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A Research Agenda for Institutional Economics as a Moral Science: The Cambridge School in the Twenty-First Century

By

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Abstract

The paper sets an agenda for ‘institutional economics as a moral science’ (IEMS) by understanding the micro-macro links humans and institutions mutually construct, relying on the writings and thinking of the Cambridge School. We argue that economics should be reconsidered as a study of man with particular emphasis on human nature and the dynamics of institutions. We urge scholars of mainstream economics, who have minimised non-ergodicity and uncertainty and exaggerated utilitarianism, to have cooler heads and warmer hearts. This implies that we need to strike a right balance between economics and ethics by bringing the man as she/he is back into the positivist approach of mainstream economics and by enriching the ethical approach of economics as a moral science. We hope for a revival of the Cambridge School as a moral foundation for economics in the twenty-first century.

Keywords

IEMS, Human nature, Institutions, Non-ergodicity, Uncertainty

1. Introduction

The paper sets an agenda for ‘institutional economics as a moral science’ (hereafter, IEMS) by understanding the micro-macro links (e.g., Alexander *et al.*, 1987; Aoki, 2001, 2010; Bhaskar, 1978; Foss, 1994; Hodgson, 1998A, 2007A, B; Lawson, 1997, 2019; Taniguchi, 2022A) humans and institutions mutually construct and reconstruct, based on the study of man and economics in the tradition of the Cambridge School.

We believe that economics should be understood as a study of man with particular emphasis on human nature and the dynamics of institutions. This kind of IEMS would rely on a series of ideas found in the canonical tradition of the Cambridge School as well as on organicism (Hodgson, 1993) which focusses on the interplay between humans and institutions. We strongly urge scholars of mainstream economics who minimise non-ergodicity

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and uncertainty, exaggerate utilitarianism, and adopt an engineering, highly quantitative approach to prediction, to have cooler heads and warmer hearts. This implies that we need to strike a right balance between economics and ethics by bringing the man as she/he is back into the positivist approach of mainstream economics and by enriching the ethical approach of economics as a moral science (e.g., Atkinson, 2009; Groenewegen, 1996; Martins, 2021A, B; Sen, 1987; Taniguchi, 2022A).

Micro-macro links are ones wherein humans interact with the world via institutions which act as intermediaries to illuminate how man behaves (Coase, 1984; Marshall, 1961) under conditions of uncertainty and non-ergodicity (Keynes, 1921, 1936, 1973) when the world is characterised as an open system (Lawson, 1997). In such a world, rational and utilitarian calculations are by no means available to all and, thus, humans must rely on institutions as systems of shared beliefs which function as social rules (e.g., Aoki, 2001, 2010; Deakin, 2017; Deakin *et al.*, 2017; Greif, 2006; Hodgson, 1997, 1998A; Langlois, 1986, 1992A; Lawson, 2019; Loasby, 1976; North, 2005) or fall back on their animal spirits driven by spontaneous impulses (Keynes, 1936).

For understanding human nature at the micro level, we begin by discussing three outstanding scholars at the University of Cambridge: William Whewell, who contributed to the establishment of an educational system for moral science; Alfred Marshall, who contributed to economics as a study of man; and John Maynard Keynes, who dealt with issues of humans and the economy under conditions of uncertainty. In the main, all three took a stance against utilitarianism that emphasises a rational and instantaneous calculation of pleasure and pain.

The Cambridge School made a significant contribution to the development of economics as a moral science. For example, Keynes cast doubt on the assumption of ergodicity that denies the world is changing incessantly. Mainstream, positive economics (e.g., Friedman, 1953; Robbins, 1932), by contrast, assumes both utilitarianism as a moral standard and the ergodicity of the world; this leads to a distorted view of economics as an engineering-based, non-moral science whose microfoundations are characterised by ‘the narrowings of the broad Smithian view of human beings’ (Sen, 1987, p 28).

Keynes and his fellow-travellers (e.g., Davidson, 1991A, B) concentrate on the non-ergodicity of the economy, preventing us from predicting correctly what will happen in the future. Along this line of thinking, Tony Lawson (1997) criticises the notion of humans and institutions as closed systems with an orientation toward prediction based on empirical sciences. Douglass North (2005), likewise, insisted on a deep understanding of the micro-macro links by which imperfect human perceptions and non-ergodicity of the world are intimately connected.

The paper is organised as follows. Section 2 offers an overview of how the tradition of moral science developed at the University of Cambridge with particular focus on Whewell, Marshall, and Keynes. Section 3 explores the criticisms of utilitarianism and ergodicity, both pillars of mainstream economics, by the Cambridge School. Section 4 sets an agenda for IEMS and seeks a deeper understanding of man beyond utilitarianism and the world beyond ergodicity and certainty. The conclusion discusses a possible future of the Cambridge School in the twenty-first century.

2. The historical development of moral science of the Cambridge School: an overview

We begin with a succinct explanation of how moral science developed at the University of Cambridge. In doing so, we focus on three outstanding scholars: Whewell, who established an educational system for moral science; Marshall, who built a solid position for economics as an independent academic discipline for the study of man; and, Keynes, who dealt with issues of humans and the economy under uncertainty from a moral science perspective. We argue that the Cambridge School has historically made a significant contribution to the development of economics as a moral science.

Moral Science Tripos were established at the University in 1848 by integrating political economy, laws of England, general jurisprudence, modern history, and moral philosophy. Whewell was one of the driving forces behind the establishment, and he was an outstanding scholar in the so-called 'Cambridge network' (Cannon, 1978) of the early nineteenth century, consisting of intellectuals who engaged in educational reform of science and religion. He was appointed as the Knightbridge Professor in 1838, a venerable position established in 1682. According to Winstanley (1940), Whewell played a pivotal role in the 1851 university reform, promoting a series of innovations characterised by the introduction of the Natural Science Tripos and the Moral Science Tripos. He gained considerable influence after he was installed as the Master at Trinity College in 1841 and appointed Vice-Chancellor in 1842.

Whewell strengthened an intellectual platform on which the early Cambridge School was based relating economic science to human actions and moral and social principles of human relations (Whewell, 2001). Keynes called Thomas Malthus the first economist at Cambridge, and Harcourt (2003) traces the origin of the Cambridge School to Marshall. Taking account of this, there might be objections to our attempt to connect the Cambridge School to Whewell but, in our view, it is inappropriate to set aside the practical and theoretical contributions Whewell made in developing economics as a moral science and leading university reform.

In the late nineteenth century, however, a movement emerged at the University to professionalise economics and to disassociate it from the Moral Science Tripos. Instead economics should become a pillar of a new Tripos that integrated politics, under the leadership of Marshall who was appointed as an economics professor in 1884. According to Groenewegen (1988), Marshall strongly pushed for the professionalisation of economics because of the increasing complexity of business, the necessity of nurturing sympathy and intelligence in labour relations, and a motivation for cultivating economists with capabilities to reason, recognise, and observe problems.

Henry Sidgwick, Knightbridge Professor at that time, took a negative stance in separating economics from philosophical issues and argued against the professionalization of economics in the educational system reform. But the death of Sidgwick enabled Marshall to achieve his desire to reform the educational system for the establishment of the Economics Tripos in 1903.

Therefore, in the system of social sciences distinctive to the Cambridge School based on 'the foundation of Economic Science' (Milgate, 2016, p 2) and elaborated since George Pryme lectured on political economy at the University in 1816, Marshall's efforts to establish the Economics Tripos made it possible for economics to climb to a higher status and be regarded as an independent, specialised branch of knowledge.

Needless to say, Marshall did play an important role in strengthening the foundations on which the Cambridge School of economics developed (Keynes, 1972). He stated in the opening of his *Principles of Economics*:

Political Economy or Economics is a study of mankind in the ordinary business of life; it examines the part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of wellbeing. Thus it is on the one side a study of wealth; and on the other, and more important side, a part of the study of man. (Marshall, 1961, p 1)

Thus, by putting more emphasis on the study of man rather than the study of wealth, Marshall argued for economics as a moral science with particular emphasis on the enhancement of wealth at the macro level and the growth of individuals at the micro level.

Like Whewell and Marshall, Keynes also promoted the study of man as a moral science. This is well reflected in what he wrote to Roy Harrod, a criticism of how inappropriately Jan Tinbergen had used the econometric method and how models should be rightly chosen. Keynes put it clearly:

Economics is a science of thinking in terms of models joined to the art of choosing models which are relevant to the contemporary world. It is compelled to be this, because, unlike the typical natural science, the material to which it is applied is, in too many respects, not homogeneous through time. ... As against Robbins, economics is essentially a moral science and not a natural science. That is to say, it employs introspection and judgments of value. (Keynes, 1973, pp 296–7)

He went on to say that economics, which relies on introspection and values, can be taken as a moral science treating factors such as motivations and expectations that may cause uncertainty.

Furthermore, Keynes's views of moral science put significant weight on human nature as seen in his 'My Early Beliefs' (Keynes, 1973). In short, he criticised the conventional view that simply reduced human nature to rationality. According to him, misunderstanding human nature results in a shallowness of decisions and emotions that cripples human nature. Paraphrasing a famous phrase of Marshall, his teacher, Keynes avers that to understand human nature requires 'cool' rationality and 'warm' emotion. For Keynes, economics as a moral science is a human science, based on a deep understanding of economic phenomena that are relentlessly changing and far from homogenous.

We have clarified the view that economics should be considered a moral science, based on the study of man shared by Whewell, Marshall, and Keynes. In particular, as uncertainty is inherent in heterogeneous economic phenomena, we will explore the relationships between an uncertain world and human diversity and how they affect institutional economics (e.g., Aoki, 2001, 2010; Deakin, 2017; Deakin *et al.*, 2017; Foss, 1994, 1998; Greif, 2006; Hodgson, 1998A, 2003A, B, 2007A, B; Langlois, 1986, 1992A; Lawson, 1997, 2019; Loasby, 1976; North, 2005); we focus especially on the role of institutions as incorporating both rules and shared beliefs. We refer to this as IEMS.

3. Mainstream economics as a non-moral science: two criticisms

We amplify two criticisms of the Cambridge School against mainstream economics, defined as positive economics founded on utilitarianism. The Cambridge School criticisms focus on the rational calculation of pleasure and pain by humans at the micro level, and the assumption of ergodicity of the economy, negating the ever-changing nature of the world, at the macro level. These criticisms are worth scrutinising as they relate to micro-macro links or, more precisely, to how the microfoundations of human nature are intertwined with the macro environments surrounding humans. They played a pivotal role in Keynes's articulation of his visions to reconstruct economics as a moral science and, thereby, to revolutionalise economics.

3.1. Criticism against utilitarianism: at the micro level

Utilitarianism has a long history since Aristotle as well as a wide and diverse set of branched ideas (e.g., Rawls, 1971; Sen and Williams *eds.*, 1982). Thus in the context of the Cambridge School in general, and how Whewell, Marshall, and Keynes in particular, cast significant doubt on utilitarianism, we would like to go back to Jeremy Bentham to see how economics understands human nature at the micro level. A key for rejuvenating economics as a moral science is to go beyond utilitarian calculation and self-interest that, in our view, unduly straightjacket economic man. Instead we want to understand man as she/he is (Coase, 1984, 2012; Marshall, 1961).

Utilitarianism penetrated society starting with the writings of Bentham, but the ethical code that espoused the greatest happiness for the greatest number originated with Joseph Priestley (Canovan, 1984). For Bentham, utilitarianism is the only behavioural principle that is considered right. He argued that the good or evil of motivations should be assessed in terms of what were the consequences of the actions (Bentham, 1789/1996). Bentham and J. S. Mill took a position that combined hedonism, pleasure as the only good and pain as the only evil, and consequentialism, the good or evil of actions should be evaluated in terms of the good or evil of consequences (Plamenatz, 1949). Mill altered his original stance by taking into consideration a difference in the quality of happiness (Mill, 1861/1863) and the human capacity of sympathising with social happiness (Mill, 1848/1871). In a nutshell, they identified pleasure with happiness and advocated that the first principle of morality should be the greatest happiness for the greatest number.

Utilitarianism had a tremendous impact on how economics developed. Whewell, on the basis of his Christian beliefs, attempted to separate science from utilitarianism early on (Yeo, 1979), and he insisted that Bentham's utilitarianism place the greatest happiness for the greatest number as the goal for human action (Whewell, 1852). According to Whewell, utilitarianism, based on lower human desires, such as pleasure, is an inferior morality, but intuitionism, which relies on conscience and reason, is a superior morality.

Along the lines of thought of Bentham and Mill, Sidgwick stood out in the Cambridge School, as he averred that humans cannot integrate selfishness and altruism in a complete manner (Sidgwick, 1874). He tried to resolve the gap between social happiness and individual happiness by depending on intuition to choose the right actions, like Whewell.

But Marshall, who was a Sidgwick's student, devalued utilitarianism and was not especially influenced by it when he constructed his own system of economics (Backhouse, 2006). Nevertheless, Marshall admitted that he was the oldest student of Sidgwick in moral

science and was influenced by his teacher in his early days. Perhaps with some exaggeration, he called Sidgwick ‘my spiritual father and mother’ (Keynes, 1972, p 168).

Marshall was unconvinced by a utilitarian focus on the sum of pleasures at a particular point in time, as he believed that the sum of pleasures expected in the future, well beyond a particular point in time, should be taken into consideration (Whitaker, 1975). Keynes (1972) rightly argued:

The solution of economic problems was for Marshall not an application of the hedonic calculus, but a prior condition of the exercise of man’s higher faculties. (p 170)

In addition, Marshall argued for deliberation rather than self-interest in the economy and encouraged cooperative behaviour on the basis of deliberation (Collini *et al.*, 1983). Thus, Marshall can be regarded as one who had a greater vision than classical utilitarianism, as he paid considerable attention to economic progress on the basis of deliberations rather than satisfying desires by utilitarian calculus. For Marshall, it is paramount to explore how humans change, engage in ordinary life, and carry out business (Marshall, 1898). Therefore, we argue that utilitarianism has a fatal defect in that it prevents us from understanding the higher capabilities of humans that enable activities at a maximum level.

We would like to note a caveat because we expect objections to the assertion that Marshall devalued utilitarianism. According to Keynes (1972), Marshall never deviated from utilitarianism although he treated the doctrine cautiously in that he was unwilling to associate economics with any value judgement or moral standard. Keynes went on to say that Marshall believed in utilitarianism in the 1880s, whereas he did not do so in his later years. In this respect, it might be an overstatement to say that Marshall abandoned utilitarianism.

However, as Collini *et al.* (1983) argue, Marshall denied utilitarian money making as satisfying desires for material wants without taking into account the ethical and altruistic psychology of humans. This permits us to state that Marshall did devalue utilitarianism.

Gerrard (1992) argues that George Edward Moore supported rule utilitarianism which emphasised rule-following, whereas Keynes denied this because a sufficient body of evidence cannot be collected to justify rule-following. Rather Keynes took a stance to flexibly assess the pros and cons of an action.

In particular, Keynes (1972) took utilitarianism in the Benthamite tradition as “the worm which has been gnawing at the insides of modern civilisation” (p 445). Insisting that utilitarianism destroys the quality of an ideal, Keynes advocated for economics as a moral science in which ethical and moral insights are paramount. From this point of view, he cast doubt on positive economics which reduced human nature to a rational utilitarian calculus. In Section 4, we will argue that in order to revive economics as a moral science, a view of economic man as calculative and utilitarian must be overcome. Before that, however, we examine the criticisms of positive economics at the macro level.

3.2. Criticism against ergodicity: at the macro level

As noted above, what Keynes underlines is that humans engage in economic activities in a changing world and thus the world is far from homogenous. Most mainstream economists adhere to an unrealistic assumption of ergodicity wherein they derive predictions of what will happen in the future by using data available in the present and from the past to calculate

probabilities. These are applied to possible future outcomes (Davidson, 1996, 2007). This is in contrast to Keynes and his fellow-travellers (e.g., Davidson, 1991A, B) who consider the non-ergodicity of the world as fundamental. If incessant change makes it impossible for the world to be homogenous through time, it is reasonable to drop the assumption of ergodicity as Post Keynesians do.

In this regard, the propositions of Lawson (1997) are worth scrutinising. Most theories of modern science are oriented to investigate the laws of causality and to explore the regularity of events, implying that 'if event x occurs, then y follows'. However, Lawson argues that deductionism, on which these scientific efforts are grounded, leads us to regard an open system composed of humans and institutions as a closed system, consisting of atomistic beings, wherein econometric methods can be applied to investigate the regularity of an event.

It can be said that Keynes held a stance sympathetic to Lawson in this light. He negated the application of quantitative methods to economic issues which are non-ergodic in nature. As for method, he was very skeptical of the assumption that 'the future is a deterministic function of *past statistics*' (Keynes, 1973, p 287: emphasis in original) and argued that we should take into consideration the state of confidence relating to 'non-numerical factors, such as inventions, politics, labour troubles, wars, earthquakes, financial crises' (*ibid.*, p 287). He went on to say that 'the pseudo-analogy with the physical sciences leads directly counter to the habit of mind which is most important for an economists proper to acquire' (*ibid.*, p 300). For him, econometric methods, trying to measure by calculation what is essentially non-numerical, are fit for sorcerers but not for scientists.

Following Keynes, we argue that it is unwise for economists in particular and social scientists in general, who have to analyse what occurs in a non-ergodic world, to imitate the quantitative methods adopted in physics and chemistry and to apply them to phenomena which are fundamentally different from those in the natural sciences. In this respect, as Hayek (1989) rightly argued, social sciences have to deal with a world with so much complexity that models require very many variables.

Despite how Keynes and Hayek tried to persuade scholars of later generations, the majority of them tend to separate economics from history and to adopt the assumption of ergodicity (Davidson, 2007). Whether it is mathematical formalisation (e.g., Samuelson, 1947) or empirical research based on instrumentalism (e.g., Friedman, 1953), adopting an assumption of ergodicity does not result in an understanding of how an economy changes in the real world and how humans engage in rational reasoning. In a nutshell, the future is neither so simple nor certain that we can easily gain correct predictions about it (Loasby, 1976, 2011; Shackle, 1972).

In the main, mainstream economics based on empiricism enables one to predict the future with certainty by way of some Turing machine, whereas Keynes and Post Keynesians reject such faith because of the fallibility and ignorance of humans (Davidson, 1991A). Subjective probabilities and relative frequencies cannot be derived from sorting out the observations of the past (Davidson, 1991B). Thus non-ergodicity of the world implies that the future is inevitably and always uncertain; reproducibility in situations is impossible.

In this vein, North (2005) identifies the micro-macro link problem, one of the most important topics for institutional economics, by connecting the non-ergodicity of the world at the macro level to imperfect cognition of humans at the micro level. This is consistent with how Keynes treated the micro-macro link. It is unlikely that mainstream economics, whose main pillars are a utilitarian calculus at the micro level, the ergodicity of the world at

the macro level, and a prediction-centric methodology based on positive science, offers a proper theoretical foundation on which to develop meaningful ideas concerning micro-macro links.

4. Toward IEMS: setting an agenda

4.1. Taking man as she/he is: a solution to criticism against utilitarianism

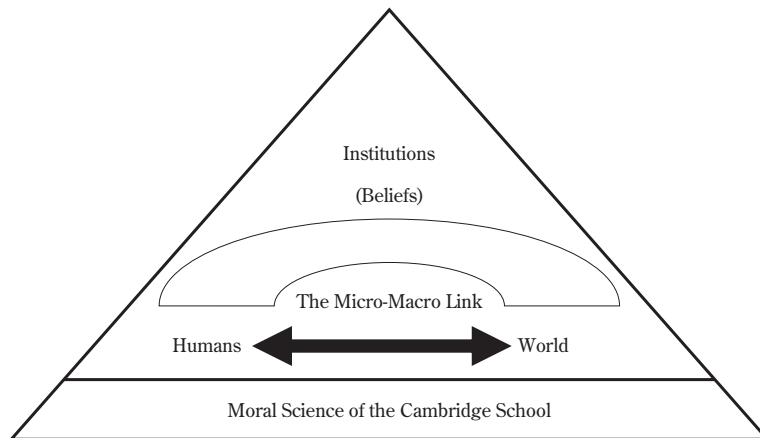
Amartya Sen, who is in the moral science tradition of the Cambridge School, never stops criticising mainstream economics. By using well-turned phrases such as ‘the narrowings of the broad Smithian view of human beings’ (Sen, 1987, p 28), he criticises the distorted view of economic science *à la* Robbins or positive economics, also known as the engineering approach in economics; it results from a separation of economics and ethics and it runs counter to the original spirit of Adam Smith. According to Sen, economics requires ethical considerations of human motivations and judgements of social outcomes.

We totally agree with the Sen’s proposition to seek a wider view of humans through an ethical approach, and we argue that the distancing of economics from ethics is deeply associated with the so-called ‘Adam Smith problem’ (Viner, 1991) which examines inconsistencies in the views of humans between *The Theory of Moral Sentiments* (Smith, 1759/2009) and *The Wealth of Nations* (Smith, 1776/1994: hereafter, *WN*). Most, but not all, economists derive a distorted view of human beings’ self-interested actions or utilitarian calculus by paying too much attention to and interpreting the *WN* in a constrained fashion. Judgements of value based on self-interest are misleading in that they result in a narrowing of what humans are and can do. Morality and sympathy for doing the right thing cannot be explained by a utilitarian calculus based on self-interest (Hodgson, 2012, 2014).

On the other hand, Smith and Wilson (2019) shed light on socialisation, the mechanism by which subjects are inculcated with values through the norms of a group or society, in explaining anomalies such as human cooperation. And they advocate ‘humanomics’, namely ‘the study of the very *human* problem of simultaneously in two worlds, the personal social and the impersonal economic’ (p 2: emphasis in original). In this regard, Fehr and Fischbacher (2004) argue that institutions such as rules and conventions are essential in maintaining human cooperation in a large-scaled impersonal world. Institutions are needed and should be included in the study of the man, as she/he is.

In our view, both prioritising an ethical approach of economics *à la* Sen and reviving the Smithian view of the socialised man by humanomics can be regarded as legitimate outcomes of the moral science of the Cambridge School. They share a sense of morality beyond self-interest and the importance of sympathy in constructing human models. We would aver that IEMS or, more precisely, the economics of interactions between humans and the world through the medium of institutions, is much needed since institutions are fundamental to the study of man as moral science. We represent these kinds of interplays as Keynes’s pyramid (Figure 1).

Behavioural economics, which attempts to understand humans realistically, can contribute to our understanding of bounded rational humans in the sense that its psychological experiments may clarify the biases and errors when humans rely on intuition and heuristics in making decisions (e.g., Foss, 2003A, B; Hargreaves Heap, 2013; Kahneman, 2011; Thaler, 2016; Thaler and Sunstein, 2008). But the optimistic policy scenarios behavioural

Figure 1 Keynes's Pyramid

economics formulates are such that bounded rationality's undesirable outcomes may be remedied through soft-paternalism, directing human choices and decisions to desirable outcomes implied by rational choice models. Thus, as Mehta (2013) argues, actions by bounded rational agents fit neatly within the category of the standard model of rationality in mainstream economics with an engineering orientation.

On the contrary, Marshall (1961) emphasises the diversity and totality of human nature and the micro-macro links connecting the changes in human character at micro level to the resolution of the problem of poverty at macro level. He sought an understanding of the real economic system in which humans as they are act.

Following Marshall, Coase (1994) does not give way to mainstream economics which supports the engineering approach and a distortion of a broad Smithian view of humans in which sympathy plays a significant role. Moreover, focussing on the micro-macro links, Coase (1984) argues that institutional economics should study man as she/he acts within constraints imposed by realistic institutions. Thus the micro-macro links lie at the core of institutional economics (e.g., Aoki, 2001, 2010; Hodgson, 2004C).

For Marshall and Coase, the micro-macro links of humans and institutions must be at the heart of their economics (Taniguchi, 2022A). We take their institutional economics as paramount to reviving the study of man, and it is indispensable to pay attention to the interdependence between the world as it is with non-ergodicity and uncertainty, on the one hand, and man with a rich human nature, on the other hand. A full understanding of humans enmeshed in micro-macro links cannot be gained by using a utilitarian calculus.

In addition, research in institutional economics, taking into consideration the embeddedness of interplays between economy and society and changes in incentive constraints that it causes (e.g., Aoki, 2001, 2010), offer the essential pieces necessary for the puzzle of what we call IEMS, which investigates the nature of humans and institutions and the interdependencies between them. As for human nature, behavioural assumptions based on realism, such as sympathy and morality, bounded rationality, and changes in incentive constraints through social embeddedness should be added. Such extensions are necessary for constructing a more balanced model of human behaviour as an alternative to one of economic man characterised by utilitarian calculus. We note three caveats on extended

behavioural assumptions in the context of the micro-macro links below.

4.2. Three caveats on extended behavioural assumptions of humans

4.2.1. Influence of position

In setting extended behavioural assumptions, it is important to pay heed to the influence of position on human action. In this respect, Smith (1759/2009) introduced the concept of an impartial spectator who plays a complementary role in enhancing sympathy arising from the imaginary exchange of situations. He pondered that the interactions between the man within and the man without increases the impartiality of judgements.

As Sen (2009) rightly argues, people adopt perspectives dependent on their positions, and this results in the emergence of shared beliefs that are limited to specific positions. An impartial spectator is needed to diagnose errors related to positions. Sen insists that we should be aware that diverse sets of human activities arise as a result of specialisations related to positions and locations.

4.2.2. Capabilities and habits

Our focus should be on the diversity of humans as a collection of capabilities which result in individual activities (e.g., Davis, 2009, 2011; Sen, 1993) and higher-order capabilities of organisations or groups (e.g., Robeyns, 2005; Teece, 2009).

Heiner (1983) argues there is a CD gap between problem solving *capabilities* that an individual has and the *difficulties* faced in the world. And he suggests that an individual with the high-level CD gap tends to increase the likelihood of repeated action by making choices from a limited set of actions. Thus it can be said that buffering uncertainty by an individual requires relevant capabilities to understand situations.

From a Schumpeterian perspective, Becker and Knudsen (2017) believe that habit is the disposition of an individual to repeat well-trained actions in recurrent situations. To acquire and correct habits successively are a *raison d'être* of humans and thus habits are essential in understanding the micro-macro links between humans and institutions (Hodgson, 2004A).

Furthermore, taking into account that human actions depend on Dewey's triangle (Winter, 2013) which consists of habits, deliberations, and impulses, it would be necessary to notice the meta-capabilities needed to achieve self-command (Schelling, 1984). It is difficult to understand human nature relating to habits and self-command in terms of utilitarian satisfaction.

Moreover, in the context of the micro-macro links relevant to the relationships between individual bounded rationality and opportunism and environmental uncertainty, the governance view (e.g., Williamson 1975, 1985, 1996) not only suggests the diversity of organisations in terms of transaction cost economising that can be regarded as a type of minimisation of pain on the basis of utilitarian calculus, but also argues against the capabilities view (e.g., Conner and Prahalad, 1996) wherein opportunism is diminished in certain behavioural assumptions (Williamson, 1999). In addition, the capabilities view is surely sympathetic to the Cambridge School in the sense that it treats issues of learning, evolution, uncertainty, animal spirits, and so on (Nelson and Winter, 1982; Pitelis and Runde, 2017; Teece, 2009, 2017, 2019; Winter, 2013, 2017). It also relies on evolutionary economics *à la* Veblen who argued against utilitarianism and for the role of institutions and habits (Foss, 1998; Hodgson, 1998B; Lawson, 2002, 2015; Veblen, 1898).

4.2.3. The diversity of human nature

Finally, we should orient ourselves toward a deep understanding of the plurality of human nature without adopting utilitarianism as the only ethical standard for value judgements. In this respect, we would like to take stock of the microfoundations project mainly led by Teppo Felin and Nicolai Foss (e.g., Felin *et al.*, 2008; Felin and Foss, 2011; Foss and Lindenberg, 2013).

Let us summarise the research outcomes in a way that is coherent with our research interests. First, to go beyond the macro-macro explanations on which the organisational capabilities of a firm contribute to the establishment and sustenance of competitive advantages, with reference to the Coleman's bathtub model (Coleman, 1990), the sources of competitive advantages are explained by dividing them into three processes, starting from capabilities at the macro level, such as the macro-micro, the micro-micro, and the micro-macro.

Second, the microfoundations project develops a goal-framing theory in which the shift from hedonic goals through gain goals to normative goals is implied through a fostering of the motivations of joint production within a firm.

Third, it orients toward an integration of the governance view and the capabilities view by introducing some meaningful concepts such as dynamic transaction costs (Langlois, 1992B, Langlois and Robertson, 1995) and governance capability (Argyres *et al.*, 2012; Foss, 2014). We note that the significance of the project lies in advancing a deep understanding of the diversity of human nature needed for the revival of economics as a moral science and the achievement of IEMS.

4.3. Taking the world as it is: a solution to criticism against ergodicity

As Geoffrey Hodgson (1993) argues, micro-macro links imply the necessity for the methodology of organicism, focussing on the interactive process by which individuals construct and, simultaneously, are constructed by institutions. Both individuals and institutions need explanation. Such a methodology can offer a good base on which institutional economics can develop (e.g., Aoki, 2001, 2010; Bhaskar, 1978; Foss, 1994, 1998; Hodgson, 1998A, 2007A, B; Lawson, 1997, 2019).

In our view, Keynes can be interpreted as a supporter for the methodology of organicism (Keynes, 1972; Rotheim, 1988), focussing on micro-macro links and the complementary role of conventions in individuals' decision making (Davis, 1997; Keynes, 1936; Lawson, 1993). Marshall also can be taken as one who assumed a feedback loop from institutions to individuals through time (Hodgson, 1998A, 2003A; Marshall, 1961).

Next, we would like to consider Loasby's efforts (1976) to understand micro-macro links. According to Loasby, the concept of choice must be examined because of ignorance resulting from a combination of bounded rationality and complexity of the world. He argues that prediction of what any choice produces is impossible and there is no room for decision making if perfect knowledge and a logic of inclusive choice are assumed, as in positive economics which assumes that human matters can be reduced to problems of stimulus and response. Humans are not merely a reaction apparatus called *homunculus economicus* (Machlup, 1978).

As Keynes deliberated, human choice is important because the future involves a shadow of uncertainty, unlike what ergodicity implies. When humans make decisions in an uncertain world, it implies ignorance of the future; they cannot rely on calculated mathematical expectations, made on the basis of numerically measured probability (Keynes, 1936, 1973). For this reason, it is inevitable to rely on animal spirits supported by personal beliefs.

Loasby (1976) argues that personal beliefs are needed to create novel ideas in an uncertain future. Not knowing the future leads to ignorance and, therein, emerges the freedom to imagine and reason (Loasby, 2011; Shackle, 1972).

For humans, the future is characterised by fundamental or radical uncertainty (Dow, 2016) as Post Keynesians postulated; humans at best hold probable beliefs to deal with situations of uncertainty. Fundamental uncertainty prevents them from gaining knowledge of the future (Dow, 2015).

When humans face fundamental uncertainty, they are not completely overwhelmed by animal spirits *à la* Keynes, but rather they simplify to some degree the complex problems of decision making by accepting a decision standard, such as strategies and cultural norms provided by existing organisations (e.g., Aoki, 2010; Cyert and March, 1963; Grandori, 2013; Loasby, 2000; Nelson and Winter, 1982; Penrose, 1959; Simon, 1957). This facilitates the growth of knowledge.

We can derive the proposition that ‘all knowledge requires conventions’ (Loasby, 2000, p 21) from generalising the above. Furthermore, we substitute the term institutions for the term ‘conventions’ in the Loasby proposition. Cognitive resources, which would have been wasted if a decision problem had not been simplified, can be economised due to the constraints that institutions, such as conventions and rules, impose, and consequently part of the resources economised in this way can be allocated to non-routinised activities far from existing routines, namely the creation of novelty by way of new combinations of cognitively distant things (e.g., Gavetti, 2012; Schumpeter, 1934). To sum up, institutions emerge aggregatedly, including constitutions, laws, corporations, money, social conventions, and so on, and they can play an enabling role by economising on the cognitive resources of humans (e.g., Aoki, 2001, 2010; Deakin, 2017; Deakin *et al.*, 2017; Hindriks and Guala, 2015; Hodgson, 1997, 1998A, 2000, 2003A, B; Langlois, 1986, 1992A, 2007; Lawson, 2015, 2019; Nelson and Sampat, 2001; North, 2005; Searle, 1995, 2010).

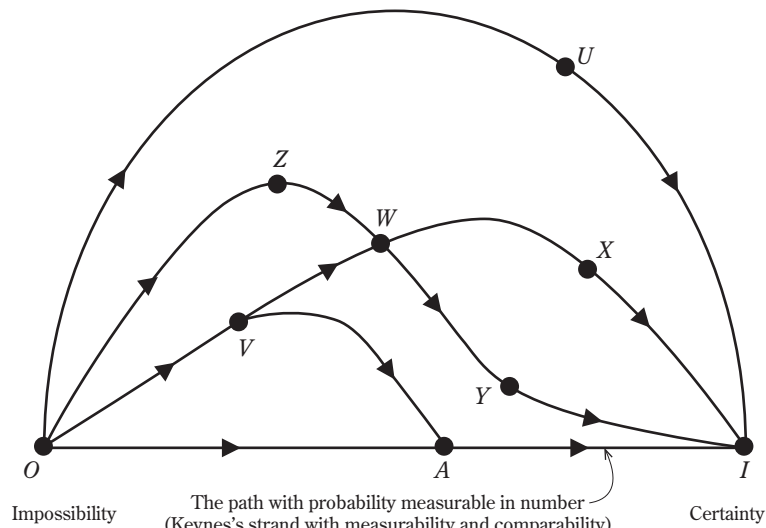
4.4. Keynes as a key for understanding the micro-macro links

When humans make decisions under uncertainty where scientific knowledge is not available, they can extend their cognitive activities by conforming with the majority’s behaviour (Keynes, 1973). In this regard, the role of institutions in enabling extended cognition beyond the brains and bodies of humans is paramount (Aoki, 2010; Clark, 1997). Even if it is impossible to calculate the probability of an event due to the lack of a scientific foundation on which Benthamite calculus relies, it might still be possible to realise rational reasoning by relying on institutions.

Our claim is that a bridge between humans and the world is possible by connecting Keynes’s famous two books, namely *A Treatise on Probability* (1921: hereafter, *A Treatise*) to *The General Theory of Employment, Interest, and Money* (1936: hereafter, *General Theory*). The idea is that Keynes occupies the centre of the micro-macro link. In this respect, recall Keynes’s pyramid, as shown in Figure 1.

Here, it is useful to mention the original ideas of Keynes in understanding the relationship between the role of institutions and human rational reasoning. Gerrard (1995) argues that it is possible to interpret Keynes as rejecting a probabilistic calculus as a means of understanding how humans act under uncertainty, and it is necessary to enquire the relationship between probability and action going back to Keynes (1921) where a logical interpretation of probability had been offered.

Originally, Keynes referred to the logical relation between evidence (assumption) and

Figure 2 Multiple Paths of Probability

Source: We owe the figure to Keynes (1921, p 42) and Sakai (2019, p 42).

proposition (conclusion) as probability. His conception of probability represents the degree of rational belief, which can be recognised by intuition. It is never subjective in nature in that it is not affected by whims (Keynes, 1921). In other words, as Gillies (2000) rightly argues, the concept of probability that Keynes proposed has the objectivity of Plato's world of abstract thinking, and it implies that every rational man has the same probability.

According to the subjective interpretation of probability, a consensus on rationality is rarely made and thus rational beliefs can differ among individuals. Therefore, it is unlikely that there is only one probability common to all people. From this point of view, Ramsey (1931) proposed rational metrics to measure the degree of belief an individual holds, casting doubt on Keynes's logical interpretation of probability as a logical relationship recognised by intuition.

Keynes (1972) indicated that Ramsey would have developed further what human logic is all about beyond the subjective interpretation of probability. We argue that Keynes accepted part of Ramsey's criticism; he deepened an understanding of human logic as a mental habit and paid attention to the role of institutions in mitigating and buffering uncertainty in the real world.

Note that, as Lawson (1985) insists, Keynes (1921) did not offer a clear definition of uncertainty. Nevertheless, we must keep in mind that the weight of argument Keynes proposed relates to uncertainty. Uncertainty represents situations in which scientific knowledge is seldom available. On the other hand, the weight of argument represents the perfectness of evidence on which probabilistic judgements are made.

Keynes (1921, p 42) attempted to map out certainty and impossibility (Figure 2). Certainty is one pole that stands on a numerically measured path, whereas impossibility is the other pole of the path. According to Sakai (2019), we can interpret multiple paths of probability as follows. Every point on the path *OAI* can be associated with a single-valued probability and any two points on the path are numerical and comparable with each other.

On the other hand, any point on the path *OVA*, *OVW*, *OZW*, *WYI*, and *WXI* might correspond to a certain interval-valued probability. And the path *OUI*, represents the most vague probability among any other path. In particular, as *U* represents the most uncertain and ambiguous point, it might be impossible to represent the point neither by a single-valued probability nor by an interval-valued probability. All the points off the path *OAI* are not quantifiable by a single value. Keynes suggested that there are some cases where a comparison between paths cannot be made. Positive economics naïvely focusses on a path known as Keynes's strand, denoted by *OAI*, in the figure; it assumes measurability and comparability, and it deals exclusively with issues of numerical risks.

As Shackle (1972) argues, it is necessary to reconsider the ways by which economics has been narrowed as a science, attempting to quantify the unquantifiable and aggregate the inconsistent. In this regard, Jochen Runde (1994) argues that the significance of non-numerical theory in a qualitative approach to probability, advocated by Keynes, must be taken seriously.

If we look at what Keynes (1973) enumerated in the context of uncertainty, such as the prospect of a European war, the price of copper and the interest rates twenty years hence, the obsolescence of a new invention, and the position of private wealth owners in the social system in 1970, it would be easy for us to understand that there are no scientific bases for a probabilistic calculus. Knight (1921) argued that there are situations in which probabilistic calculus cannot be done at all, since individual cases are distinctive and there are no similar cases; Knight believed that this applies to most human actions. Hence, it is right that Lawson (1988) puts Keynes and Knight in the category of interactionist realism which pays heed to the process of knowledge creation through interactions between theory and the real world. *A priori* reasoning can be improved through continual interactions with experiences in the real world.

We would like to illuminate an interpretation by Gillies and Ietto-Gillies (1991) of Keynes's *General Theory* linking individuals to institutions by transcending not only the diversity of individual beliefs assumed in a subjective theory of probability *à la* Ramsey but also the rational belief that objectively exists in a logical theory of probability *à la* Keynes. According to the pluralistic theory of probability (Gillies, 2000), on which the interpretation relies, probability is epistemically defined as the degree of beliefs which society and community hold in consensus, and there is a continuum of probabilities, including subjective, intersubjective, artificial, and objective.

We insist that in properly understanding micro-macro links, it would be insufficient to assume a commensurability between a subject theory and an objective theory and to integrate the two on a continuum because, from Keynes's viewpoint, there is no scientific foundation for a probabilistic calculus. As suggested in *General Theory*, humans correct their beliefs by relying on institutions and gradually come closer to rational beliefs in a process of acquiring knowledge. But, on the other hand, if we imagine multiple paths of probability suggested by Keynes in *A Treatise*, it seems reasonable to take up the issue of the discontinuity of uncertainty rather than the continuum of probability.

In this regard, it is of great use to have a close look at the important contribution of Faulkner *et al.* (2017) to a stream of research on uncertainty along the lines of Keynes-Knight-Lawson. With a particular focus on the events relative to known unknowns (e.g., a winner of the soccer match in the 2020 Tokyo Olympic Games), Faulkner *et al.* refer to a set of hypothetical values as the subjective space of possibilities (SSP), regarded as true possibilities which humans imagine consciously and list in framing a decision-making problem

when choosing a hypothetical value (e.g., Brazil, Germany, and Nigeria) alternative to the true value of the relevant event. The reason why they deal with known unknowns in this fashion is that the SSP for unknown unknowns is always empty. They link Keynes to known unknowns where calculating probability is possible by setting some hypothetical value (Faulkner *et al.*, 2017, p 1298).

Furthermore, they argue that there can be cases outside of the SSP, including the case of unimagined possibilities where humans do not imagine a hypothetical value as a true possibility and a case in which the hypothetical value as a true possibility is *consciously imagined* but is incorrectly regarded as impossible, leading to *incorrect rejection*. For us, however, it is possible to gain a deeper understanding of human nature by scrutinising these two cases. Namely, to imagine consciously has two implications. One is cognitive, where the conscious efforts made under the intent of mobilising as many cognitive resources as possible are hampered by the limits of rationality. And the other is motivational, where the conscious efforts under the same intent are deliberately failed. In addition, incorrect rejection has two implications. One is cognitive, where an individual rejects some hypothetical value imagined consciously because it is incorrectly regarded as impossible. And the other is motivational; there is some room for a hypothetical value to be rejected when an individual pretends to make mistakes.

Therefore, the view of humans in transaction cost economics (Williamson, 1975, 1985, 1996), which attempts to integrate the cognitive nature of bounded rationality and the motivational nature of opportunism, seems essential in understanding human actions outside of the SSP. In this light, it can be said that the diversity of human nature examined by the aforementioned microfoundations project, Foss and Weber (2016), and Hodgson (2004B) is of great significance.

4.5. Radical monopolies in the world

Two hundred fifty years have passed since the era of Adam Smith and humans are experiencing a digital revolution, with the development and proliferation of digital objects (Faulkner and Runde, 2019), such as PCs, mobile phones, apps, and SNS. Digitalisation has resulted in drastic changes in the world and our lives. It might be possible for an epoch-making machine to emerge as a result of digitalisation. The machine could replicate human sympathy and morality.

In fact, this relates to a kind of fundamental uncertainty which Keynes discussed. A non-ergodic world of digitalisation as an open system incessantly changes, and it does not offer foundations on which we can calculate probabilities. The only thing we can do is to act upon our beliefs. Although we face inevitable change, it is possible to believe in the stability of existing institutions, to follow an entrepreneur's new vision, and to be moved by animal spirits, such as impulses and intuitions. Above all, humans have capabilities that enable them to make judgements and decisions, to act upon these, and to connect with others with sympathy and morality.

Nevertheless, it would be unfortunate if the modes by which humans live and think are relentlessly shaken by radical monopolies (Illlich, 1973). At present, in the world where humans actually live their lives, we experience a radical monopoly by which digital objects are taken for granted, and increasingly digital objects substitute for our capabilities to think, judge, and act, thereby alienating our own 'freedom' (e.g., Sen, 1985). For instance, almost everyone uses a smart phone for chatting, depriving her/him of the freedom to speak directly to someone at an off-line meeting.

Today's economy is cemented by digital technologies, radical monopolies. In the theoretical worlds that economists socially construct, we can observe radical monopolies where the freedom to think economically is severely constrained by the fact that an ethical approach is driven out by an engineering approach based on an economic calculus of self-interest and market equilibrium.

Finally, one thing we should emphasise is that economics, as a moral science in the tradition of the Cambridge School, and institutional economics seek a wider and richer view of humans and institutions to solve issues of radical monopolies and to enhance capabilities (Deakin, 2009; Sen, 1985). Important assumptions adopted in economics need correction based on actual observations of complexity in the real world, such as cases reflecting fundamental uncertainty, such as DX (Adner *et al.*, 2019), COVID-19 (Baker *et al.*, 2020), the Fukushima nuclear disaster (Aoki and Rothwell, 2013; Labib, 2014; Taniguchi, 2022B; Taniguchi and D'Agostino, 2013A, B), and global warming (Nordhaus, 2013).

As reflected in Keynes's pyramid, we seek to gain a deeper understanding of micro-macro links the interactive process by which a world characterised by uncertainty and non-ergodicity is linked to humans with rational reasoning and animal spirits, as mediated by institutions as systems of shared beliefs. The study of man, as emphasised in the Cambridge School, should begin by accepting the world and man as they are.

5. Conclusions

Hodgson, who contributed greatly to the development of institutional economics over the years, blames the neglect of historical specificity representing the existence of the heterogeneity of systems in time and space to Keynes and his followers (e.g., Hodgson, 2001, 2019). He goes on to say:

By the close of the twentieth century, the distinctive Cambridge tradition in economics stretching from Marshall through Keynes, to Robinson and Kaldor had drastically declined in influence. Cambridge no longer regarded itself as the vanguard, and sought instead to emulate the leading neoclassical departments of economics in the United States of America. (Hodgson, 2001, p 231)

In addition, Hodgson (2012) rightly argues for a theoretical orientation toward an evolutionary moral science which underscores the essential abilities of humans, such as consideration of others and self-control over selfishness.

Leaving aside Hodgson's assessment that Keynes is to blame, we agree with his theoretical orientation. We argue against mainstream economics which narrowed the view of economics as a non-moral science based on positivism and of human beings driven by utilitarian calculus. Instead we argue for the reworking of economics as IEMS, by taking humans and institutions seriously. IEMS asks the social scientists to have cooler heads and warmer hearts.

We have attempted to clarify a series of the issues to be dealt with in IEMS. These issues are in a line of thinking established by the Cambridge School in general and Keynes's research in particular. Both cast fundamental doubt on mainstream economics with its narrow views of human beings, the larger world and the social sciences. The Cambridge School offers an intellectual platform for research on moral science as the study of man, and

Keynes led us to consider the role of beliefs and institutions in linking uncertainty and non-ergodicity of the world at the macro level to rational reasoning and animal spirits at the micro level.

We aver that striking a right balance between economics and ethics by bringing the man as she/he is back into the positivist approach of mainstream economics and by enriching the ethical approach of economics as a moral science is needed. We note that a research programme that we call IEMS is in very early stages of germination. In conclusion, we hope for a revival of the Cambridge School as a moral foundation for economics in the twenty-first century.

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