduct the content analysis of some crucial works in evolutionary economics (Schumpeter and Röpke, 2006; Dopfer and Potts, 2009; Nelson and Winter, 2004; Ramstad, 1994; Cordes, 2007; Hamilton, 1991; Veblen, 1898; Boulding, 1978; Boulding, 1969).

As a result the paper is constructed in a following way: Firstly, concepts of human nature are defined, with respect of scientific disciplines, secondly the main differences between the concept of human nature in neoclassic model of man and that of evolutionary economics are discussed. In the third step the changes of understanding of economics resulting from those alterations are analyzed. In the last section – a conclusion, the differences between those two schools in regards of their goal are explained by differences in their concept of human nature.

## **2. Concept of Human Nature in Economics**

The concept of human nature is a very complex term and its meaning depends often on the discipline in which it is defined. However the following general definition reveals essence of this concept. Concept of human nature encompasses assumption which people make about individuals and groups, in order to reduce the complexity of the world (see Oerter, 1999; Fahrenberg, 2012; Haller, 2012). In the following paragraphs some main differences in definitions of human nature will be presented.

### **2.1. The Understanding of the Concept of Human Nature in Economics and Other Disciplines**

Philosophy referring to concepts of human nature focuses on ontological and epistemological status of human being answering questions who is human being and how he/she acquires knowledge and understanding. The middle-ages philosophy of Thomas of Aquino (1225-1274) with its roots in the ancient Aristotle (384-322), and the perennial philosophy (Lat. *Philosophia perennis*–perennial philosophy, see Huxley, 1945) bases on the ontological concept of human nature embedded in the cosmos of beings (ladder-of-beings), which includes such dimensions as body, soul and mind. The question about the human nature stands at the beginning of all philosophical questions. For instance Immanuel Kant (1724-1804) counted it to the fundamental questions of the philosophy, which are: "What can I know? What ought I to do? What may I hope?" (Kant, 2004). All these questions refer to the human being. Philosophy of science deals in particular with implications of concepts of human nature for the process of learning the truth

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<sup>1</sup> According to Reinert (2005) the today evolutionary economics bases on a tradition founded by the Austrian Joseph Alois Schumpeter (Schumpeter, 1954) and represents the most important challenge to the mainstream.

about reality and the world. It analyses different ways of finding the access to the world in the scientific way taking as starting point different models of man and of the world.

Psychology deals with the impact of a set of general theses and assumptions about the psychological properties of human beings on the cognition, the way of perceiving other people, the understanding of what human being is and of his/her way of functioning in different social contexts (Kozielecki, 2000, 1997). Different psychological traditions deliver here various answers to those questions what in the end has an impact on the way of viewing other people and treating them within therapy. Therapists coming from different psychological traditions have different understanding of the same behavior of people and advice them in a different way. Famous psychotherapists like Sigmund Freud (Freud and Mitscherlich, 1965), Erich Fromm (Fromm, 1961), Viktor Frankl (Frankl, 1997), Carl Rogers (Rogers, 1957), Burrhus Skinner (Skinner, 1976) described people in a completely different way. For instance Carl Rogers described people with such adjectives as "positive, forward-moving, constructive, realistic, trustworthy" (Rogers, 1956, p.20). Sigmund Freud, on the other hand, held humans in relatively low regard with a few exceptions, human nature is basically worthless (Freud, 1960). Another approach to those concepts suggests some theories developed within differential psychology. Specific concepts of man are combined with a preference for a certain personality theory and a corresponding orientation in psychotherapy (Fahrenberg, 2012). McAdams and Pals in their models perceive the concept of human nature (based on evolutionary psychology, for them the newest stand of the knowledge about human) – as a basis (McAdams and Pals, 2006). Biggest differences in concepts of human nature are not among particular theories, but between main paradigms of psychology like humanist, behavioral, cognitive and psychoanalytical.

According to Fahrenberg, the research of concepts of human nature belongs to the core of personality psychology, development psychology, social- and cultural psychology and knowledge psychology (Fahrenberg, 2004).<sup>2</sup> This is explained by the fact that among other reasons, concepts of human nature shape our attitudes and our way of explaining and categorizing of humans behavior (Lachowicz-Tabaczek, 2004) and their motivation.

Economics refers to the concepts of human nature in first place as integral aspect of explaining economic processes and phenomena. In the second place they can be treated as the basis for the creation of macroeconomic models of economic development. However there is no consensus of understanding of this concept within different schools of economics. Neoclassic economics perceives the concept differently as for instance Keynesianism (Keynes, 1937) or capability approach of Sen (1985). This is because those schools base often on different concepts of human nature, and because changes in those concepts affect the whole economics (Horodecka, 2012). Even if the models of human nature aren't here so complex like in psychology, there is a tendency to expand very reduced models of men like homo economicus by more human attitudes (heterodox man).

Management sciences treat concepts of human nature as basic assumptions about an employee in order to optimize the actions taken by managers to take social influence on employees and to motivate them. Adoption of a specific concepts of human nature implies a different set of practices of treating the employee (Turek, 2010, 2011). A manager undertakes different actions depending on the assumed concept of human nature. This is explained for instance by one of many dualistic theories of human nature (Staehle, 1973; Knowles and Saxberg, 1967), besides, the dualistic way of thinking is characteristic of the time thinking of the Berlin Wall during the Iron Curtain, like the theory X and Y of McGregor (McGregor, 2002; 2006), or Theory Z introduced by Ouchi (1981). The focus on external motivation or intrinsic motivation may be a consequence of adopted models of human nature. In consequence, managers use different methods of motivating; for example, managers having X-concept of man, tend to use external motivating techniques and managers having Y-concept of human nature – intrinsic motivation techniques. Also managers having Y-theory of man, are more likely to show personal interest in employee, and don't treat them as a labor-resource only. Such

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<sup>2</sup> More about psychological view and details about concepts of human nature are provided by following authors Asendorpf (2007), Groeben and Erb (1997), Oerter (1999) and Wrightsman (1992).

concepts are deeper analyzed by implicit leadership theory and leader-membership expectations theory (Liden *et al.* 1997; Deluga, 1998).

Summarizing we can say that different disciplines focus on different aspects of human nature: the philosophy – primarily on the mind dimension, psychology – focusing above all on the way of experiencing and sensing things on the soul-dimension (but as well on the behavior as a result of those experiences), and the economics concentrating most of all on the body dimension – by dealing mainly with the individual behavior in economics as a result of very narrow form of motivation.

## **2.2. Aspects of Concepts of Human Nature in the Economics**

Economics discussing the concepts of human nature refers to different aspects of those concepts: to a way of perceiving real people acting in the economics; to a mode we assume people think about others, what has impact on their behavior or to the actions assumed by the theory (concepts of particular sciences, or schools of economics, which differ in their assumptions about human nature). The fundament of each humanistic science like politics, sociology, and economics is an explicit or implicit concept of human nature.

Various disciplines of knowledge prefer different concepts of human nature – descriptive, positive or normative. The more each discipline is orienting itself on the ideal of natural sciences, the more prefers positive models of human nature by taking form of simplified models or set of assumptions allowing for constructing abstract theories, and the more humanistic it is – the normative concepts. However descriptive, close-to-reality concepts as well could lay foundations for both mentioned kinds of concepts. In social sciences we encounter therefore all approaches to the concepts of human nature – the descriptive (basing on observation), the positive and the normative one, although the last approach is sometimes wrongly criticized for its unscientific character, and their influence on behavior is underestimated (Haller, 2012; Kahneman and Tversky, 1984). Each statement about the person in general is on the same time part of inter-subjective self-description and expression of project, who the person should be, or who the person wants to be for self (Ulrich, 2008). In first place we ask, who the human being should be, and then what he is (Guckelsberger, 2006). Insofar many economists focus less on the problem, what are common concepts of human nature, but far more on theoretical assumptions economists make.

Summing up we can say, that there are two basic ways of understanding the concepts of human nature. Firstly, they can be understood as assumptions made by real agents in economics, and secondly as assumptions which economists make about agents dealing with economics. In this context the focus of this paper lies on the second category of the concepts of human nature. It is because the goal of the paper is to explain the impact of those concepts on the field and goal of the economics.

Although the way people are in the reality and the way they think about themselves has an impact on the way they think about the agents acting within a theory, there is one additional factor modifying our understanding of human nature and this is the way of understanding the discipline (Horodecka, 2011b). Therefore perceiving economics as a natural science and looking only for a historical abstract rules lead to a discrepancy between lay-images of man and scientific ones. Those differences are much stronger as in the case when economics were perceived as a historical, humanistic or social science. In the last case we pursuit the goal of understanding the given phenomena in its particular context but we don't set a goal of explaining facts in an universal way as in the first approach what results in looking for very abstract and reduced ways of looking on human nature and moreover very generalized ones.

Therefore the orthodox economics, especially neoclassical one is often criticized for making assumptions about human nature, which differ far more from assumptions people make. The context-embedded heterodox has a more reality-close concept of human nature. The last issue concerning concept of human nature is question about their compatibility with the true nature of human being. This depends on the experience people have and knowledge about human being and its availability.

### **3. Changes in the Concept of Human Nature – From Homo Economicus in Neoclassic Economics to Image of Man in the Evolutionary Economics**

#### **3.1. Comparing Concepts of Human Nature: Basic Dimensions**

In order to compare different models of human nature we need some common understanding about the ontology of human being. It would be difficult to juxtapose various approaches without any frame. The following paragraphs shall deliver such suggestions of basic elements we should consider speaking about human being based on the long philosophical tradition. However this common ontological understanding of human nature is exactly what the anthropology is lacking. Unfortunately there is still no general discipline dealing with human being – philosophical and psychological anthropology are still working separately (Scheler, 1991; Fahrenberg, 2004). The concept of human nature encompasses not only the way we are speaking about an individual world – micro-cosmos (consisting of three basic dimensions of the individual: body- soul -mind), but as well the characteristics about their relation to other people, to the human world (social world), and connections to other beings in the world, like nature, or supra-natural world (worldview, macro-view), which has often a philosophical background.

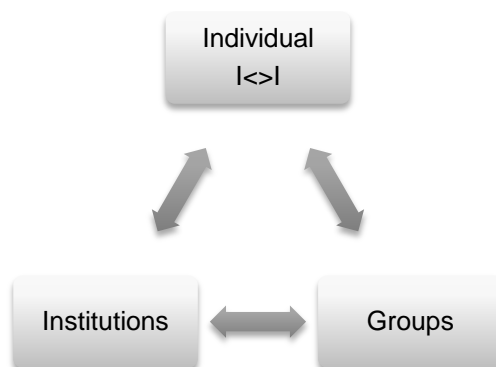
Discussing the individual dimension, various disciplines are dealing with the human being considering some specific dimensions of individual. Biology and physiology is referring to human as a biophysical unity analyzing the biophysical functions of those complex organisms. The psychology is more interested in the way people receipt and feel the reality focusing on the soul as a place of psychic processes which affect behavior and in result biological and physiological functions (and vice versa). The philosophy may be more interested in human mind – the way people understand the world, create common values and norms and transcendent themselves (Maslow, 1997; 1994), what is expressed in the idea of God or unity. Anthropology seeks for the ways of unifying those various perspectives distinguishing usually about three basic dimension in human being: body, soul, mind (Schilling, 2000; Wilber, 2000). The body dimension refers to physical constitution of man (it-dimension, object, physical object, which can be observed by a departed observer). The soul is a dimension which refers to experiences, psychic processes occurring within individual, which we can't measure directly only by using inter-subjective methods, for instance self-revealing and observing. The mind – dimension is accessible usually only by self-revealing of the person. Although the neurobiology tries to find objective counterparts in the brain (Analyzing active places in the mind, after giving some impulse from outside, or during the person performs some activity), the meaning of those brain-activities can be provided only if the person allows access to that context – by revealing himself/herself. Including mind as an important ontological dimension of human nature presupposes the existence of higher instance, which allows for process of thinking. The mind-dimension refers as well to the instance responsible for the transcendence of its own individuality, where ethical, rational decision may be taken, because out from this level a person is capable to consider and even criticize own attitudes. Summing up, concepts of human nature in a narrow way refer only to the individual level (micro-perspective) and in the broader way to the basic relations to supra-nature and nature (worldview), and other human (social world), which constitute as well what the person is.

In the following section those levels are explained in more detailed way by using a metaphor of discovering the world by an extra-terrestrial.

1) By doing the first step on the journey to the world in order to build a worldview, an extra-terrestrial may ask how the world is build and therefore ask about the place of human being in the cosmos. Here it would ask probably about the relation of humanity to God and/or other spiritual powers (for instance do they believe in the existence of such powers or not, and if they are relevant for everyday life). Another concern would be the relation to animals, plants and other parts of the natural world (are they equal subjects or subordinated objects?). Such a worldview may have an influence on other levels of the concept of human nature. It can be assumed that those relationships base on dependence or independence.

2) Looking closer on the earth an extra-terrestrial may arrive to the level of the social world, where he will realize that human race enter relations with each other. Now he will be eager to characterize those relationships between people. The picture below visualizes basic

relations: individuals (and relationships between individuals) with groups and institutions. Following aspects may be here of importance: whether the relations base on reciprocity, egoism, on altruism. Are people formed by others, or independent? What is a central focus: an individual, a group or institutions formed by the group? (for example, collectivistic culture or individualistic one, compare for instance Hofstede, 1980; Hampden-Turner and Trompenaars, 1993.



**Figure 1. Social World**

Looking closer on groups he would probably see not only similarities characteristic for all human race, but the differences and heterogeneity, what would lead him to the question, who is the individual? In order to speak about the individual, it's convenient to differentiate in human being various dimensions (Table 1). Those dimensions can be distinguished by approaching the human being step by step from the surface into the depth. Starting firstly by taking a perspective of an outsider, we can perceive then human body, its physical constitution, and behavior. Then, if we want to get deeper, we have to ask for the permission and enter into the dialog with him. Without this permission, we aren't able to discover neither his/her intentions nor his/her motives (implicit and explicit). In the end (and again only with the permission and good will of the individual) we reach the dimension of the mind – a place for reason and for central values and spirituality. This is a platform were people can find a possibility to find some basic common understanding of themselves. This dimension refers to the meaning of life. Following general remarks can be of importance: do the people are perceived as homogeneous, or heterogeneous. Are many dimensions differentiated?

**Table 1. Concept of Human Nature: Dimensions**

Human being-levels	Aspects	Method	Discipline
Body	Physical aspects, Behavior	Objective 3 <sup>rd</sup> person perspective	Social disciplines: economics, sociology
Soul	Motives	Subjective, inter-subjective 1 <sup>st</sup> person perspective	Psychology
Mind	Meaning/ Sense of life	During last time some methods were developed which help to measure mind-awareness problems from 3 <sup>rd</sup> person perspective	Philosophy

### **3.2. Differences between Concepts of Human Nature in Neoclassical Economics and Evolutionary Economics**

#### **3.2.1. Worldview: Paradigmatic Differences**

Concepts of human nature have a paradigmatic character within both discussed economic schools. What are the most important differences between concepts of human nature in the neoclassical economic thought and the evolutionary economics? In both economics schools the concepts of human have paradigmatic character for this economic school.

In the neoclassic economics the view on human nature is a result of the paradigmatic change, which took place in the end of the 18<sup>th</sup> century. Due to this change, the economics has started to be perceived as a separate discipline, distinguished from practical philosophy (similar change occurred later, when economics started to separate itself from other social sciences). Economics started to identify itself as a discipline basing on some assumptions and by using deductive method. This process is continuing one and deepens in neoclassic thought of economics, where metaphors, theories, ways of thinking stop to be derived from the philosophy, and start to be oriented on the ideal of physical science, which is focused on discovering of general laws. In order to determine these laws, some assumptions about the objects we describe have to be made. In Newtonian physics that are physical objects, which have some properties (for instance mass) and obey to some laws (like the law of gravitation). In similar way the economics formulate assumptions about the economic world and their economic objects (primarily they concern the human behavior). Looking for general laws governing behavior neoclassical economics has developed for instance the 'law' of maximizing the utility. Similarly laws concerning social world are developed like for instance that the focus on own interests by individuals lead to the best result for the whole society. This have an impact as well on the worldview which is based on the law of equilibrium – steady-state point, to which all processes caused by free movements of objects (homogenous but independently acting actors) are approaching. The best physical metaphor, which can be used here to illustrate this idea of a balance are laws of thermodynamics. Economic objects (actors) like independent particles are behaving in a specific way, which by force of the nature law, leads always to the optimum, balance point. In the textbooks of economics this paradigm is often presented in form of a picture of an object, which is always returning to the steady-point (Bartling and Luzius, 2000). Moreover the usage of mechanistic metaphors, and the separation of living systems leads to perceiving economic growth as a process without end, which can't and shouldn't be stopped by the requirements of the ecological system.

The different paradigm is used by the evolutionary economics basing on biological metaphor, using such ideas as the Darwinist variation, selection and heredity or Neo-Darwinist paradigm of mutation and selection (Andersen and Holm, 2014) there are three sorts of selection: stabilizing (removing others), directional (coexistence), and diversifying). The metaphor for this paradigm is so different that it resembles almost the paradigmatic change of Copernican system almost. The parts of the economic system aren't perceived any more as separate fixed parts independent from each other and unchangeable, but all are changing in time, and through those modifications happen adaptations to the environment. All actors are therefore heterogenic, changing in time and place (cultural factors) and adapting to the changes, which happen in the environment (other people, nature, culture). Those who adapt best are surviving and in this sense we can speak about progress. For the evolutionary economics the world is a complex system of interdependent heterogenous parts, is an open-system (or autonomous in sense of Luhmann – see Luhmann, 1994), interdependent and basing on the principle of self-reorganizing change. Similar to the ecological economics, evolutionary economics is skeptical about the neoclassical idea of economic growth. Economics shall be perceived as a part of whole ecological system, what means that it can't be extended without end. The elements which evolve are complex mechanisms, the multi feed-back network formed by genes and proteins for control mechanism, sustaining a diversity of genes and adapting to various environmental changes (Kaneko and Kodama, 2004; Nishibe, 2006). This idea is expressed by the concept of stratified ontologies (Lawson, 1997) including bidirectional causality and emergence of novelty. Economic phenomena are exemplified by the Lamarckian-

Darwinian social evolution, the principle of stratified realism, which assumes that social macro systems exists as multi-polar and multi-layered structures (multi-lattice) and that there is the permanent loop between micro-level (behavior of agents) and macro-level (rules, institutions, economic outcomes), replacing the idea of genetic mutation and natural selection (appropriate only for very simple organisms). Each constituent of such a layer interacts horizontally with other constituents and is affiliated with multiple constraints on the upper level. Therefore the narrow biological metaphor has to be modified. The heredity should be understood as enduring and reproducing of some relations: rules, institutions, organizations, routines and customs. Social quasi genes have to be assumed as more various than biological genes. Furthermore variation can't be understood as mutation or crossing but as aberration from the norm – as innovation. The social domain is a fruitful ground for adapting of the idea of Lamarck inheritance, which didn't passed the requirements of empirical founding in biological world. In consequence the evolutionary economics world consists of: (1) wide range of stratified entities of quasi-genes: customs, routines, conventions, social rules, institutions and economic systems; (2) bidirectional causal relations between the micro-level of behavior of agents and macro-levels of the emergence of rules, institutions and economic outcomes. The process of evolution is modified by such factors as: improvement/innovation through imitation and learning and differentiation/diversification by division of labor/ knowledge. Those paradigmatic differences can be summarized as follows: whereas the nature of the world in neoclassical economics can be characterized by stability, the worldview of evolutionary economics can be described by permanent change.

### 3.2.2. Worldview: Philosophical Background

Worldviews have usually a philosophical basis. For the neoclassical economics it is a dualistic system, supported by deistic religious thought, which base on the idea that the material world is a perfect machine, developed by God (Descartes *et al.* 1996). In order to understand it's functioning, the laws of nature have to be discovered in the objective way. The other part of this dualistic world is a spiritual one and encompasses diverse feelings and tensions, which however can't be described. The philosophical fundaments of the social world are delivered by Hobbes "Leviathan", (Hobbes and Macpherson, 1987), which stresses egoistic and competitive character of human relations. The basic idea for the individual dimension grounds on the hedonistic and utilitarian thought (Bentham and Mill, 1973), which has origins in ancient Greek philosophy (by Epicures).

The philosophical basis of evolutionary economics can be traced back to Heraclitus, who assumed that the principle of world is the permanent change. We can't drop two times in the same spot of water. Evolutionary economics assumes in a similar vein, that the whole world, systems, culture, economic process are governed by the change. Further philosophical sources of evolutionary economics could be probably found by the philosophy of life<sup>3</sup>, and by Schopenhauer's idea of the universe as an irrational place (Schopenhauer, 1819). It is assumed that the world is in permanent change and we can't drop in the same spot of water two times. However the best accountable philosophical setting of the evolutionary economics is the Darwinist theory (Darwin, 1859; Darwin and Wallace, 1858; Wallace, 2007), which although wasn't meant to be the philosophy, thanks to its meaning to philosopher can be treated as such. According to it all nature inclusive human being is perceived as a river of genetic material, which is evolving by means of selection, variation and self-replication. Darwin's Darwinism or Neo-Darwinian Synthesis, can be put in terms of five philosophically distinctive themes: (i) probability and chance, (ii) the nature, power and scope of selection, (iii) adaptation and teleology, (iv) nominalism vs. essentialism about species and (v) the tempo and mode of evolutionary change (Lennox, 2010). Dawkin's interpretation of this thought is explaining the sense of the world as passing the genetic material and making it with each stage of evolution more adjusted (Dawkins and Jannasz, 1995; Dawkins, 1981).

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<sup>3</sup> Its meaning for economics is described in Horodecka (2011a).



The evolutionary idea of the world bases not only on philosophical background but as well on economic writings of the predecessors of evolutionary economics: like Adam Smith especially in the Theory of Moral Sentiments (Smith, 2000) and his view on world based on the empathy as basic motivational force of human nature for engaging in social activities, which is harmonized by the forces of the market (Smith, 2005). Later Mandeville (Mandeville and Hundert, 1997) and Friedrich von Hayek (Hayek, 1978) are referring to a spontaneous (as opposite from planned by people, but being result of people activities) order of human atoms meeting on free market (Coyle, 2007). We can find this thought as well by other Austrians as for instance by Carl Menger (Menger, 1883; 2006), for whom social institutions were result of historical development, of natural process, and not of human pragmatic calculation (Langlois and Everett, 1994). Generally speaking, the older historical school was especially attached to such a view on society, stressing above all the role of the specificity of culture and historical contest for the development (Roscher, 1864; Roscher, 1874; Hildebrand, 1998; Knies, 1883).

The idea of combining economic analysis with the theory of biological evolution comes from Thomas Malthus (Malthus, 1826). According to Glapinski (2012), the ideas of Smith and Malthus were a basis for thinking of Darwin and Wallace who adopted the ideas of market to the organic world. The term evolution was taken into economics and social sciences by Herbert Spencer (Spencer, 1879), who represented the idea, that the process of development of individual organisms has to be accompanied by some common way of development of social organisms. Those ideas concerning evolutionary interpretation of biological phylogenesis had an influence on such European continental economists as Karl Marx (Marx, 1990), Gustav Schmoller (Duindam and Versteegen, 2003; Schmoller, 1998), Werner Sombart (Sombart, 1967), Max Weber (Weber, 1922) and later on Schumpeter (Schumpeter, 1954), Glapinski (2012). Anglo-Saxon economists were influenced by this evolution idea as well. According to Alfred Marshall economics can't be treated as an natural science but has to orient its methodology on biology (Marshall, 1989). Marshall assumed that the society underlies changes and therefore the theory shall base on the historical analysis. Thorstein Veblen (father of institutionalism) made the important step towards the adaptation of evolutionary thought into economics. He discovered and adapted the evolutionary thought for social sciences. The institutions can be therefore treated a social equivalent of biological genes. A social-economic evolution is a process of natural selection which occur through the selection of institutions (Cordes, 2007). He was asking why economics is not the evolutionary science (Veblen, 1898). Other institutionalists developed his ideas like John Commons, who stated that social and economic evolution resemble an artificial selection (made by man) which has to be differentiated from the natural selection in biological sciences (Ramstad, 1994). Neo-institutionalism deals as well with the role of evolutionary processes and institutions in shaping human behavior. The renaissance of evolutionary economics was marked by Kenneth Boulding (Boulding, 1978). But the real founder of evolutionary economics was Joseph Schumpeter (Schumpeter and Röpke, 2006; Schumpeter, 1954). The table below (Table 2) presents most striking differences between worldviews in neoclassic economics and evolutionary economics.

**Table 2. Worldview in Neoclassic and Evolutionary Economics**

<b>Worldview of neoclassic economics</b>	<b>Worldview of evolutionary economics</b>
<ul style="list-style-type: none"> <li>• World is stable in long time, only in short-time – not always balance</li> <li>• There is equilibrium in a thermodynamic sense, an optimal state</li> <li>• The entropy is 0</li> </ul>	<ul style="list-style-type: none"> <li>• World is changing (dynamic); the law of a self-organized change and self-transformation</li> <li>• no equilibrium &amp; no optimal state</li> <li>• the entropy is &gt; 0</li> </ul>
<ul style="list-style-type: none"> <li>• Equilibrium economics</li> </ul>	<ul style="list-style-type: none"> <li>• Non-equilibrium economics</li> </ul>
<ul style="list-style-type: none"> <li>• Mechanistic metaphor</li> </ul>	<ul style="list-style-type: none"> <li>• Biological metaphor adapted to social processes</li> </ul>
<ul style="list-style-type: none"> <li>• Newtonian/Cartesian image of world</li> <li>• The science is dealing only with material objects</li> <li>• There are no intersections between material and non-material world</li> </ul>	<ul style="list-style-type: none"> <li>• Darwinist/neo-darwinist image of world</li> <li>• The science has to deal with material and non-material world as carriers for non-material (information, knowledge) similarly to non-material gens (=information) carried by material objects (0-1)</li> </ul>

<ul style="list-style-type: none"> <li>• Development is understood mainly as quantitative growth</li> </ul>	<ul style="list-style-type: none"> <li>• Development is understood as qualitative growth: the amount and quality of knowledge is growing</li> </ul>
<ul style="list-style-type: none"> <li>• Permanent growth possible because economic system is perceived as independent from other systems</li> </ul>	<ul style="list-style-type: none"> <li>• Growth is a part of other systems, of ecological at most, and so is constrained by it</li> </ul>
<ul style="list-style-type: none"> <li>• World consists from separate independent objects</li> </ul>	<ul style="list-style-type: none"> <li>• World is like holon (holistic approach) consisting of interdependent net of objects</li> </ul>

### 3.2.3. Concept of Human Nature: Relation to the World

The relationship between human beings and the world seen through spectacles of the neoclassical economic thought is atomistic one. Humans like atoms are part of the world but in the same time, they are relatively independent (although atoms are a part of different greater parts, they remain the smallest part of the world - electron, proton, positron excluding). The place of human individual in the society can be compared to the place of atoms in the world – they stay independent and self-sufficient. On the contrary in the evolutionary economics due to the dominant biological metaphor it's assumed, that human being is continuously shaped by the world, building a unity with the world. Similarly to the cell, which can't live without an organ who's part it is, and similarly to the organ, which can't live alone without human being, so human being is dependent on other people, the family and social and political institutions and the state and can't live without them (like *homo politicus* by Aristotle, see Aristotle and Everson, 1988; Faber *et al.* 2002). The table below (Table 3) presents some crucial differences between the relationship between human and world.

Another aspect of the relation between human and the world is the access to the information. In the neoclassical economics it's assumed that human being has a whole access to information and is completely capable to transform it, this allows him/her to take rational decisions. A different attitude develops the evolutionary economics, assuming that the human being doesn't have a whole access to the economics and in order to overcome this difficulty, creates rules, which help him to cope with the reality. Moreover the access to information is hampered by internal factors lying by the individual who can't transform all this info.

**Table 3. The Relation between World and Human Being in Neoclassic Economics and Evolutionary Economics**

	<b>Neoclassical economics</b>	<b>Evolutionary economics</b>
Dependency/ interdependency	<ul style="list-style-type: none"> <li>• Independent (atomistic)</li> <li>• Humans don't depend on environment</li> </ul>	<ul style="list-style-type: none"> <li>• Interdependent, dependent</li> <li>• Humans depend on environment</li> </ul>
(un)predictability/ (in)security	<ul style="list-style-type: none"> <li>• World is something predictable and secure for human beings and can be described by laws</li> </ul>	<ul style="list-style-type: none"> <li>• World is something unpredictable and insecure therefore people look for some patterns which are working</li> </ul>
Access to information	<ul style="list-style-type: none"> <li>• Whole access to information resulting in rational decisions</li> <li>• Human is a perfect machine, which can transform all information</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced access to information</li> <li>• Transformation of information is as well not perfect (bounded rationality), base on rules</li> </ul>

### 3.2.4. Concept of Human Nature: Social Relations

There are many vivid differences in the view of social world. Many of these are a logical consequence of the worldview and paradigmatic differences. In the neoclassical economics the social world consists of self-interested and self-sufficient independent competitive beings, which form their preferences independently (Kliemt, 2004; Schramm, 1996; Kapeller, 2008; Manstetten, 2000). Therefore the relations base on egoism and competition about limited resources. In the evolutionary economics the society forms the individual by influencing their preferences and provides both altruistic and egoistic patterns of behavior. The interest of the group is relevant for the survival of the society and of the individual. Therefore social relations base both on the cooperation and competition (Table 4).

**Table 4. Relations between Human Beings in Neoclassic Economics and Evolutionary Economics**

<b>Neo-classical economics</b>	<b>Evolutionary economics</b>
Preferences are coined individually	Choices of one person are influenced by choices of other/society
Egoistic-self-interest	Egoistic and altruistic interests
Self-sufficiency	Interdependency
Competition	Cooperation and competition

### 3.2.5. Concept of Human Nature: Individual

Neoclassical and evolutionary economics differ extremely in their general assumptions about the human being (Table 5). Evolutionary concept of human nature is very close to that suggested by institutional economics, especially when it comes to the limited, deliberative and calculative capacities (Hodgson, 2007). Neoclassical economics start their analyses not with the real man but a standardized homogeneous and representative being (Aruka and Mimkes, 2006), not congruent with the reality (we speak here with Georgescu-Roegen, 1971 about fiction of homo economicus) with the economic man the rational (only goal-oriented rationality counts), self-sufficient and egoistic optimizer – calculating the best result for him/herself, performed by the nature in that way. The nature-nurture problem is here solved in credit for nature. Furthermore it's assumed that human being is stable, context free and doesn't change in time and space, doesn't change in the core. Dualistic vision of human being makes economics dealing only with one part of individuals – the materialistic part, which resembles an atom, vision of man is not only very reduced one (to the basement Klimczak, 2000).

Just the opposite is assumed in evolutionary economics where at the very beginning we deal with a complex, reality-close man, satisfier, who doesn't look for optimizing their needs but to be in balance with the environment, sub-rational, not-self sufficient, both egoistic and altruistic, adapting to the environment, trough learning and thus changing. Moreover it can be treated as a holon having many different dimensions. The nature-nurture problem is solved in evolutionary economics by respecting both genetic influence (nature), and adapting through learning (nurture). There is no place for individualism, because the individual is embedded in culture, time, society, world, and environment is always perceived in a context. Besides the focus is here not put on the individual but the 'gen' – information in it, which takes form of knowledge and is passed to other organisms. In this sense human being is less fixed object but more a process, which changes with time/place and depend on the environment. It means that the human being is very heterogeneous, what is as well due to the fact of differences caused by culture and time which aren't neither accidental nor random (Aruka and Mimkes, 2006). This assumption is central for understanding of any phenomena for example for growth theory.

**Table 5. General Assumptions about Human Being**

<b>Neoclassical economics</b>	<b>Evolutionary economics</b>
Natural-man - rational, self-sufficient, egoistic, pre-formed so by the nature (nature)	Evolutionary man – sub-rational, not-self sufficient, egoistic and altruistic, adapting to the environment by learning (nurture)
Individualism, context free standardized individual, representative	Embedding in culture, time, society, environment, transfer of knowledge is central
Homogeneity	Heterogeneity
State, unchangeable	Process, changing (over time and place)
Only material side of human nature counts	Material and idealistic side of human nature are considered
Dualistic concept of human being (economics is dealing only with the material part) - ATOM	Holistic concept of human being – HOLON
Far from reality	Reality-closeness
Reduced	Complex
Optimizers	Satisfiers

Looking more closely on human nature we can mention differences on each level (body, soul and mind) between those economic schools. The body dimension is for the neoclassic economics the most important level. It is assumed here that the human behavior is egoistic and oriented less on real needs, but on preferences, what means that theoretically a person can alter any needs according to its preferences. Changing preferences is only a logical problem, because any need can be replaced by another product. This replacement is ruled by the preference curves (whereby only trade-able end results count). This is very unrealistic assumption according to the critics from evolutionary economics. In the reality some of needs can't be in fact replaced, for instance the need of fresh water or air. It is because they are made by biology and society and some of them have to be covered by necessity, and can't be removed, only surpassed, modified (biological reasons). Evolutionary economics has a broader view on needs including as well process needs, like labor for instance. Human being is acting in order to fulfill those needs both egoistically and altruistically.

The differences are visible as well on the soul-dimension, consisting of feelings, emotions and motives. Whereas neoclassical economics is focusing on pleasure or utility as the main motive, the evolutionary economics considers various motives and values acknowledging the fact that some of them ground in the moral. By doing so, the evolutionary economics resembles other heterodox schools (for instance Sen, 1987). All these motives are changing all the time through interactions with other people.<sup>4</sup>

The last dimension is the mind – a place for reasoning and spirituality. In neoclassical economics mind is used only as an instance for calculating right decisions basing on preference curves and available resources. Only the goal-oriented rationality is taken under consideration. Neoclassic economics takes many implicit assumptions about human abilities concerning rational choice, data collection, cognition, computation and execution assuming perfect information (zero information gathering cost), infinite computational capacity (zero calculation cost) and unlimited execution capability (zero management cost) (Nishibe, 2006). The assumption of the independence of individuals in the process of decision –taking leads to the understanding of knowledge as a resource, like money, labor invested in a production process, without explaining the process of its acquisition.

The opposite is the case in evolutionary economics, where the mind isn't reduced to the function of calculation of utility, but fulfills an important role of self-actualization (similar as in humanistic economics). Besides it's calculating power is not so perfect as in neoclassical economics due to the assumption about the bounded rationality coined by Simon (1957), which points to the fact that during we take a decision our rationality is reduced by incomplete information, cognitive boundaries, time boundaries. Instead of rationality – the actors (people, firms) use routines<sup>5</sup>, which take shape of routinized behavior, conventions social rules of conduct (Nishibe, 2006). Those rules are a persistent feature of the organism and determine its possible behavior, moreover are heritable. Organisms with certain routines may do better than others, and if so, their relative importance in the population (industry) is augmented on time (Nelson and Winter, 1982). The knowledge can't be bought like resource but is a product of the society and can be only assimilated by learning (Söllner, 2001).

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<sup>4</sup> The idea of endogenous preferences in evolutionary economics can be traced back to the institutional economics, the same concerns the idea of bounded rationality.

<sup>5</sup> Nelson and Winter state "in our evolutionary theory, these routines play the role that genes play in biological evolutionary theory" (1982, p.14).

#### **4. Understanding of the Goal of Economics as a Result of Changing Model of Human Being**

The understanding of economics depends on the concept of human nature what can be seen in the popular definition of economics (Robbins, 1932) which reveals the basic assumptions about human nature discussed before. Whereas the evolutionary economics may be defined and understood in threefold sense: 1) explaining economy as evolving system (what means that evolutionary economics is evolving itself), 2) as economics of evolving economy and 3) as the theory of evolving economics (Nishibe, 2006). Glapinski (2012) defines the evolutionary economics as a set of economic concepts, which look for ways of theoretical and empirical interpretation of all economic processes (above all of development and crisis) using the analogy of the process of biological evolution.

Concepts of human nature affect moreover other parts of economics most of all its goal, field, methodology, methods and basic theories. The aim of the paper is to focus on its impact on the goal. The understanding of the concept of human nature influences the way of perceiving the goal of economics. Whereas mainstream economics defines its goal (due to the assumption of rational and utilitarian oriented concepts of human nature) as explaining the outcomes of human behavior on markets like production, consumption, exchange, the evolutionary economics aims to explain how does knowledge, preferences, technology and institutional change within a historic process take its effect on the state of economics in a particular time, what is the consequence of assuming that human being is shaped by time and place.

These basic differences in perceiving a goal will be discussed in detail considering goals in microeconomics, macroeconomics and referring to production, consumption and exchange. The neoclassical economics due to the assumption of independence considering only materialistic needs of human nature doesn't consider as well the social and ecological setting of economics and of economic growth, focusing only on material aspects of economic growth. The reason why it's so difficult to incorporate the thought of sustainability in the theory building of neoclassical thought is a missing link between on the one hand the economic man together with his economic world and on the other hand his social and environmental world which could give reason for sustainability and help to emerge institutions and rules. Those institutions and rules would help to prevent environmental problems in more effective way. The focus lies here on explaining how the growth of the economy can be answered by securing the system which ensures that the strongest most efficient person survive and explaining how the growth and stability grows by such measures. It means that only the efficiency counts (more goods/services by using the same amount of resources). The efficiency thinking of neoclassic economics is often criticized as working only for individual level but causing negative results for higher levels as social or ecological level for instance. This can be visualized by the example of cancer cells, which grow very efficiently and fast, but lead to the destruction and often to a death of the whole organism. The same may be the case in the contemporary economy if economists keep believing in efficiency without taking into account other factors, like the ends of activities. The efficiency thought lies beyond the GDP, concept measuring all products and services – even those who have a negative impact on people and nature. The similar bad effect on the country with great supply of labor force may have using very efficient technology.

Due to the fact that the evolutionary economics perceives a human being in a complex and dynamic way, understands the economic growth as a goal of economics in much more compound way (Table 6). In fact it is perceived as a development of the economic system (which is a part of ecological system) and not as the individual growth of some of its parts. Both individual and social systems are understood as open autopoietic systems in sense of Luhmann (1990).<sup>6</sup> Although those systems stay in the exchange with environment and absorb impulses coming from outside, all those processes of exchange are controlled by the system. It's assumed here that each system reacts differently on the same impulses. In the case of the neoclassical economics is completely different – there is assumed that there is only one system 'market' working always in the same way. The evolutionary economics aims therefore to provide

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<sup>6</sup> It can be compared to Maturana and Varela (1980).

the answer on ways and methods of reaching a qualitative growth. This growth is understood not only in terms of enlarging the quality of goods and services, but as well as growth of knowledge and efficient rules, better environment, which can ensure the sustainability for the economy. Perceiving human being as part of environment depending on the ability to adapt to this environment, leads to a further goal of economics and this goal is to discover those rules and constraints of adaption to changing environment and explaining the process of emerging of new rules.

The development and surviving depends far more on adjusting to the environment by multi-feedback networks in the living organism than by the simple mutation and selection. On the level of macroeconomics, the neoclassical economics perceives as the most important goal of the economics the growth and stability of the economy, whereas the evolutionary economics sees it in the development and sustainability. On the micro-level as well both economic schools differ due to their view on human nature. The neoclassic economics is explaining human behavior on markets as optimization process between scarce means and ends. Contrarily the evolutionary economics, because of different view on human, primary as learning, and adapting living, is explaining human behavior as emerging of rules of adjusting, pattern predictions (in sense of Hayek), which are crucial for individual and global development.

In matters of production, consumption, exchange and distribution both economic schools attempt to explain those processes but in different ways. Neoclassic economics views these processes through the lenses of the utility/profit maximizing person, which chooses products, consumer patterns, promising maximal utility/profit (by given resources). The view of evolutionary economics on these processes is much wider considering their social and institutional setting. The Pareto-efficiency paradigmatic assumption secures the actual primary distribution of resources and doesn't put it in question.

**Table 6. Goal of Economics in Evolutionary and Neoclassical Economics**

	<b>Neoclassical economics</b>	<b>Evolutionary economics</b>
Macro	Growth and stability	Development and sustainability
Micro	Explaining human behavior – on markets between scarce means and unlimited ends	Explaining human behavior in terms of adjusting to the changing environment
Referring to production, consumption, distribution and exchange	Explaining in terms of assumptions made on micro-level	Explained considering social and institutional setting

## 5. Conclusion

The various assumptions about human nature, which are characteristic for neoclassical and evolutionary economics result in different perception of the goal of the economics. The table below (Table 7) presents the most important differences of the concept of human nature among those both schools and their impact on understanding of goal and field of those schools.

The neoclassical economics assumes the individual as a homogenous, independent, and stable being (like atom) with needs reduced to preferences, and egoistic, competitive motives using reason only as a calculating instrument for realizing those motives (maximization of utility). Such a concept of human nature influences the goal of economics. The goal of the neoclassical economics is therefore perceived in a following way: explaining of human behavior by assuming unlimited needs and limited resources with different use.

Completely differently is in the case of the evolutionary economics, which assumes that a human is more like a holon, heterogeneous, changing in time and place, interdependent, and embedded in social an natural world. Moreover he/she has various needs (both altruistic and egoistic, cooperative and competitive) and it's assumed that his rationality is bounded. Such an assumption about the human nature has an impact on understanding of the goal of economics. This can be understood as discovery of basic rules of adaptation to changing environment and constraints and of process of emerging most effective rules.

**Table 7. The Influence of Concepts of Human Nature in Neoclassic and Evolutionary Economics**

Concept of human nature	→	Goal
Neo-classical economics atom, homogenous, independent, stable, reduced needs=prefereces, egoistic, competitive, rationality oriented on goals		Explaining of human behavior by assuming unlimited needs and limited resources with different use
↓		
Evolutionary economics Holon, heterogeneous interdependent, embedded in social an natural world, Changing, with various needs, altruistic and egoistic, cooperative and competitive, bounded rationality		Discovery of basic rules of adaptation to changing environment and constraints and of process of emerging most effective rules

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