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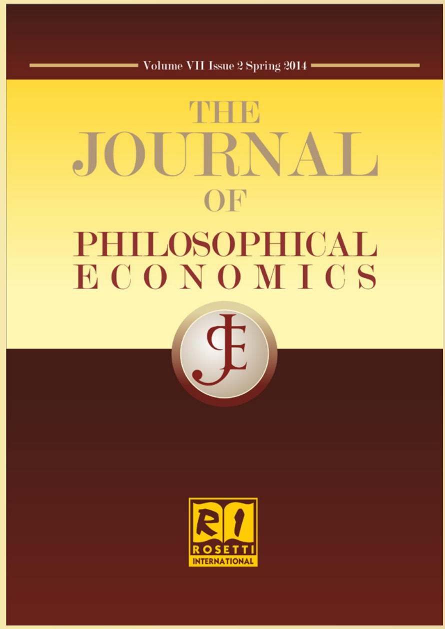

Behavioural controversy concerning homo economicus*: a Humean perspective*

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Behavioural controversy concerning *homo economicus*: a Humean perspective

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Abstract: In his monumental masterpiece, *A Treatise on Human Nature*, which explains the methodology of human reasoning concerning matters of fact and describes the roles that passions and morals play in it, Hume arrives at an enormously interesting maxim: An academic controversy cannot continue for long unless the disputants assign different meanings to the major terms employed in the debate. This theory has been applied in this paper to examine the behavioural criticisms about *Homo Economicus* (HE), the pivotal perception in the neoclassical microeconomic model.To achieve this objective, the paper discusses the origin and evolution of the concept, reviews behavioural criticisms, summarises the main tenets of Hume's philosophy of human knowledge and finally examines the behavioural opinions from Hume's perspective. The paper concludes that Hume's theory convincingly explains the reason why the HE controversy is continuing for over half century- a fact that both the mainstream and behavioural economists are ignoring.

Keywords: neoclassical economics, behavioural economics, human knowledge

Introduction

Behavioural economics (BE), the most recent sub-discipline, has emerged over the past half century or soas a sort of protest against some decision-making characteristics of *Homo Economicus* (HE) (Anger & Loewenstein 2012; Altman 2006). The initial objectives of this protest were to add more realism in the economists' decision-making model: 'At the core of behavioural economics is the conviction that increasing the realism of the psychological underpinnings of

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economic analysis will improve economics on its own terms— generating theoretical insights, making better predictions of field phenomena and suggesting better policy.' (Camerer & Loewenstein 2004) The current developments in the area, however, have far exceeded those initial intentions. Modern behaviouralists directly challenge the methodological soundness of orthodox economics and question the empirical accuracy of its theories. These behavioural claims have been taken seriously by both academic and public administrators, which is evidenced by the fact that world renowned universities- like Harvard, Yale and UCLA- offer graduate degrees on the subject and behavioural experts are being invited in increasing numbers by both national and supra-national public agencies to make policy analysis and recommendations (Altman 2011; Datta & Mullainathan 2012).

These academic and policy ramifications offer a good ground to evaluate the behavioural criticisms against *Homo Economicus*. For, the basic economic laws owe their rationality and empirical validity from this concept. This statement becomes abundantly clear if one looks closely into Robbins' (1932) definition: *Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses*. Robbins and all other important authors, including Marshall, underline HE's decision-making role in undertaking economic activities and by that forms the foundation of the laws of demand and supply. Economists are well aware that all laws and principles developed in economics have been directly or indirectly guided by theories of demand and supply. Accordingly, the conceptual and empirical implications of the whole body of economic laws become weak if the conceptualisation of *Homo Economicus* is found faulty.

Economic theories in the both sides of the isle, it may be mentioned, are growing fast in terms of both sophistication and volume -a scenario, which suggests that the debate over the nature and role of HE in the economic theorisation has reached an impasse. Thus, the prospect of adding fresh ideas to the discussion through conventional approaches is very slim. Accordingly, inputting fresh ideas to the debate would require, it may argued, examining the controversy from somewhat different analytical perspectives, perhaps crossing the theoretical boundary of economics. For, it is quite possible that behavioural and mainstream economists foster differing 'perceptions' of the term HE and accordingly argue from angles and contexts.

This point seems to be supported by the following quote from Hume, '... the faculties of the mind are supposed to be naturally alike in every individual; otherwise nothing could be more fruitless than to reason or dispute together; it were impossible, if men affix the same ideas to their terms, that they could so long form different opinions of the same subject; especially when they communicate their views, and each party turn themselves on all sides, in search of arguments which may give them the victory over their antagonists' (Hume 1748: 90).

An exploratory attempt is made in this paper to assess the HE controversy from the perspective of Hume's empiricist theory of human knowledge. Organised in six sections, the paper proceeds as follows: The next section discusses the primary concern of this article- meaning and origin of *Homo Economicus*. Section III briefly reviews the behavioural HE criticisms. Hume's theory of human knowledge, the analytical tool of this paper, is summarised in Section IV. This theory is applied in Section V to evaluate the behavioural criticisms. Finally, the paper ends in Section VI with some concluding remarks.

Homo Economicus: conception and evolution [1]

Classical era: conception of Homo Economicus

The idea implied by the Latin phrase *Homo Economicus*, or its English counterpart 'Economic Man', was conceived long before these phrases were coined. Between the two, the latter term appeared earlier in economic literature than the former (Persky 1995; O'Boyle 2008). Ingram introduced the term 'Economic Man' in his book *History of Political Economy* in 1888, while Pareto, Persky says, was the first most eminent author to use the term *Homo Economicus*. He employed it in his famous *Manual of Political Economy* published in 1906. Both these terms, it may be noted, were used initially for criticising the nature of economic agent that the towering classical economists like Adam Smith and JS Mill depicted in their writings. Accordingly, their ideas need to be understood clearly for appreciating the true nature of the HE controversy. For, the germs of sequent economic writings on HE may be traced back to two great works of these great economists- *An Inquiry into the Nature and Causes of the Wealth of Nations* by Adam Smith and 'On the Definition of Political Economy; and on the Method of Investigation Proper to It', an article by John Stuart Mill.

Adam Smith- a student of Francis Hutcheson and a contemporary of David Hume and Jean-Jacques Rousseau- was a professor of moral philosophy at Glasgow University. To better appreciate the nature of his thoughts and theories on economics, one needs to take into consideration the social environments in which he lived (Clark 1966). In the fourth quarter of the 18th century, three great events took place, which eventually led to dramatic changes in political and economic landscapes of Europe and North America. These three historic events are American Revolution, French Revolution and Industrial Revolution. While American and French revolutions were heralding the demise of dynastic-aristocratic political systems in America and Europe, Industrial Revolution was forecasting the death of economic system ruled by feudalism and economic nationalism, called mercantilism. In other words, concurrent social events were creating accommodative environments for greater individual freedoms in both political and economic affairs. These events constituted the background in which the *Wealth of Nations* was written. In this book, Smith tried to discredit the prevailing economic theory of nationalism, popularly known as mercantilism, by arguing that the improvement in economic welfare of a nation does not lie in creating balance of trade surplus through restricting imports and facilitating export. Quite on the contrary, the wealth of nation necessarily expands if trade is freed from all unnecessary public interventions, because minimising these interferences in people's private economic activities is a precondition for igniting their selfish desire of wealth accumulation. The following extract is generally considered a good summary of Smith's economic doctrine:

> As every individual, therefore, endeavours as much as he can both to employ his capital in the support of domestic industry, and so to direct that industry that its produce may be of the greatest value; every individual necessarily labours to render the annual revenue of the society as great as he can. He generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it. By preferring the support of domestic to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it (Smith, 1776: 456).

However, from analytical perspective, Mill's contribution is considered more important in the development of *Homo Economicus*. He defined political economy as the study of those aspects of production and distribution of wealth, which depended upon the laws of a particular portion of human nature. In Mill's words, this portion of human nature deals with the human motive concerning wealth acquisition:

> It does not treat of the whole of man's nature as modified by the social state, nor of the whole conduct of man in society. It is concerned with him solely as a being who desires to possess wealth, and who is capable of judging of the comparative efficacy of means for obtaining that end... Political Economy considers mankind as occupied solely in acquiring and consuming wealth; and aims at showing what is the course of action into which mankind, living in a state of society, would be impelled, if that motive, except in the degree in which it is checked by the two perpetual counter-motives above adverted to, were absolute ruler of all their actions (Mill 1880: 137).

Although economic operations are the outcome of a plurality of motives, Mill's approach to political economy considers them as exclusively inspired by the desire of wealth. In his own words: 'The science ... investigates the laws which govern these several operations, under the supposition that man is a being who is determined by the necessity of his nature to prefer a greater portion of wealth to a smaller in all cases' (Mill 1880: 138).

Indeed there is a good reason to make this supposition. All branches of economics are involved in studying cause and effect relationships, which have policy implications. For example, while demand for a good may be influenced by many factors, mainstream economists place special emphasis on the commodity price and its quantity demanded. Similarly, wealth-creation might be motivated by many passions; but, from the perspectives of mainstream economics, the emphasis is on the exclusive influence of one affinity- moneymaking. To quote Mill again: 'There is, perhaps, no action of a man's life in which he is neither under the immediate nor under the remote influence of any impulse but the mere desire of wealth' (Mill 1880:139).

Classical theory in which HE plays a pivotal role may be summarised as follows: The general objective of economic investigation is to discover laws and principles which accelerate the growth of national economy as well as the welfare of ordinary people. These laws and principles are ordinarily determined by two factors- one natural and the other social or political. The natural factor is that the humankind is by nature selfish; they ordinarily care primarily about their own interests. This means moneymaking affinity is a natural feature of civilized human beings, although it is well recognised that the degree of selfishness varies widely from one individual to another. Classical economists also assume that the ruling social or political institution in which all economic activities are undertaken permits and promotes private property ownership. Since human beings are by nature selfish, economists in general believe that the institution of private property is most compatible to economic growth and welfare.

Neoclassical era: transition of natural HE into mythical species

Adam Smith and John Stuart Mill, whose ideas have been discussed above, are often credited as originator and the synthesiser of classical economic thoughts (Reynolds 2014). Although the classical school served quite well the intellectual as well as the social causes of humanity, the system itself was analytically weak which had made it a formidable arena of intellectual attack. This attack was orchestrated in three books, all published the decade of 1870's by three significant scholars, later honoured as neoclassical economists: *Theory of Political Economy* (1871) by William Stanley Jevons, *Principles of Economics* (1871) by Carl Menger and *Elements of Pure Economics* (1874–1877) by Leon Walras.

While the transition of economic thoughts from the classical era to neoclassical one represents and reflects many methodological as well as political issues, this paper is only interested to see how the simple classical idea of *Homo Economicus* evolved into 'mythical species'. This query is being satisfied here by discussing the works of some dominant neoclassical economists.

Neoclassical contributions to the theory of *Homo Economicus* have flowed from two directions (Weintraub 2013). First, being influenced by the prevailing idea of expanding national wealth, the classical thinkers were primarily concerned with the supply-side of commodity market. Since 'market demand' played little role in the theory, the value of a commodity was basically determined by the costs of production. The primary objective of pioneer neoclassical economists was to complete the theory of value by incorporating 'demand' in the market model. This was done by introducing the concept of 'utility' and establishing a theoretical framework that is nowadays popularly known as 'marginal revolution'. The school received a big boost in the hands of Alfred Marshall, who made 'marginal revolution' concept more interesting through systematising the partial equilibrium framework. Second, they successfully applied advance mathematical techniques in explaining and illustrating theories and principles of economics. This process of mathematising economic language in turn introduced, as a matter of default, several abstract attributes in economic analysis, particularly concerning HE. Camerer (2003) lists a number of these abstract attributes: complete, transitive, smooth preferences; dynamic programming; 'asocial' preferences; self-interest; profit-maximization; market-clearing, game-theoretic equilibrium etc.

For adequately understanding HE's role, the neoclassical consumer's theory is presented here in its appropriate mathematical language (McFadden 2013). Let's suppose an average individual, HE in our case, has a utility function U(**X**), meaning HE's utility is a function of non-negative commodity vectors **X** = $(x_1, x_2 ... x_n)$. Additionally, she has a limited amount of income that she can spend to satisfy her desires. The main constraint imposed in the model is the consumer's income **Y**, normally stated as a budget constraint **Y** = $p_1x_1 + p_2x_2 + ... + p_nx_n$, where P = $(p_1, p_2 ... p_n)$ is the vector of constant commodity prices. The budget constraint imposed in the model is meant to imply that HE is unable to satisfy all her desires as reflected by the utility function due to resource limitation. This budgetary situation compels her choose a select number of items included in the utility function. In mathematical language, this involves setting up an objective function based on the goal or motive of the choice-maker or decision-maker. Neoclassical economists assume that consumers seek to maximize total utility subject to budget constraints in making their choices.

Neoclassical consumer model described above represents a constrained optimisation problem. This means that the individual demand function, which is the end product of the model manipulation, is obtained by following the steps suggested by the methods of differential calculus. The procedure requires formulating a Lagrangian function of the following form:

$$\text{Max } L = U(\mathbf{X}) - \lambda\,(\mathbf{P}^{*}\,\mathbf{X})$$

Where, L is the constrained objective function; λ is the Lagrangian multiplier and **P** and X are as defined above.

So far as *homo economicus* is concerned, the foregoing discussion relates how the concept has evolved from the classical to the neoclassical era. As noted above, Adam Smith, a moral philosopher by profession, first demonstrated with conceptual and analytical erudition how individual selfishness, an innate attribute of the humankind, could lead to national prosperity under appropriate economic system and policy. Smith's ingenious contribution to the development of economics discipline was undoubtedly one of unclouding that part of the human nature which guides and controls individuals' economic activity. According to Rousseau (1762), 'self-love' is humankind's most innate attribute. This original attribute gets transformed into individual 'selfishness' through the influences of various forces of 'civil society', which Mill was referring to above. This human characteristic, although natural in orientation, is often considered pejorative from the perspective of human welfare. A philosophical mind like that of Adam Smith was required to demonstrate that this undesirable, often reprehensible, human attribute could be used effectively for the benefit of the humanity under appropriate regulation[2].

The pioneer neoclassical economists appear to have merely accepted the classical idea and adapted it to suit their own intellectual objectives, which suggests that they did not make any big issue about the natural or the social characteristics of HE. These objectives, as mentioned above, were to rationalise the theory of value by incorporating the demand-side in the model and introducing advanced mathematical techniques so as to make economic theories more rigorous and succinct.

Behavioural economics: origin and evolution

For properly evaluating behavioural HE criticisms, it seems important to first understand what BE is and how it has evolved over time. But defining the scope and subject- matter of behavioural economics seems a daunting task. For, unlike other branches of economics, this area of economic inquiry arose in the form of criticisms of neoclassical decision-making model. Then, as mentioned before, the recent developments in the sub-discipline have significantly diverted from its original intentions and approaches. Taking all these points in account, the following discussion provides a short description of the scope and subject- matter of behavioural economics and its subsequent developments. For this purpose, the entire era, during which BE has been conceived, developed and orchestrated into a formidable branch of economics, is divided into two decisively distinguishable periods: Simon-Katona era and Kahneman and Tversky era.

Simon-Katona era

Nowadays behavioural economics is generally defined as the interface between economics and psychology (Beggs 2013). While traditional economic theory assumes that people are perfectly rational, patient, computationally proficient little economic robots that know objectively what makes them happy and make choices that maximize this happiness, behavioural economists argue that people are impatient and seldom are good decision-makers. They procrastinate and normally try to avoid loss, care more about economic gain and so.

However, the idea of behavioural economics was quite different when it was first conceived. The old school of behavioural economics began during the 1950s and early 1960s with the works of two great scholars– George Katona and Herbert Simon (Hosseini 2011). Between the two original contributors, Herbert Simon is well established in the profession due to the popularity of his theories of 'bounded rationality' and 'satisficing'. Since Katona's works are less reviewed in the literature, this discussion refers only those of Herbert Simon's.

Political scientist-cum-economist Herbert Simon is often credited to have officially taken up the behavioural economics cause in 1955 when he coined the term 'bounded rationality' to highlight his point that humans do not possess infinite decision-making capabilities (Beggs 2013). In the Nobel Memorial Lecture, 'Rational Decision-making in Business Organisations', Simon summarises his impressions about HE. Rationality in economics, he says, implies a style of economic behaviour that is appropriate to achieving given goals within the limits imposed by the model conditions and constraints (Simon 1972). In neoclassical microeconomics, the given goal of *Homo Economicus* is to maximise utility/profit. To solve this maximising goal, some unusual attributes have been assigned to HE, including perfect knowledge about controlled variables and perfect certainty about their future behaviour. Additionally, this mythical creature is assumed to have 'unbounded' information-processing capability, willpower and selfishness.

Contesting these neoclassical assumptions, Simon proposed his own version of HE, 'Theory of Bounded Rationality': People seldom make economic decisions under conditions of perfect certainty and knowledge. Real world environments are full of risks and uncertainties, which make future unpredictable. Then people have to make decisions based on imperfect information. Additionally, people's information-processing power is limited; their will- power is much less than obstinate; and they are not as selfish as the portrayed by the classical and neoclassical authors. All these suggest that humans are hardly capable of acting rationally in the manner proposed by mainstream economics and they are not mentally equipped to evaluate all potential consequences of decisions being made.

The presumed goal of maximization/optimization, Simon argues, is virtually unrealizable in real life. The best people can do is to set a 'satisficing' goal that only requires people to be able to place goods on some scale in terms of the degree of satisfaction and to have a threshold of acceptability. 'A satisficer simply encounters and evaluates goods until one is encountered that exceeds the acceptability threshold. That good is chosen. In subsequent, accidental encounters with other goods in the relevant domain, the scale of acceptability enables one to reject a formerly chosen good for a higher ranked one should that one turn up. A satisficer thus often moves in the direction of maximization without ever having it as a deliberate goal... To satisfice is to pursue not the best option, but a good enough option.' (Schwartz et al, 2002, p.1178)

Kahneman and Tversky era

The watershed for behavioural economics, Levitt and List (2008) contend, came in the 1970s. What however is really important to note in this regard is that this watershed was introduced by two psychologists- Daniel Kahneman and Amos Tversky. They presented their first theory to the public in 1974 by publishing a paper in the popular *Science* magazine that was titled 'Judgment under Uncertainty: Heuristics and Biases'. This paper insinuates HE's alleged rational capability by describing the psychological process about how individuals make decisions under the conditions of uncertainty and imperfect knowledge. Heuristics are cognitive 'mental-shortcut' strategies that humans in processing real-world information. Human brains are not designed to store boundless volume of data as they enter in the mind through sensations as well as reflections. Responding to rectify this natural limitation, our brain immediately converts the raw data into something else that resemble sensed or deflexed objects and substitute them in our conscious or subconscious minds. In making decisions under risk and uncertainty or judging risky and uncertain issues, they use the stored data which are just imitations of real world, meaning they have limited validity. In other words, judgment under uncertainty rests on a limited number of simplifying heuristics rather than extensive algorithmic processing (Gilovich and Griffin 2002). The general proposition that follows from this research is that humans commit systematic biases in decision-making process. These biases are treated as systematic because the hard-wired natural technologies humans inherit by birth are irreplaceable and susceptible to little improvement.

Their second popular idea appeared in two publications: 'Prospect Theory: An Analysis of Decision under Risk' printed in Econometrica 1979 and 'The Framing of Decisions and the Psychology of Choice' printed in Science 1981. These publications, some authors argue, have imprinted lasting mark on the intellectual history of economics, because they have made behavioural economics research a component of the mainstream economics (Laibson and Zeckhauser 1998). These papers argue that the prevailing expected utility theory as descriptive model of decision making under risk is defective, because it puts equal weight on the prospect of 'loss' as well 'gain'. Tversky and Kahneman contend that individuals ordinarily put higher importance on avoiding loss than making gain. Thus, if a person is given two equal choices, one expressed in terms of possible 'gain' and the other possible 'loss', people would under normal circumstances prefer the latter, not the former. They have named their proposition 'prospect theory', also called 'loss-aversion theory'.

Hume's philosophy: understanding, passions and morals

The foregoing two sections discussed the major currents of thought involved in the on-going HE-controversy: the conception and the evolution of the jargon *Homo Economicus* during the classical and neoclassical periods and the conception and the evolution of behavioural economics as a new sub-discipline during the past half century. The discussion about the HE conceptualisation and evolution in mainstream economics suggests two points that are crucially important to understand the behavioural criticisms. First, most economists seem to ignore the fact that Smith articulated the idea in the context of economic development of a nation-state. The psychological mechanism through which individuals resolve their decision-making problems, whether in consumption or production, was not his concern: 'When modern economics was born, Adam Smith envisioned it as a study of the 'nature and causes of the wealth of nations. His seminal work, *The Wealth of Nations*, was widely read by businessmen, even though Smith disparaged them quite bluntly for their greed, short- sightedness, and other defects. The book also stirred up and guided debates among politicians on trade and other economic policies. The academic community in those days was small, and economists had to appeal to a broad audience. Even at the turn of the 20th century, Alfred Marshall managed to keep economics as 'both a study of wealth and a branch of the study of man' (Coase 2012).' Smith's macro approach to the growth of national wealth indicates that he was looking for an innate human attribute that characterises all individuals. In philosophical term, this attribute is called 'human nature'. And self-interest is definitely one of these attributes that belong to this category.

Second, neoclassical economists, particularly during the first half of the 20th century, were primarily interested in developing a complete market model consisting of both demand and supply sides, building general equilibrium framework for social welfare analysis and introducing mathematical methods in describing economic laws and principles. As mentioned before, these developments in economic literature required defining HE in such rigorous terms that instigated behavioural economists to call it 'mythical specie'. But the economic literature, to the knowledge of this author, does not provide any evidence which suggests that the neoclassical economists have ever claimed basic theories of demand and supply are not derivable without these mathematical tools. In fact, it is well understood that most of the fundamental theories of economics, which requires HE's role, can be described in simple language with simple graphs.

If these two points are levelled against the behavioural criticisms and thoughts discussed above, one might be confused to determine whether the behaviouralists are really criticising the HE's role in the development of microeconomic model that stands as the basis of all subsequent economic theories and policies; or they are merely castigating the abstract assumptions which neoclassical economists have laboriously implanted in the basic economic model in order to make economic language more precise and concise. The two issues are by means the same or similar. Accordingly, the conceptual basis of behavioural insight may be thought of as too weak to be the foundation of a new branch of economic ideas, which aspire to challenge the orthodox wisdom.

Hume's empiricism

The fact however remains that behavioural scholarship has been growing fast with little defensive or offensive response from the learned neoclassical authors. This scenario seems to suggest that the debate between the two influential groups of economists has either entered an impasse or the neoclassical authors accord little importance to the behavioural ideas. Whatever might be the case, the situation is unwholesome in terms of both theory and policy. Theoretically, the behavioural criticisms will prescribe an omnipresent overshadow on the soundness of neoclassical judgements, which in turn will appear a cause of concern to the policy analysts and policy makers. Under the circumstances, two general conceptual inquiries may be undertaken with a view to inputting some fresh ideas to help clear this confusing and controversial situation. The first research involves subjecting the debate to more rigorous scrutiny to unearth where the two schools really disagree. This is an analytical research that needs to be undertaken in the light of the discipline's own methodology. The second research question involves examining the debate from a philosophical perspective by attempting to explain why such kind of intellectual environment develops, where both sides claim victory by arguing that the opponent party is wrong. This paper intends, as promised, to pursue the kind of research, by applying David Hume's philosophy of the nature and extent of human knowledge as expounded in his monumental books, *A Treatise of Human Nature* and *An Inquiry Concerning Human Understanding*. More specifically, this paper examines the nature of continuing HE controversy in the light of the modern theory of human knowledge- empiricism.

The epistemological theory of empiricism is basically the contributions of two British philosophers- John Locke (1632-1704) and David Hume (1711-1776). John Locke (1690) introduced the philosophy of empiricism in his classic, *An Essay Concerning Human Understanding*. Understanding, Locke says, is the only quality that gives humans advantages and authorities over other sensible beings. Naturally, knowing the processes/methods about how humans attempt to understand is critically important for advancing human knowledge. Locke initiated the inquiry as follows:

> Let us then suppose the mind to be, as we say, white paper, void of all characters, without any ideas: How comes it to be furnished? Whence comes it by that vast store which the busy and boundless fancy of man has painted on it with an almost endless variety? Whence has it all the materials of reason and knowledge? To this I answer, in one word, from EXPERIENCE. In that all our knowledge is founded; and from that it ultimately derives itself. Our observation employed either, about external sensible objects, or about the internal operations of our minds perceived and reflected on by ourselves, is that which supplies our understandings with all the materials of thinking. These two are the fountains of knowledge, from whence all the ideas we have, or can naturally have, do spring (Locke, 1690: 33).

Although John Locke was the pioneer of the theory, it was David Hume who developed the idea to its fullest form (Russell 1945). Hume has articulated his ideas in two classics: *A Treatise of Human Nature: Being an Attempt to Introduce the Experimental Method of Reasoning into Moral Subjects* and *An Enquiry Concerning Human Understanding*.

Hume begins his philosophy by first dividing all objects of human reason or enquiry into two categories- 'relations of ideas', and 'matters of fact' (Hume 1748). In other words, Hume classifies all objects of philosophical inquiry into two ontological categories- idea and fact. The term 'ideas'- which are mainly studied in the mathematical sciences of geometry, algebra, and arithmetic- signify all those human concepts or mental images, which are not material or observable in the real world. In this case, the relation between two or more ideas is supposed to be readily affirmable, because they are 'either intuitively or demonstratively certain'. For example, the proposition, the square of the hypotenuse is equal to the square of the two sides, expresses a relation between two figures. Similarly, 3 x 5 = 15 is another proposition, which expresses a relation between these numbers. Propositions of this kind, Hume says, are discoverable by the mere operation of human mind although they do not exist anywhere in the universe. Because ideas exist only in human mind, they are precise and certain and hence their relationship is also certain that introduce themselves without any doubt or confusion.

Facts on the other hand are real objects which make up the whole universe. Naturally, all matters of fact are continuously affected some way or other by one another. Therefore, the association between factual objects cannot be predicted with the same or similar degree of certainty that is possible in the case of the relations of ideas. As Hume writes:

> The contrary of every matter of fact is still possible; because it can never imply a contradiction, and is conceived by the mind with the same facility and distinctness, as if ever so conformable to reality. That the sun will not rise to-morrow is no less intelligible a proposition, and implies no more contradiction than the affirmation, that it will rise. We should in vain, therefore, attempt to demonstrate its falsehood. Were it demonstratively false, it would imply a contradiction, and could never be distinctly conceived by the mind (Hume, 1748: 40)?

Since experience is the true source of human knowledge, it follows that all reasoning concerning 'matters of fact' issues are derived from cause-effect relationships: 'All reasoning concerning matters of fact seem to be founded on the relation of cause and effect. By means of this relation alone, we can go beyond our memory and senses' (Hume 1748, p. 41). This observation is however correct only when both causes and effects are present to human mind. But human reasoning are meant to predict future courses of event, which cannot be done based on current and past experiences. Accordingly, the prediction of future behaviour of any natural or social event, thing or relation implies a habitual/instinctive supposition that the course of nature will continue uniformly the same. Individuals conclude that like causes, in like circumstances, will always produce like effects. Customs, Hume says, make people believe that the future will always be conformable to the past:

> All inferences from experience, therefore, are effects of custom, not of reasoning. Custom, then, is the great guide of human life. It is that principle alone which renders our experience useful to us, and makes us expect, for the future, a similar train of events with those which have appeared in the past. Without the influence of custom, we should be entirely ignorant of every matter of fact beyond what is immediately present to the memory and senses. We should never know how to adjust

> means to ends, or to employ our natural powers in the production of any effect. There would be an end at once of all action, as well as of the chief part of speculation (Hume, 1748: 58).

Reasoning from customs are connected to another sentiment called belief, which Hume describes as a livelier, more vivid, firmer, or more intense conception.

To fully comprehend Hume's philosophy of human understanding just summarised requires it to be interpreted in the light of his ideas developed in Book II and Book III. In Book II, Hume deals with human passions. Passion is an original existence and/or its modification, and naturally turns up in mind without any introduction. This proposition suggests that reason alone is powerless to produce any action or volition, which in turn implies that passions cannot be described as either reasonable or unreasonable. Thus, Hume comes up with catchphrase: 'Reason is, and ought only to be, the slave of the passions and can never pretend to any other office than to serve and obey them' (Hume, 1739-40: 266).

Hume examines the final question concerns identifying the factors that excite intellectual passion, which he deals with in Book III. Here he discusses the nature of human morals and their relationships with human understanding. Natural passions, such as hunger, thirst, sex etc., are instigated by body's natural mechanism. But intellectual passions, which involve creating beliefs through reasoning, have little relation with human body's structural or operational mechanism. Accordingly, the only human attribute that can cause these passions to surface in human mind and control human's intellectual world, is 'morality'- the conception of 'good' and 'evil', 'right' or 'wrong'. The main subjects of moral judgement being senses of rightness and wrongness of human conducts, Hume define them as a kind of perception. Approving one character while condemning another is no different from the variety of perceptions housed in human mind. Since reason alone has no effect on passions, it follows that morality, which affects passions, cannot be derived from reason. So Hume concludes:

> Reason is the discovery of truth or falsehood. Truth or falsehood consists in an agreement or disagreement either to the real relations of ideas, or to real existence and matter of fact. Whatever, therefore, is not susceptible of this agreement or disagreement, is incapable of being true or false, and can never be an object of our reason. Now it is evident our passions, volitions, and actions, are not susceptible of any such agreement or disagreement; being original facts and realities, complete in themselves, and implying no reference to other passions, volitions, and actions. It

> is impossible, therefore, they can be pronounced either true or false, and be either contrary or conformable to reason (Hume 1739-40: 295).

Hume's philosophy, which describes how human beings reason and form opinions about the external world as well as their own behaviour, may be summarised as follows: First, matters of fact reasoning, which is what being done here, is founded on cause and effect relationships experienced through sensation and/or reflection. Second, experience cannot be exported in the future, suggesting that past and present cause-effect events cannot used to predict their future behaviour. Therefore, scientific predictions are the outcome of a habitual/ instinctive supposition that the course of nature will continue uniformly the same. The main source of this supposition is 'customs', which convert human experience into 'belief'. Finally, philosophy, Hume says, begins with the maxim that whatever exists in the universe has a cause of existence. This maxim, which implies that there must be definite causes behind every effect, leads to a very interesting doctrine in Hume's philosophy. As mentioned above, human reasoning alone does not cause intellectual activity, which is undoubtedly is an effect. Human passion is the cause that inspires intellectual activity, which in turn is instigated by human morality. Hume's theory of knowledge contends that human morality instigates passions and by that, regulates all human actions and activities, including the intellectual ones.

Behavioural criticisms: an inspection from the Humean perspective

This section is intended to deliver the promise made in the Introduction, i.e., evaluating the behavioural criticisms about *Homo Economicus*. The purpose is to explain the apparent impasse in the current debate by applying Hume's philosophy of human knowledge. This is done by following the same fashion that was adopted to describe the developments in behavioural thoughts, to wit, dividing the behavioural history into Simon-Katona and Kahneman-Tversky eras.

Hume explains his theory of human knowledge by applying the basic method of scientific investigations, which is predicting the future event/occurrence based on cause and effect relations among the concerned matters of facts. Accordingly, the nature of cause-effect relations characterising economic theorisation in general and *Homo Economicus* in particular are stated briefly before embarking on the project at hand. It should be clear by now that HE is a conception, not a person. It represents the community of individuals engaged in the production/consumption of certain material objects. As a consumer, HE's main function is to allocate available income in such a way that her utility is maximised. On the other hand, her main job as a producer becomes one of choosing optimal input combination appropriate to maximise profit. This decision-making issue is largely determined by two natural factors- HE's motive and intelligence, both of which are susceptible to modifications and magnifications through social interaction. Motive- the driving force in all kinds of human activity- is materialised by individual's intellectual ability to process available information. This truth implies that motive and intelligence jointly determine the nature of economic decisions individuals make habitually in their lives, which may therefore be considered as the 'causes' in economic decision-making process. It then follows that the 'effects' in economic theorisation are the outcomes of actions impelled by the individuals' motives and intelligences. These cause-effect relationships implied by economic theories are only 'indications', not exact, because the human motives and intelligences vary greatly among individuals. Marshall makes this point crystal clear in his book *Principles of Economics* when he states that all economic laws are nothing by 'tangencies' (Marshall 1890). His generalisation is quite consistent with Hume's theory that 'human reasoning' is in the end a matter 'custom'.

Given the nature of cause-effect relationships envisaged in the economic theory, several aspects of behavioural objections come up for careful scrutiny. However, the first and foremost issue, particularly relevant to this paper, concerns the passions and morales of mainstream and behavioural economists. It should be obvious that the passions and morales with which classical economists created the HE conception are very different from those with which behavioural economists are criticising the conception. This fact seems to suggest that the HE controversy is the direct outcome of divergent motives and morales of the two schools of economists.

Simon's objections and arguments

Simon's theory of behaviouralism invites several curious criticisms. First, Simon is contesting the neoclassical 'mathematical' model, not the basic theory of mainstream economics. Standard introductory micro texts clearly show that the basic theories of demand and supply can be articulated without imposing the rigid maximisation criterion (Heilbroner and Galbraith 1987), which suggests that the unqualified behavioural criticisms are unjustified. On the other hand, Simon's theory of 'bounded rationality' can be interpreted as relaxing the rigidity of abstract assumptions, which is a standard practice in the neoclassical model building. Mathematical economists often use two terms- 'weak preferences' and 'strong preferences'- in their model, which allow them to vary the model outcome taking into consideration of the differences in HE's decision-making abilities. This line of reasoning leads to the conclusion that Simon's approach adds, if any, little realism in economic theorisation, which cannot be done in the standard neoclassical theory.

Second, the two schools differ significantly about the nature and scope of economics. Simon highlights this issue in his 1978 Nobel Lecture, in which he strongly argues that political economy, the heartland of economics in his words, undermines the importance of 'decision theory':

> I cannot otherwise explain the rather weak and backward development of the descriptive theory of decision making including the theory of the firm, the sparse and scattered settlement of its terrain, and the fact that many, if not most of its, investigators are drawn from outside economics - from sociology, from psychology, and from political science. Respected and distinguished figures in economics - Edward Mason, Fritz Matchup, and Milton Friedman, for example - have placed it outside the Pale (more accurately, have placed economics outside its Pale), and have offered it full autonomy provided that it did not claim close kinship with genuine economic inquiry (Simon, 1978: 344).

Simon, the above quote suggests, clearly rejects the scope and methodology of 'political economy' defined by the neoclassical economists, who argue that 'decision study' is not a major component of mainstream analytical framework. Behaviouralists decline to accept this explanation. From the perspective of Hume's theory, this disagreement simply implies that the two schools are not debating on the same subject. Accordingly, by Hume's opinion, this differing understanding is the root of behavioural HE controversy.

In this regard, a truly interesting inquiry would involve critically scrutinising the logical validity of behavioural assertion. This issue, as stated already, is beyond the jurisdiction of the paper. Yet, it may not be quite unprofessional or irrelevant to pass some cursory comments here.

The entire orthodox economics, beginning from Adam Smith, has been basically concerned with developing empirical laws and principles that govern the economy- national and/or and international. In other words, the ultimate objective of economics is to examine how an economy works, to isolate the forces that cause its ups and downs and finally to suggest policy recommendations to change its course toward politically desirable directions. Modern economics is now divided into two branches- microeconomics and macroeconomics - for studying various aspects of an economy. Microeconomics studies the behaviour of micro variables, which are directly or indirectly the outcomes of the actions taken by the disaggregated micro units. Macroeconomics studies the behaviours of macro variables such GNP, general price, money supply and demand, etc. which are merely aggregation of micro level variables.

HE has no visible role in macro models, which suggests that this conception is particularly pertinent to microeconomics. An inspection of any standard microeconomics text would reveal that the basic objective of this branch is to develop the 'partial equilibrium market model' consisting like two blades of a scissor- the demand and the supply functions of a commodity. In this model, market demand and supply functions are derived by horizontally summing individual demand and supply functions. Accordingly, economists need to study the behaviour of individual demand and supply curves. HE's function begins at this stage and normally end there.

Given HE's assigned role in economic theorisation, the main source of disagreement between the mainstream and behavioural schools seems to spring from their divergent purposes of economic model building. In case of neoclassical economics, the objective of model building is to explain the market mechanism, which involves identifying the demand and supply forces, predicting the expected relationships between commodity prices and quantities demanded/supply. And as noted above, the market demand and supply functions are derived from individual functions. This suggests that market demand and supply functions simply reflect the properties of those of individual functions. Accordingly, neoclassical economists have introduced HE for basically explaining the properties of market demand and supply variables, which are founded on empirical observations. To be more specific, neoclassical economists have developed consumer and producer theories primarily to explain market demand and supply functions.

The purpose of model building in behavioural economics is dramatically different. Here the fundamental purpose of analysis is to describe how economic actors behave in the decision-making process, particularly under the conditions of uncertainty. This analysis demands the details about how individuals resolve complicated choice-making problems. Unlike the mainstream economics, the decision-making problems cannot be general; they have to refer to specific situations. For example, the decision-making problem involving the operations of stock market must be different from that of allocating annual income among subsistence expenditure, vacationing outlay and savings. These decision-making problems are not only different in terms of activity involved, but also in terms on the level of uncertainty and complexity and intelligence required.

Simon's argument that mainstream economists consider the decision-making issue 'outside the pale of economics' is correct but does not offer any ground to criticise neoclassical treatment of HE. The theory of firm, which Simon cites as example, is not meant to be a study of decision-making in production economics; it is supposedly meant to explain the behaviour of observed commodity supply functions.

Finally, although the authoritative mainstream economists have in general remained non-vocal about the criticisms orchestrated by Herbert Simon and his compatriots; curious commentators often raise questions about their professional qualifications to criticise the methodology of economics. For example, Sent (2005) questions Simon's professionalism by stating that he was a political scientist by schooling and did most of his research on 'administrative science'. Then many orthodox economists, as indicated above, are less inclined to recognise his research as a significant contribution to economic science (Baumol 1979; Ando 1979). This seems a substantial point in explaining undying academic controversy from the perspective of Hume's theory of human understanding.

Kahneman-Tversky's rejection of the HE model

The new watershed of the behavioural economics, as mentioned above, was pioneered by two psychologists. Since their intellectual orientation is different, they might have weaknesses in appreciating the true role and purpose of *Homo Economicus* in the classical and neoclassical theoretical frameworks. This proposition seems quite consistent with Hume's perspective about intellectual enterprises. Coming from a different academic discipline, these authors certainly do not share the mission and vision with which the classical authors conceived the HE idea and later neoclassical economists employed it. To put it differently, the passions and morales, which motivated them to develop the currently popular behavioural theories, were vastly different from those of the classical and neoclassical economists. This point is substantiated below by evaluating their research results.

Kahneman and Tversky introduced a whole new chapter in the slowly growing sub-discipline of behavioural economics by proposing two psychological theories. The first theory- Heuristics in human decision-making says that individuals commit systematic biases in decision-making process. This is because the hard-wired natural technologies humans inherit by birth are irreplaceable and susceptible to little improvement. This decision-making error takes place when individuals are required to make judgements under uncertainty. Their second principle, 'prospect theory', is a critique of the prevailing expected utility hypothesis in economics. Tversky and Kahneman contend that individuals ordinarily put higher importance on avoiding loss compared to making gain. Thus, if a person is given two equal choices, one expressed in terms of possible 'gain' and the other possible 'loss', people normally choose the latter instead of the former.

As psychological knowledge, these theories are, and must be, very important and interesting. This, however, does not mean that they are equally important and appropriate for analysing the theoretical and/or empirical problems of economics, let alone supplying a methodology for developing a new branch in the discipline. The 'Heuristics and biases' theory is akin to Simon's idea of 'bounded rationality'. In this theory, Tversky and Kahneman identify the factors that determine individuals' beliefs and examine how people assess probability of uncertain events/values. People take many decisions, they contend, based on beliefs concerning the likelihood of uncertain events such as the outcome of an election, the guilt of a defendant, or the future value of the dollar. These beliefs are usually expressed in statements such as 'I think that . . . ,' 'chances are . . .', 'it is unlikely that . . . ,' and so forth.

These assertions are indeed true. What however wrong with the ideas of these authors is the suggestion that these 'beliefs' are formed under perfect decision-making environment which entails 'perfect rationality', 'perfect certainty 'and 'perfect knowledge' about the object/event under consideration. First, there is no evidence that mainstream economists like Alfred Marshall, Lionel Robbins, Paul Samuelson, Ken Arrow and Gerald Debreu, who have shaped the nature and scope of modern neoclassical economics, harboured this kind of idea. Quite on the contrary, their motives, passions and morales of economic research were vastly different from those of Kahneman and Tversky as has been revealed in the relevant section. Thus, both the behavioural psychologists and economists appear to be misinterpreting conventional economic wisdom at the very least.

Second, the mainstream economists have used deductive logic for conceiving the HE idea. By definition, deductive arguments/premises are general or universal, meaning they must include all the elements composing the domain. That individuals are by nature self-lover is such a premise. Kahneman and Tversky, on the other hand, have used inductive logic to articulate their theory and criticise the mainstream methodology. For developing the 'Heuristics and biases' theory, they conducted several experiments, one of which involves testing the mathematical knowledge of undergraduate students: A small town has two hospitals, one large and one small. For a period of 1 year, each hospital recorded the number of days on which 60% or more babies born were boys. Students were presented with three multiple-choice questions: The number of days was higher in (i) larger hospital, (ii) smaller hospital or (iii) about the same. Most students preferred the third choice, because they were persuaded with the belief that this sample is equally representative to population distribution. Yet, according to sampling distribution, the small hospital is expected to report more cases than the large one, because the large sample is less likely stray from the population distribution, which is 50%.

It seems a very legitimate question to raise whether, and how much, such type of I.Q. testing experiment useful in economic inquiry, particularly in the one that is concerned with developing the basic theories of the discipline. An individual, who is grappling constantly with allocating limited income to meet the myriads of her needs, is, under no circumstances, experiencing such multiple-choice situation. They are constantly adjusting their choices in line with the changes in their income-earning conditions and market prices.

Finally, 'prospect theory' is based on the results of several experiments, one of which involves surveying a number of university students and faculties for testing the soundness of neoclassical expected utility theory. The questionnaire they prepared for the survey contained about a dozen hypothetical choice problems implying different levels of probability of winning/losing certain amount of income. The survey indicated that the respondents put higher weights of winning a sure given sum of money compared to wining a bigger sum money which involves the risk of losing the bet. Tversky and Kahneman concluded from these experiments that individuals ordinarily put higher importance on avoiding loss than making gain. More specifically, if a person is given two equal choices, one expressed in terms of possible 'gain' and the other possible 'loss', under normal circumstances, she would prefer the latter, not the former.

This is indeed an empirical truth. But the question that demands serious consideration is how this empirical information contributes to reformulating the role of HE in the basic neoclassical model. What kind of 'loss/gain prospect' does a consumer take into consideration when she is deciding whether to buy, say, furniture or going to a vacation? These issues make it very difficult to see how Kahneman and Tversky's theories challenge the conventional wisdom of microeconomics, let alone contribute to its improvement.

Concluding remarks

The main objective of this paper was to evaluate the behavioural controversy concerning *Homo Economicus* in the light of Hume's theory of human knowledge. Accordingly, it discussed the origin and evolution of the concept in the mainstream economics, reviewed the behavioural criticisms, summarised the main tenets of Hume's philosophy of human knowledge and finally examined the behavioural opinions from Hume's perspective. The paper now ends with the following observations:

First, human mind works with perceptions, which determine the methods of inquiry as well as the researcher's line of reasoning. It is clear that the *Homo Economicus* perception, with which classical and neoclassical schools have articulated the basic theories of economics, is vastly different from that of their past and present behavioural colleagues. This, according to Hume's theory, is the root cause of the behavioural controversy. Second, psychological research has been the pivotal inspiration of modern developments in 'behavioural economics'. However the passions and morals with which psychologists undertake their research are different from those of mainstream economists. More specifically, social scientists belonging to two different disciplines have different objectives/motives of research and therefore have been studying different issues although they are dealing with the same subject- an individual's mental/psychological ability in decision-making under uncertainty. Thus, the relevance of psychological research for economic inquiry, particularly for analytical concept like HE, is doubtful.

Third, *Homo Economicus*, both in mainstream and behavioural economics, is a conception intended to represent the concerned group of humankind. Depending upon the nature of economic topic under investigation, HE might represent the entire community of consumers or producers. For example, the basic microeconomic theories of demand and supply apply to all human societies, irrespective of their cultural and intellectual backgrounds. Therefore, it will be a complete misrepresentation of facts if these relationships are suggested to be different between schooled people of affluent societies and the indigenous people living in the unknown remote places in the any part of the world. On the other hand, the cultural and intellectual backgrounds of the people, whom psychologists and behavioural economists use in their experiments, fit to a very specific group of individuals. For example, the behavioural theory seems quite useful in the modern field of finance. Individuals involved in trading stocks and other financial assets like exchange rates, interest rates etc. are not ordinary people, who are the subjects of neoclassical inquiry. Therefore, behavioural criticisms of neoclassical HE model are logically weak.

Fourth, the blanket behavioural claim that *Homo Economicus* is a defective model for economic analysis is another source of controversy: '*Homo Economicus* is extinct, felled by the new sciences of behavioural economics and neuroeconomics, which have demonstrated that we are remarkably irrational creatures. Thousands of experiments in behavioural economics since Daniel Kahneman and Amos Tversky founded the field with their seminal 1979 paper, 'Prospect Theory: An Analysis of Decision under Risk,' have demonstrated that most of us are highly loss averse... Thanks to functional magnetic resonance imaging (fMRI), we now know where in the brain this effect happens' (Shermer 2007). Such type generalisation cannot be supported by reasons or facts.

The weaknesses of behavioural school, which this paper has tried to identify and explain are easier to see when they are looked at from the perspective of Hume's theory of human knowledge.

Endnotes

[1] This sections draws from Elahi and Stillwell (2013).

[2] In the development of the HE concept, the knowledge of moral philosophy seems to have played a bigger role than that of economics. This could perhaps be one cause of controversy in the economic literature. For, economists in general pay little importance to moral philosophy, although they deal with its subject-matter- the human being as economic agent. Mill's role in this whole matter, as mentioned before, is synthesiser, not really innovator.

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