

Human nature in the economic behavior based on the neoclassical economic model

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Abstract. *We will approach in this article the question of human nature in economics. The traditional homo oeconomicus, as presented in mainstream economics, seems to represent the model of a perfect economic individual. We will question whether the fundamental coordinates of homo oeconomicus, rationality, self-interest and selfishness, capture the essence of human beings and if there is an universal human nature. We propose a more flexible portrait of the economic individual, with insights from recent psychological research, and we suggest that it is society which shapes human nature and character. There is no fixed or inherited human nature. An environment of inequalities makes the individual act in a selfish and utilitarian way, while a more fair social organization would make individuals altruistic and more cooperative. Values are also missing from the traditional portrait of homo oeconomicus. Human beings do not simply and always pursuit optimization, but choose often guided by ethical considerations beyond utility calculus.*

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Introduction

We will approach in this article several questions: how well does *homo oeconomicus* describes the essence of human nature and which is the distinctive trait of the economic individual-*homo oeconomicus* – is it competition or cooperation? Is the economic individual rational or emotional? Does the traditional portrait of *homo oeconomicus* – self-interested, insatiable, rational, competitive correspond to a real person or is just a creation which allowed the mathematization of economic theories?

The purpose of this article is to raise the question whether *homo oeconomicus* actually depicts the essence of human nature. Did economic theory succeed to surprise the essence of human behavior or *homo oeconomicus* merely serves as a simplifying abstraction, which starts from a portrait generally valid, reduced to a couple of schematic traits, which do not encompass the essence of humankind, proposing only a modality to schematize and to mathematize. Does it really exist a human nature? Philosophers offer contradictory answers when it comes to define what human nature actually is. Some philosophers tend to say that our fundamental trait is thinking, while others say that the man is a social being, a cultural being or *homo faber*.

Other theories of human nature consider that the human nature can not be known, we can only have access to the human condition, that is that human nature which is deformed by culture. Human nature, in order to preserve its characteristic to remain in the background, to remain invariant and uniform, is like a *das Ding an sich*. The cognoscible objectivity, that is the phenomenon, associated to the human nature, is the human condition (Dinga, 2015).

In the economic theory, from Adam Smith until this day, the concept of self-interest seems to define the all-pervasive *homo oeconomicus*. The pursuit of self-interest seems to represent a trait so intrinsically and closely connected to human character, that economic theory seems unable to conceive a more eloquent theory to explain behaviors. Although it was questioned and it was proved that it is not in accordance with reality, the image of *homo oeconomicus* is still dominant. The explanation is related to the fact that it allows an elegant mathematical interpretation, which gives the impression of exactness and rigor. Econometric models based on these presuppositions come also to strengthen the image of economy as a science which functions like natural sciences, following fixed rules.

The portrait of *homo oeconomicus*, characterized by an elementary psychology and a mercantile behavior, allows neoclassical economic theory to yield precise analyses, following the model of exact sciences. The behavior of *homo oeconomicus* can be expressed in equations and can be measured using indifference curves, or using functions of profit or utility maximization. A fixed human nature and characterized by unchanged laws allows economists to propose a model of behavior which is predictable and is defined by some fundamental coordinates. Economic individual is animated by the satisfaction of self-interest and he searches in any situation to maximize his utility. We consider that the mathematization of economy is responsible for this type of behavior characterized by the search of the optimal in any situation.

This homo oeconomicus is in the first place a rational agent. To pursue the quantitative analyses, neoclassical theory needed a man reduced to a couple of essential traits, because it was easier to work with fewer variables than with more. This agent is always behaving in a maximizing manner, has a rational behavior and in every situation he will choose the best alternative for him, the one which is maximizing utility and based on the rule of self-interest. Such a behavior characterizes both individual agents and also the market as a whole, because the individual is representative for the whole society. The differences between individuals reside in their history only, because if individuals were put in the same situation and with the same background, they would make the same choices (maximizing personal utility). This homo oeconomicus has become the dominant image used by economists to explain economic phenomena, but we do not have an author and a fixed bibliography for homo oeconomicus. His image prevails nonetheless from all the works concerned with equilibrium, optimal, theory of games or the maximization of production or consumption functions (Pohoată 2011).

We think that human nature is not something fixed and which does not change. It depends very much on social institutions and on social beliefs and also on human emotions. There is no nature fundamentally selfish or fundamentally altruistic and oriented towards cooperation. We have in society examples belonging to both types of behavior.

We have no reason to deduce that the actual majoritarian behavior based on self-interest and selfishness is an inevitable consequence of human nature. We have proofs – like the statistics from the book *Animal Spirits* that within an unequal society people have the tendency to behave in a selfish manner. An environment of inequalities influences the development of human nature. So, the main cause why people become more aggressive and selfish is the inequality from the society and not human nature.

We return to the classical philosophical discussion whether the society influenced positively or not the development of human nature. Some philosophers, like Rousseau, claimed that man was truly fulfilled in the natural state and living in society only brought about harms to human beings. We adhere to the opinion that it is very important for the individual to find an environment/group where predominate ethical and just principles. For if the individual lives in a society where the values adopted are profit and accumulation, and clear rules for rewarding or sanctioning unjust conducts lack, then the individual will act based on the principles prevalent in the social group to which he belongs. So, it is not human nature to blame for certain behaviors, but it is the society which is unable to create norms and rules for a fair behavior.

State of art

John Stuart Mill defines economics as treating human being solely as a being who desires to possess wealth, and who is capable of judging the comparative efficiency of means for obtaining that end (Mill, 1836). He does not treat human nature as modified by the social situation. Mill proposes a vision of homo oeconomicus following a strategy of simplification. These kind of conceptions served to the creation of homo oeconomicus, a rational being whose sole occupation is optimization.

William Stanley Jevons (1871) describes homo oeconomicus as a consumer who calculates and whose actions and motives are defined in psychological terms. Jevons reached these conclusions starting from the utilitarian philosophy and its economic and moral principles. The portrait Jevons makes for the economic nature of the individual combines calculus and psychology. The true search of homo oeconomicus is in fact his pleasure – he searches to maximize utility from consumption. Jevons comes with a graphical representation of a chart of the goods and the associated sensations of pleasure. Each individual gains a certain utility from the consumption of a certain good, and this pleasure or utility gain is decreasing when more units from the respective good are consumed. We have here the action of the psychological principle of saturation.

Jevons proposes not only a graphical representation of subjective sensations but also their mathematical expression. Both feelings and sensations of consumers and also the decisions of homo oeconomicus can be expressed in mathematical language.

By adopting mathematical conceptions and methods from mechanics – using calculus in order to describe the total quantity of utility obtained from consumption – and the final degree due to the infinitesimal changes in utility as a result of the decisions of consumption, Jevons succeeded to offer an exact expression for the economic behavior.

Not only that the economic theories were expressed in mathematical language, but it is supposed that the individual makes such calculus for himself, that is his brain function mathematically when he takes economic decisions by comparing or weighting the different options and by choosing that alternative which will maximize utility. When he must choose between the consumption of two different goods, the individual compares mentally the utility he will obtain from the consumption of successive units (Jevons, 1871).

Jevons defines utility not as a quality within goods, but as “a circumstance of things arising from their relation to man’s requirements” (1871, p. 105), like a relation between goods and man, so that to calculate the utility of a person is not possible to be observed or measured. This means that the behaviour of a person is known only to the subject, it is an internal feeling and appreciation. We return to the philosophical question of how we can have access to others’ subjectivity and mind.

This process of mathematizing the utility helped Jevons create a new portrait of the economic man. Homo oeconomicus is taken into a mathematical world and his behavior can be expressed in terms of mathematical and precise laws. This turn to mathematics is an important step taken at the time by economists. Economic man becomes thus a person who can be studied in the laboratory and his behavior can be expressed using mathematical laws.

It is the recurrent use and need of mathematical and physical language which prompted economists to describe the essence of human being as similar to that of an automata who calculates and searches for satisfactions or utility increases. Francis Edgeworth believed that “at least the conception of Man as a pleasure machine may justify and facilitate the employment of mechanical terms and Mathematical reasoning in social science” (Edgeworth, 1881).

Frank Knight added to the portrait of the economic man a new dimension, that of access to full information. His idea was that homo oeconomicus who is performing calculus as his fundamental activity, needs also to be endowed with complete information about all the states of the world. The individual needs in order to perform the calculus necessary for appreciating exactly what actions to perform on the market full information about everything that happens in the economy. This individual has also foresight capacities. At the level of the individual we have perfect knowledge and information about all the situations in the economy, and if we translate this situation at the market level, everything takes place with necessity and in a perfect manner on the competitive market. The competitive and self-regulating market is created and is made possible by the cumulated action of these independent individuals, each pursuing his self-interest and each trying to get maximum satisfaction (Knight, 1921).

Thus, marginal and neoclassical economists such as Knight exaggerated certain characteristics of the economic man - his calculating ability and perfect information in order to produce the portrait of a more idealized model of homo oeconomicus. These types of idealizations were indeed necessary in order to apply mathematical theory to the human action. Only depicting individuals like „pleasure machines”, their behavior could have been expressed by mathematical laws and principles.

Neoclassical paradigm and the methodology of exact sciences

The intrusion of exact sciences in economics has appeared with the construction of simplifying models, with the risk of not surprising the real human character and nature. Producers and consumers were reduced to fewer behavioral variables; the market was characterized by perfect equilibrium, all these serving the ideal of building axiomatic theories.

The neoclassical economic paradigm was build based on a false analogy with the physical phenomena. While the causality intrinsic to physical phenomena is necessary, in economy the causal chain is unpredictable, due to the intervention of the human factor and its liberty. Despite all these, we consider that there is a dominance in the neoclassical economic theory of determinism and of the predictability of events using relations of type cause-effect.

Neoclassical theory was deeply influenced by the example of Newtonian physics, for which systems are made up of atoms, being infinitely divisible and subject to mechanical laws with universal applicability. Newtonian physics in its turn was profoundly marked by the rationalist philosophy of Descartes. The rationalism of Descartes started from the supposition that reality can be known and explained through causal mechanisms, being an intelligible system in so far we can identify the laws governing action and existence. The principles of rationality and causality are universal and the reality is accessible through knowledge.

The theory of physics was based on these assumptions trying to identify universal laws which describe the behavior of natural phenomenon. The possibility of knowledge

implies also the possibility to foresee the evolution of processes. The determinism of this conception is obvious – any event is the product of a cause which we can identify and which produces in turn an effect which is also identifiable. Everything takes place with necessity within these physical laws.

Because the universe works perfectly causal and rational, everything is measurable, because the universe is made up from independent and autonomous parts, it is supposed that their characteristics and the relations between them remain unchanged. The equilibrium of the system is static and systems are characterized by reversibility, we can remake the causal chain until we return to a previous state specific for the system.

Neoclassical economists have developed economic theory in accordance with these principles. Neoclassical economic systems are mechanistic, and the characteristics of the individual atoms which make up the economic system and the relations between them are constant and governed by fixed laws. Economic systems are characterized by equilibrium.

Neoclassical economists apply the principle of methodological individualism and they reduce the macroeconomic system to the action of individuals which act based on the same rational principles (the concept of *homo oeconomicus* considered as a representative agent). From marginal utilities to the prices established through the mechanism of supply and demand everything can be expressed using numerical formula. These offer to economics an aura of scientificity, in analogy with exact sciences.

The method of mathematical modeling and of quantitative analyses was introduced in the economic discipline by the representatives of marginalism. Leon Walras introduced the notion of general static equilibrium. Jevons analysed the consumer behavior in terms of marginal utility, using mathematical instruments in economic analyses. Edgeworth introduced the idea of indifference curves and uses of the infinitesimal calculus. First reactions appeared through the Austrian School, from Carl Menger, who claimed that mathematical language was not appropriate in order to express the economic phenomenon and individual subjectivity.

The concern for formal, numerical modeling became inseparable from economic analysis. Even if there are concerns for qualitative developments – related to development or welfare, all these tended to be measured by quantitative indicators. The need for quantitative expression of economic phenomenon shows an obvious lack of realism – how can we measure for instance the values or how can we measure economic behaviors?

So, neoclassical model was developed starting from the model of theoretical physics and applied the principles of a mechanistic philosophy, which describe the behavior of natural phenomenon, to the economic action and behavior. Starting from these theoretical premises, one has modeled a consumer and producer which acts based on a perfectly rational calculus and who takes decisions by analyzing and evaluating all available alternatives. The human individual was conceived as an automat who acts in a mechanical manner. The extension of principles applicable in the world of natural phenomenon deformed economic analysis, producing completely unrealistic effects and producing a completely mechanized conception of human nature.

Homo oeconomicus or about human nature

In the context of optimality, human nature is considered as fixed and given. There is no place for novelty or for free choice because individual is deemed to perfect knowledge and to acting in a predictable manner. He has no other choice but to be consistent with his own preferences, and to choose more for less. The individual knows in every situation what is best for him. There is no place here for improvement and for revising convictions in accordance with Bayes rules.

Usually individuals learn and revise older convictions depending on the new information received. This is not the case for homo oeconomicus. He does not need to revise anything, because his choices and information are perfect. This could be called rather a static state, and nothing new can emerge. The world made up from economic individuals seems rather a place without novelties or events.

This theory had known such a widespread acceptance mainly from its power of simplification, being based on the postulate of a fixed human nature and certain eternal principles of this nature, as well as on a profound commitment to simplicity and elegance as overriding criteria of an adequate explanation (Blaug, 1980).

Neoclassical economic theory considers that individuals maximize utility and firms are maximizing profits. The main assumptions of neoclassical theory are that individuals are selfish and possessive. The natural tendency of human nature is to increase personal welfare and this will result in the maximization of general welfare of the society as well. The references to morality or ethics play no role in the psychology of homo oeconomicus,

The human behavior is reduced by neoclassical theory to two main hypostases – the pursuit of satisfaction for the consumer and the search for profit from the producer. Even if there are many more aspects related to human behavior in reality, these two outlined are considered fundamental. All the other characteristics which define human beings seem to be exterior to the real nature of the economic individual. Through a chirurgical operation, the individual is extracted from his imaginative and cognitive environment and he is send to act and maximize in an environment consonant with his narrow hedonism – the market with perfect competition (Pohoață, 2011).

If homo oeconomicus in the works of Smith or Say still preserved the traits of an antreprenur, in the works of Jevons, Walras or Galiani he is subject to an over-simplification in order to be turned into a perfect economic robot, capable to perform hedonistic calculus. This is totally a quantitative vision of the human nature. Individuals have no feelings, no history and no relations. They live only to perform utilitarian analyses and to calculate. They are perfect rational machines and will choose in every situation the best alternative. The human being thus depicted has no spiritual side; there is only the taste for utility and accumulation. This rational robot is capable of calculus and of choosing the profit, always more for less, and pleasure instead of loss.

This individual becomes through aggregation the guarantee of a market where everything takes place in equilibrium. Methodological individualism postulates that the behavior of a single rational individual translates to the scale of the whole society/humankind. All

social and macroeconomic phenomena are explained and composed from movements of these atoms. These individuals are considered identical, provided that they act under the same circumstances.

The idea behind this representative agent is that of a common human nature, and more than that, of a predictable behavior. If individuals are in the same situation they will do the same actions. The actual and real difference between individuals is coming from their history, but not from their nature. Such an image of the human nature proposes a portrait which enhances similarities between individuals and postulates we all are identical, inheriting a common nature.

Homo oeconomicus and the axiom of rationality

Homo oeconomicus, afterwards replaced with the representative agent, acts in applying the principle of rationality. The rationality of homo oeconomicus, which is manifested by choosing from a set of alternatives of the alternative which is maximizing utility, based on a set of predefined preferences, supposes that the economic agent is endowed with an unlimited capacity to process information to which he has access and to take the best decisions in any situation.

Rational behaviour is usually defined as choosing more instead of less and as making proof of consistency in the case of choices. When consumer has to choose between two bundles of goods, the hypothesis of decreasing marginal substitutions states that consumers will chose packages of goods which contain bigger quantities from anything, all other things being equal (Buchanan and Tullock, 2010).

This perfect rationality will always materialize in the best decisions, that is he will choose the optimal alternative, which is maximizing utility, and at the market level this kind of behavior will reflect in the action of markets characterized by perfect competition, which arrive in an equilibrium state through the action of universal economic laws.

Rationality as utility maximization means that the economic agent always chooses based on his own set of preferences. These preferences must fulfill simultaneously several conditions. The first condition is that the relation of preference is characterized by completeness (either $x \leq y$ or $y \geq x$ or both, for all the packages x and y), which means that any packages are comparable. The second axiom supposes the condition of reflexivity $x \leq x$ for any x . In accordance with this hypothesis, any package is desired in the same measure as itself. The third condition supposes to respect the condition of transitivity, that is if $x \geq y$ and $y \geq z$, then it follows that $x \geq z$. This function of utility attaches to each package of goods a real number. This utility function represents the relation of preference in the following manner $u(x) \geq u(y)$ if and only if $x \geq y$.

The maximization of long term utility, without any concern except for personal welfare, is a distinctive trait of homo oeconomicus. The economic activities relying on the postulate of optimizing rationality follow only a growth without limits of profit by increasing production and increasing consumption. The maximizing rational behavior is considered an efficient behavior.

The neoclassical economics assumes decisions of homo oeconomicus are always the result of optimizing calculation. The optimization means here trying to reach the highest preference curve. The individual is also conceived as being independent from other people, the relations play no role in the neoclassic model, because the individual is considered self-sufficient.

There have been many critiques of such an image of the economic individual. Many economists from the Austrian school, Thorstein Veblen, John Maynard Keynes or Herbert Simon formulated the critics that homo oeconomicus is an actor who has too many foresight and forecasting in the making of his decisions. The knowledge of the economic individual is much too perfect and also the access to full information is very implausible. Experience shows that individuals take decisions under conditions of stress and uncertainty and that bounded rationality or irrationality is a distinctive trait of our human nature. There can be never such a thing as a perfect knowledge of all circumstances, which means that individuals always take risky and non-cert decisions. Moreover, it seems that emotions play an important role in the process of decision-making. Rationality is not such a spread trait of human psyche as neoclassical economists seem to believe.

The neoclassical economic model proposes a vision about human nature which is very unrealistic; homo oeconomicus is described very rigid and very far from the image we get from psychological research. Human behavior is proven not to be uttermost and mostly rational. This rationality trait explains only in part human behavior. In reality individuals have more characteristics than the rational ones. Not only profit and the search with any price of utility maximization motivate economic behavior.

According to Keynes, the economy is not governed only by rationality, which is supposed to solve any transaction through the mechanism of the invisible hand to the beneficial reciprocal advantage of participants in transactions. An important part of the economic activity is governed by „animal spirits”. People have reasons outside the economic sphere, and they are not always rational when they follow their own interests. For Keynes the animal spirits are the main reason why such economic fluctuations take place. They also represent the main cause of voluntary unemployment. So, as the indivisible hand of Smith is the key element of classical economics, the animal spirits are the main element in a different vision of the economy, a vision that could explain the fundamental instabilities of capitalism (Akerlof and Shiller, 2010).

Other economic visions of human nature

All these conceptions about human nature were questioned by several economists who studied economic behavior and phenomena. They all had in common the rejection of traditional visions about human nature, characterized by self-interest, utility maximization and rationality. These critics showed that actually people behave differently from the economic theory prescriptions.

This kind of conceptions about human nature were investigated by Karl Polanyi from the prospect of economic anthropology. Anthropological research shows that the primitive societies were not based on self-interest and that the notion of profit was developed mainly starting from Adam Smith, since the 19th century. Reciprocity and obligations were the main dominant in primitive societies; community was taking care of poorer people while richness was redistributed through certain ceremonies of gift giving (Polanyi, 2001).

Economic anthropologists' research has shown that primitive or traditional societies exhibited different patterns of behavior. Such systems had a viable gift economy but not a market economy. In those societies people were not pursuing the self-interest and reciprocity was dominant. We could envisage such a human nature, where cooperation and not competition and the pursuit of sheer self-interest is the fundamental trait of individuals.

More recently critics came from behavioral economics. Daniel Kahneman put into question the idea that individuals are behaving in a rational and consistent manner. Kahneman also showed that the assumption of rationality is strongly related to liberalist conceptions. The supposition that individuals are rational offers the rational foundation for the libertarian approach of public policies – we must not interfere with the right of the individual to choose, only if these choices harm others. Libertarian policies are also related to the admiration for the market efficiency in allocating goods in accordance with the laws of supply and demand.

According to Kahneman, people have at their disposal two systems to take decisions – one is made from fast thinking, through which we resort to heuristics, taking decisions on grounds somehow irrational, and another is the slow thinking which we use much less often. Using experiments Kahneman showed that individuals have an irrational behavior. (Kahneman, 2012).

The founder of experimental economics, Vernon Smith, says that the most fundamental trait of human character is the capacity to evolve in exchange relations. It is not the self-interest which promoted economic growth, but exchange is considered to promise gains that humans search. According to Smith, the division of labor is not originally the effect of any human wisdom, which foresees and intends the general opulence to which it gives occasion. It is the necessary, though very slow and gradual, consequence of a certain propensity in human nature which has in view no such extensive utility; the propensity to truck, barter and exchange one thing for another.

From an economist's point of view, the most compelling feature of human nature is sociality. It has been our species capacity for social exchange that has enabled task specialization and the production above bare subsistence that has supported investment in the creation and utilization of knowledge (Vernon, Smith, 2004).

Critics of the traditional representation of human nature as it appears in the neoclassical economic theory are focusing on the fact that the image *homo oeconomicus* gives us is rather partial. Human nature can not be reduced to the character of an automata, who is trying in every possible situation to maximize utility and who chooses only based on self-

interest and optimization. People take seldom rational decisions, they are capable of altruism and they do not live a life based solely on utility gains or profits.

The neoclassical representation of human nature seems very incomplete. People do not make a rule of taking decisions based on an analysis of costs and benefits and they do not evaluate always the marginal cost and the utility of decisions. Neoclassical theory concentrates only on the utilitarian side of human behaviour, and favors only activities which can be evaluated from the prospect of utility or pleasure gain. But people are guided by many other values than a simple quest for pleasure. Man is not a robot maximizing under every conceivable situation his pleasure or utility.

Conclusions

All these representations on the human nature of homo oeconomicus focus on its side of an automata who maximizes in any situation utility gains from satisfaction of preferences. But this view on preferences is rather narrow. Simply satisficing preferences says nothing about them, which of these preferences are good and which are bad, which are to be preferred over others and which are to be avoided. Here we have to reintroduce values in the discourse. For homo oeconomicus values seem to be absent, as his only concern is optimization. His only and sole purpose in this life is to optimize and the economic individual is unable to see beyond these limits.

Political philosophers have shown that the man can be fulfilled only in the search and achievement of values. Thus, social progress is a process of formation and modification of the human intellect in which our values and desires continually change (Hayek, 1960).

From their earliest origins, men and women appear to have allocated a considerable portion of their time to the pursuit of truth, beauty, justice, liberty, community, friendship, love, salvation, and so on, activities best described not as labor or work, but as striving—a term that precisely intimates the lack of a reliable relation between effort and result. A means-end or cost-benefit calculus is impossible under the circumstances (Hirschman, 1984).

The distinction between satisfaction (simple preferences) and values (meta-preferences) implies the consideration of ethics and motivation. The higher values (rather than preferences) might be gained through deliberation upon choices. If we introduce values in the discourse, we have a behavior build on ethical principles, very far from the traditional image of an individual who calculates and maximizes pleasure.

Our research should be oriented in the direction of ethics and values of this homo oeconomicus, in order to add a new dimension to the traditional portrait of the economic individual, for which the only value is profit and utility. Also, further research should clarify the question of the universality of human nature – is there an innate, unique human nature which all of us inherit or this human nature is a creation and depends very much on social norms and institutions?

Probably the influence of society of shaping human nature is the most important thing to be taken into consideration. As research has shown, a society where inequality dominates makes selfish individuals, while a society where more egalitarian rules exist can produce more altruistic and cooperative individuals. An extensive study of how society shapes human nature is therefore a key to question the actual image of homo oeconomicus, which represents still an important benchmark when taking into consideration the evolution of human nature.

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