

The Unending Methodological Debates in Economics

*Soumitra Sharma**

Abstract: *Economic science, its contents, scope, and significance have been, for over a century and a half, dominated by intense methodological debates among scholars concentrating over issues of positivism, normativity, optimality, and empiricism. The debates are still going on. In this brief review, the author wishes to refresh the ongoing methodological debates that have haunted the wider field of social sciences.*

Keywords: epistemological debate; David Hume; *laissez-faire*; orthodoxy; perfect competition; positivism

JEL Classification: B41

Introduction

It is almost two centuries now that economic science has been infested by methodological debates over its scope, content, and significance. Scholars have been vigorously debating the issues of positivism, normativity, optimality and empiricism. The debates are still alive. In following pages, we shall briefly review the varying views.

*Positivism*¹ is a method of analysis that uses observation and measurement to understand the social and material world. It is the name for the scientific study of the social world. Its goal is to formulate abstract and apply universal laws on the operative dynamics of social universe. In positivism laws are tested against the collected data systematically. Positivism has never gone unchallenged particularly in sociology and anthropology, and has been a subject of intense epistemological debate. This debate continues in many different guises even in 21st century.

* Faculty of Economics and Tourism, Pula, Croatia. Corresponding Author E-Mail: soumitra-kumar.sharma@zg.t-com.hr

*Logical positivism*² arose in Philosophy in early 20th century proclaiming distinction between *facts* and *values*. In Economics it was imported in the 1930s, transforming the science and driving ethical considerations out of its core. In the 1950s *fact/value* debates arose and were discredited in philosophy.

*Normativism*³, in theory of meaning and content is the view, that those *intentional* ones, are essentially normative. As both, *normativity* and *essentiality*, to meaning and content can be interpreted in different ways, a number of the central theses of normativism have become subject of intense debates with little consensus. Basically, the debates have evolved into discussions about the normativity of rationality and question whether/or not logic sets the standards for how we ought to reason.

*Optimality*⁴ is a concept of efficiency first used in political economy by Vilfredo Pareto. A state of affairs is Pareto optimal (or efficient), if and only if, there is no alternative state that would make someone *better-off* without making anyone *worse-off*. Economists find *Pareto-optimality* to be extremely plausible as a condition that good laws, policies and allocation of resources must satisfy allocation well.

*Empiricism*⁵ is the idea that all learning comes from experience and observations only. The term is drawn from the Greek word for experience: *empeiria*. The theory attempts to explain how human beings acquire knowledge and improve their conceptual understanding of the world.

The Debates

For over one and a half century the methodological debates concerning the contents of economic sciences have preoccupied the economists all over the world.

Positivism

Positivism in Economics, today, is widely accepted and the approach is fundamental to the drive to build economics as a science. Mainstream economists see (a) *value free science* as their claimed ideal; and (b) the adoption of scientific methodology and techniques in their approach. Notable, is the fact that separation of economics from the so called *backward* disciplines like history, politics, moral philosophy, and theology, took serious deliberate efforts and a considerable time.

Positivism can well be traced back to the medieval period. David Hume is considered to be the father of positivist philosophy. Hume rejected metaphysics and pronounced both *ought* and *is* statements. The tradition began by Hume that since ethical statements do not express factual claims, thus, are not true or false (and with a loose affinity followed by Comte and Mill). Both philosophers, Comte and Mill, emphasised the empirical observations and claimed for positivism as *objectivity character-*

istic of natural science. The post-Hume *loose* type of positivism was at its zenith in the third quarter of 19th century.

The echoes of the *positivist* and *antipositivist* debate persist even today, though this conflict is hard to define. Authors writing in different epistemological perspectives do not phrase their disagreements in the same terms and rarely actually speak directly to each other. To complicate the issues further, few practising scholars explicitly state their epistemological commitments, and their epistemological position thus has to be guessed from other sources such as choice of methodology or theory. However, no perfect correspondence between these categories exists, and many scholars critiqued as *positivists* are actually postpositivists. Thus, it is better to understand this not as a debate but as two different arguments: the *antipositivist* articulation of a social meta-theory which includes a philosophical critique of scientism, and *positivist* development of a scientific research methodology for sociology with accompanying critiques of the reliability and validity of work that they see as violating such standards. Strategic positivism aims to bridge these two arguments (for detailed arguments see Bryant, 1985; Bevir, 2002; Dixon, 2008; and Feichtinger, et al, 2018).

In contemporary social science, strong accounts of positivism have long since fallen out of favour. Practitioners of positivism today acknowledge in far greater detail observer bias and structural limitations. Modern positivists generally eschew metaphysical concerns in favour of methodological debates concerning clarity, replicability, reliability and validity. This positivism is generally equated with *quantitative research* and thus carries no explicit theoretical or philosophical commitments.

Nobel laureate Amartya Sen, (1987: p. 2), traces the historical evolution of modern economics largely as an off-shoot of ethics to Aristotle's *ethics related view of motivation*, and *social achievement*. In the motivation case, how one should/should not act, is closely connected to a larger question such as *how should one live*. In this approach, *ethical considerations* do affect *actual human behaviour* (1987: p. 4). He cites Aristotle's view that achieving social ends is desirable. Social achievements refer to an evaluation of *good* which is broader and *more than ethical* than just *efficiency* (1987:4; also Aristotle, 1980: p. 1-7). In addition to ethics, Sen admits that there is a second origin of economics also, what might be called *engineering* (1987: p. 3). Ethical considerations are not to be combined in *varying proportions*. He regards Adam Smith as one of the exponents of the ethical approach to economics, and was also concerned with engineering issues as well. Sen thinks that many, mistakenly, believe Adam Smith as holding that humans are motivated exclusively by self-interest and that so guided behaviour produces efficient outcomes (1987: p. 7). Lord Robbins (1935) revived the 19th century controversy on the subject and nature of economics. Again and again the debate has been on.

This note, also considers the age old controversy in the light of Nobel Laureate Friedman's positive/normative controversy as well as the issue of moral judgements in economics. As more than over a century ago, as now economists seemed to feel

that glaring lack of consensus on fundamental principles compromised the scientific status of Economics, and here were strong professional and public pressures to establish a new orthodoxy that could speak authoritatively on economic matters.

Some 175 year ago, it was the Classical political economy that was under fire from various directions. The 19th century social reformers confronting the social problems of an industrial society were repelled by what they saw as the doctrinaire adherence to the principles of *laissez-faire*, its arid detachment from all ethical issues, and its narrow focus on mythical *homo oeconomicus*. Conservatives were uncomfortable with the stark conflicts of interest between capital and labour which the socialists were able to infer from Ricardo's theory of income distribution. Academic economists found their authority as teachers undermined, and the university students lacked confidence in the discipline of political economy. It was in 1865, when the most prestigious social scientist of his generation, John Stuart Mill (1865), publicly recanted the *wage-fund theory*, that the façade of orthodox Classical economy, cracked wide open.

In the methodological debates of 1870s and 1880s the polar extremes were represented by the historicists and mathematical school. Confidence in what critics of classical political economy called *hypothetical science* depended upon the manifest success of predictions, and when the mid-Victorian boom turned into the *Great Depression*, the introspectively based postulates of arm-chair economics lost much of its credibility.

At the other methodological extreme the abstract theorists succeeded in capturing the imagination of a rising generation of economists with the aid of an analytical tool based on calculus. The marginal techniques of analysis could be used to reconstruct the weakest link in the classical theoretical system; the *cost of production theory of value*. It was a particularly attractive development for economists who had ambitions:

Ist, to mimic the methods of natural sciences and were obviously benefitting from the mathematical tools of analysis;

IInd, because retention of the hard-core doctrine of the self-regulating system under competition implied continuity of Classical and Neo-classical economies and made it easier to believe in the cumulative advance of economic theory; and

IIIRD, because the independent application of the marginal technique in different locations in the early 1870s gave the intellectual community of economists a sense of international consensus that is rare for social scientists.

The economic historians condemned the hypothetic-deductive method of classical economists, as being hostile to empirical research, irresponsibly speculative and ideologically biased. In effect, the Classical economists were accused of devising amoral theories involving implicit presumptions in favour of *laissez-faire* stance in economic policy at a time when ethical considerations demanded a programme of legislation

to protect the underprivileged sectors of the economy. Then, as is today, ideological preconceptions concerning the appropriate agenda for government's economic policies were often the key to an economist's choice of sides in methodological debates.

This was the background against which J. Neville Keynes began his attempt to engage in the debate roughly just over a century ago. His *Scope* (1891) appeared just within half a year of Marshall's treatise (1890). Non-controversial views on scope and methods represented by Jevons (US), Cossa (Italy), Wagner (Germany), Bohm-Bawerk (Austria) and others gave the impression of an international consensus. At the heart of this consensus was the determination to re-establish scientific credentials of a discredited science by international dissensions.

This was done along three lines by:

- (a) blurring the differences in between the old and new political economy; involving recognition of different types of economic enquiry (positive, normative, regulative, and as an art),
- (b) turning away of narrow minded intolerance in methodological discussions; and
- (c) denying that the Classical assumption of perfect competition and the associated bias towards *laissez-faire* policy prescriptions were essential features of the more general, and positive kind of economic theorising that was rising on the shoulders of the old orthodoxy.

In effect, the academics who embraced the *new political economy* of the late 19th century justified their claims for the scientific status of the discipline by distinguishing an abstract deductive core of *pure economics* aimed at explaining the logic of economic behaviour in the market place without prejudice from ethical or political implications.

Acceptance of the idea that there was a central core of continuously evolving economic theory represented a victory for the theorists over historicists. The effects of this were two-fold. First, it narrowed the scope of the theoretical core of economist's research programmes; and second, it took out of the debates that characterised the said period, the passion and the points. However, it did not eliminate the issues, such as, whether pure economics should become an essentially mathematical science. This did not shake the foundations of the discipline. Indeed, the fact that leading economists like Marshall openly downgraded the role of mathematics that enabled the rank and file of economists to retain the sense of confidence in their own scientific contributions. There remained, of course, a small group of disgruntled economic historians, who did not accept the terms of consensus.

The reason, why economic historians have found it impossible to observe the truce on scope and methods, that they started the debate, with the belief that economic theory should illustrate the study of economic history, and were dismayed therefore by the gap that seemed between theoretical and applied economics. Thus, Clapham (1922) tried to confront the leading theorists on their own ground with his article,

Empty Economic Boxes, stating that the strategic concepts of economic theory were empty of relevance to the real world, and that even Marshall, Pigou, could make very little practical use of the abstract items on which the contemporary consensus rested. Pigou, in response to this, wrote a suitably crushing reply, and Clapham was firmly put down for being confused, naïve, and above all for wasting time in quarrelling about the methodological issues. Revisiting the issue F.J.U. de la Rosa (2017) contends that debate between the positivists and non-positivists currents in sociology of the late 19th and early 20th century, are actually *false*, due to the fact that, some of the basic principles of the paradigm of modernity. From this historical analysis the F.J.U. de la Rosa seeks to draw lessons for the social sciences in the present, at a time, when these seem to have reached a certain synthesis between the modern and postmodern epistemologies. Rosa shows us that such a synthesis was already prefigured in the writing of classical theorists as it is, in fact, an ineluctable structural law of science itself if it wants to escape from the trap of *skepticism* and *epistemological nihilism*.

In Britain, the pure methodological research tradition continued through the 1920s and 1930s, until John M. Keynes published his *General Theory* (1936). The central assumption of the self-regulating economy was on the fire. This time, it was not easy to water-down the methodological divisions. True, there was over a golden decade or so of superficial harmony when Keynesian macroeconomics and the neo-classical macroeconomics was compartmentalised in the post-WWII years, in Economics text-books, and among the professional economists in national governments and international agencies were given credit for continued post-war boom. When stagflation reared its ugly face, however bringing with it a nasty mixture of high unemployment and high inflation, a new crisis of confidence in the science developed. The methodological debates flared up once again.

In the 1980s, the econometricians were stuffing suitably trimmed empirical data into the new economic boxes almost as fast as the theoretical innovations appeared. If, Economics is a science, its powers of prediction and control are limited, because the phenomena it seeks to explain are subject to persistent changes and often for reasons that may lie outside the traditional boundaries of the discipline. In these circumstances successful explanations, or prediction, must depend on the economist's willingness to renew, discard, and adapt theories, concepts and analytical techniques and even to adjust the boundaries of science. What was needed was not a new orthodoxy but the readiness to listen to those opposing views.

Since 1974, the occurrence of a serious worldwide recession accompanied with increased inflation has left economics gaping. Orthodoxy had nothing to offer, and all kinds of fancy notions floated around. Again, from 2009 onwards, in view of a recession, and rising unemployment, the helplessness of Economics is being loudly echoed and the debate is afresh.

However, it is not the slump that has exposed the bankruptcy of academic teaching. The structure of thought it expounded was long proved to be hollow. It consisted

of a set of propositions that hardly bore relation to the structure and evolution of the economy they were supposed to depict.

Before the great slump of 1930s, Marshall was the dominant influence in the English speaking world. His doctrines stood for the support of *laissez-faire* as the government intervention in economic life, however well intentioned, will do more harm than good; belief in natural tendency to equilibrium in free market economy at a level of real wages consonant with full employment of the available labour force; the beneficial effects of free trade; the defence of gold standard and of sound finance. However, during the great debate that was broken off by the war in 1939, the arguments of Keynes had become orthodox in his turn. Keynes saw capitalism containing an essential flaw in its inherent stability and chronic failure to make full use of its potential resources, but he thought that his theory showed how this could be patched up, and in any case, as an economic system, it was *the best in sight*.

This was not good enough for the emerging new orthodoxy in the US economic theory was split in *macro* and *micro*. Keynes was corralled in macroeconomics, while the mainstream teaching of economics returned to *equilibrium in a free market*.

Section of economic theory that was described as *microeconomics*, is the study of prices of particular commodities and the behaviour of individual buyers and sellers. The setting in which the equilibrium of supply and demand is analysed, has no resemblance to modern capitalism. A great point is made of the freedom of consumer's choice, but little is said about the distribution of purchasing power. In the old Marshallian theory, there had been a discussion of *welfare*, and it was admitted that a given flow of production of commodities would provide *satisfaction* to the population, more equally it is distributed. Marshall himself favoured a more equitable distribution of national income. This whole question, however, was eliminated from the analysis of equilibrium model, first by passing lightly over the question of *factor endowments*; and second, by concentrating upon the choices made by consumers under *budget constraints*, when it is shown that *tastes* and *prices* determine what they buy. The suggestion was, that the choices of consumers, in aggregate, determine as to what to produce. In claiming the *consumer sovereignty*, the problem of distribution was shelved out.

In other part, i.e. *macroeconomics* the discussion was all about the instability, and how slumps could be prevented by applying Keynes's conception of demand management. The complete break between the two sections of economic theory made it impossible for students to form a coherent view of what it is all about. If there is a natural tendency of all the free market systems to equilibrium with employment, why do we need Keynes, and if, Keynes was right, why do we have to spend so much time working out the mathematics of an equilibrium system? Such doubts, however, were smothered by reducing Keynesian theory to a kind of equilibrium and swallowing it up in the *neo-classical synthesis*.

There was a serious weakness in the neo-classical synthesis to which most of the profession seems to have been oblivious. The theory of market equilibrium is essen-

tially static. It can accommodate accumulation and change by making the assumption that buyers and sellers have *correct foresight* of the future course of prices. But, a world of correct foresight is not the world in which we live. From this point, the argument takes-off into an elaboration of mathematical structures which have no point of contact with empirical reality.

Another version of the central theory derived from Marshall and propounded by J. B. Clark (1907) is often mixed up in textbooks with market equilibrium. In this case, the *factors of production* are aggregates. When fully employed, each receives a reward according to its contribution – a question muddled enough in the orthodoxy, but the mainstream teaching goes on just the same. Keynes confined himself, for most part, to strictly short-period problems. His analysis fits into a classical historical approach. Attempt to force him into the equilibrium mould has caused a great deal of confusion. By acknowledging that life is lived in time and that present is an ever-moving break, between irrevocable past and unknown future, he has shattered the basic conception of equilibrium, though he sometimes felt a nostalgic reluctance to give it up. The professional economists keep up a smoke screen of *theorems* and *laws* and *pay-offs* that prevents the question such as that asked.

An interesting and quite an unusual approach towards the methodological contents of Economics has been adopted by Muhammad Sholihin in his book, *Positivism or Normativism in Economics: An Appraisal Towards Islami Economics Methodology* (2019), where he explores the cotemporary epistemology of islamic economic schools. He notes that the mainstream islamic economists, have been applying different approaches and paradigms to analyse islamic economics. His study shows that islamic economics has *triple-paradigms* — i.e. subjectivism, positivism, and deterritorialism — that are to be understood and explained how the gap between *norm* and *fact* occur in islamic economics. These paradigms are to understand, and explain why the gap occurs in islamic economics.

Logical positivism

Logical positivism itself began in Austria and Germany in the 1920s (the leading figure being Rudolph Carnap: 1931). It claimed that only *facts* are subject to rational debates. Logical positivism was modified in the 1950s and was called *logical empiricism*. However, American philosophical school of pragmatism (founded by John Dewey: 1939) deeply influenced the thinking and Putman (2002) and Walsh (2003), who came to acknowledge that a new consensus has emerged that the two: i.e. *facts* and *values* are entangled. Though among philosophers' positivism has faded since the 1970s, but its impact remains in general public and within economics.

Logical positivism is a school of philosophy that combines empiricism with a version of idea of rationalism, that observational evidence is indispensable for the

knowledge of the world, and that our knowledge includes a component that is not derived from observation.

In the last half century the subject of *positivism* and *logical positivism* has continued to dominate the content(nal) issues of economics. Some impressive works that can be apostrophed are published by Ayer (1964), Hanfling (1981), Bryant (1985), Rescher(1985), Korsgaard (1992), Cirera (1994), Richardson et al. (2007), Gilson et al. (2012), and Stadler (2015). Some highlighted contributors in the field have been Chisolm, R. (1948), Rescher (1985), and Markie, P. (2004).

Ayer in his *Foundation of Empirical Knowledge* (1964), states that empiricism cannot provide us with the certainty of scientific knowledge in the sense that it denies the existence of objective reality, ignores the dialectical relationship of the subjective and objective contents of knowledge. There are three essential objections to empiricism. The first objection is that associative principles are not sufficiently powerful to explain human cognition. The second is that there is no means to distinguish input from other cognitive phenomena. And the third is that associative inferences can never be justified.

In his book, Cirera (1994), *Carnap and the Vienna circle: Empiricism and Logical Syntax*, studies in detail the Vienna Circle.

In his *Essay* Markie (2004), in its most general terms, analyses the dispute between rationalism and empiricism that has been taken to concern the extent to which we are dependent upon experience in our effort to gain knowledge of the external world. In the dispute between rationalism and empiricism, rationalist critiques of empiricism usually contend that the latter claims that all our ideas originate with sense experience. It is generally agreed that most rationalists claim that there are significant ways in which our concepts and knowledge are gained independently of sense experience. The distinction between rationalism and empiricism is not without problems

In their edited volume Richardson, and Uebel (2007), *The Cambridge Companion to Logical Positivism*, suggests that many people assume that the claims of scientists are objective truths. But historians, sociologists, and philosophers of science have long argued that scientific claims reflect the particular historical, cultural, and social context in which those claims were made. The nature of scientific knowledge is not absolute because it is influenced by the practice and perspective of human agents. Scientific Perspectivism argues that the acts of observing and theorizing are both perspectival, and this nature makes scientific knowledge contingent.

Normativism

Normative generally means relating to an evaluative standard. Normativity is the phenomenon in human societies of designating some actions or outcomes as good, desirable, or permissible, and others as bad, undesirable, or impermissible. A norm in

this sense means a standard for evaluating or making judgments about behavior or outcomes. Normative has specialised meanings in different academic disciplines such as philosophy, social sciences, and law. In most contexts, normative means *relating to an evaluation or value judgment*. Normative content differs from descriptive content.

Normative statements make claims about how institutions should or ought to be designed, how to value them, which things are good or bad, and which actions are right or wrong. Normative claims are usually contrasted with positive (i.e. descriptive, explanatory, or constative) claims when describing types of theories, beliefs, or propositions. Whereas positive statements are (purportedly) factual, empirical statements that attempt to describe reality.

There are several schools of thought regarding the status of normative statements and whether they can be rationally discussed or defended. Among these schools is the tradition of practical reason extending from Aristotle through Kant to Habermas, that maintains that these are merely the expressions of emotions and have no cognitive content.

Normative statements and norms, as well as their meanings, are an integral part of human life. They are fundamental for prioritising goals and organising and planning. Thought, belief, emotion, and action are the basis of much ethical and political discourse; indeed, normativity is arguably the key feature distinguishing ethical and political discourse from other discourses (such as natural science).

In social sciences, the term *normative* has broadly been taken to mean the same meaning as its usage in philosophy, but it may also relate in a sociological context, to the role of cultural *norms*; the shared values or institutions that structural functionalists regard as constitutive of the social structure and social cohesion. Normative economics deals with questions of what sort of economic policies should be pursued, in order to achieve desired (that is, valued) economic outcome.

Lately, a couple of major worth citing contributions on the issues of normativity that have attracted broader attention are those of Korsgaard (1992); Laughlin (1992); Kelson (2002; Jarvis. and Thomson (2008); Turner (2010).

In his book Korsgaard (1992), *The Sources of Normativity*, emphasises that ethical standards are normative in character. They do not merely describe a way in which we in fact regulate our conduct. They make claims on us - they command, oblige, recommend, or guide. Or at least, when we invoke them, we make claims on one another. Concepts like knowledge, beauty, and meaning, as well as virtue and justice, all have a normative dimension, for they tell us what to think, what to like, what to say, what to do, and what to be. And it is the force of these normative claims – the right of these concepts to give laws to us – that we want to understand. The quest for a demonstration that morality is in our interest . It is a call for philosophy, the examination of life. When we seek a philosophical foundation for morality we are not looking merely for an explanation of moral practices. We are asking what justifies the claims that morality makes on us.

Laughlin (1992) in his book, *Public Law an Political Theory*, studies the public law in the UK that has been hampered for many years by an inadequate appreciation among scholars and students of the importance of understanding the different political theories which underpin different models of public law. This short and highly readable work offers students a straightforward introduction to the relationship between public law and political theory and helps them to comprehend the rich literature on both subjects. Chapter 5. of the book is devoted to the foundations of normativism. The foundations of the normativist style in public law are to be found in the political ideologies of conservatism and liberalism. These are strange bedfellows. Conservatism as a form of thought is traditionalist, is primarily concerned with the issue of authority and views the individual organically, as part of a social order. Liberalism is a rationalistic theory which has little regard for the past, is primarily concerned with liberty and is constructed on the assumption of the autonomy of the individual. Despite such important differences, these two political ideologies, nevertheless, share certain affinities with respect to their visions of law and government. It is this common core of shared understanding about law and government that provides us with an insight into the normativist style in public law. In order to reveal these foundations, we must therefore examine the main tenets of conservative and liberal political thought.

Hans Kelsen's book on *Pure Theory of Law* (2002), discusses the coherence of his theory of law and how it stands and falls with his adherence to normativistic (neo-)Kantian epistemology. The book deals with legal normativism. In philosophy, normativism started with Hume's distinction between *is - and ought - propositions*. Kant distinguished practical from theoretical judgments, while resting even the latter on normativity. Following him, Lotze and the Baden neo-Kantians instrumentalised normativism to secure a sphere of knowledge which is not subject to the natural sciences. Kelsen claims that law is solely a matter of *ought* or normativity. He advocates a barely coherent naive normative realism, and supplements the realist view with a strict will-theory of norms, coupled with set-pieces from linguistic philosophy; classical normativism is more or less dismantled.

A well-known US philosopher Judith J. Jarvis in her book, *Normativity* (2008), studies the normative thought. She brings out that normative thought is not restricted to moral thought. Normative judgments divide into two sub-kinds, the evaluative and the directive; but the sub-kinds are larger than is commonly appreciated.

Turner's book, *Explaining The Normative* (2010), considers in detail a paradigm case: legal normativity as constructed by Hans Kelsen. Normativity is what gives reasons their force, makes words meaningful, and makes rules and laws binding. It is present whenever we use such terms as *correct*, *ought*, *must*, and the language of obligation, responsibility, and logical compulsion. Yet, normativists — the philosophers committed to this idea, admit that the idea of a non-causal normative realm and a body of normative objects is spooky.

Empiricism

In philosophy⁵, *empiricism* is an epistemological view which holds that true knowledge or justification comes only or primarily from sensory experience. It is one of several competing views within epistemology, along with rationalism and skepticism. Empiricism emphasises the central role of empirical evidence in the formation of ideas, rather than innate ideas or traditions. It is a fundamental part of the scientific method that all hypotheses and theories must be tested against observations of the natural world, rather than resting solely on *a priori* reasoning, intuition, or revelation.

Currently, with its unparalleled emphasis on the empirical testing of hypothesis, the demands that the standards of science imposed on Economics are of obvious moment. Accordingly, it might be expected that writings on methodology of economics would reflect upon these standards. This, however, is not the case. In so far as Economics is regarded as a science, no one, is flatly opposed to empiricism, yet, the construction of empiricism or its application to economics vary considerably and ways which significantly affect both general perspectives and the treatment of important controversial questions within the field is the idea that all learning comes from only experience and observations. The theory attempts to explain how human beings acquire knowledge and improve their conceptual understanding of the world.

F. Stadler in his book, *The Vienna Circle* (2015), offers the only comprehensive history and documentation of the Vienna Circle based on new sources with an innovative historiographical approach to the study of science. It refutes a number of widespread clichés about *neo-positivism* or *logical positivism*. The first part of the book focuses on the origins of *logical empiricism* before World War I, and the development of the *Vienna Circle*. The chapters introduce the leading philosophers of the *Schlick Circle* (e.g., Hans Hahn, Otto Neurath, Rudolf Carnap, Philipp Frank, Felix Kaufmann, Edgar Zilsel) and describe the conflicting interaction between Moritz Schlick and Otto Neurath. In addition, Karl Menger's *Mathematical Colloquium* with Kurt Gödel is presented as a parallel movement. The final chapter of this section describes the demise of the Vienna Circle and the forced exodus of scientists and intellectuals from Austria.

Procedures employed in the empirical testing of economic hypotheses were attacked by Nobel laureate Milton Friedman. His position which branded much such empirical testing as a misguided use of scientific methods has been criticised by some. Empiricism rests on an analysis of the manner in which human belief is formed. Humans, invariably, confuse dreams with realities. It is the kind of thinking that underlies science – but which in everyday life is far more common – that the empiricists take as the basis for their position on the requirements for establishing beliefs. Needless to say that although it may have uncomfortable consequences, one may persistently reject even the most compelling empirical evidence. But in so far

as the procedures employed in testing any view must be acknowledged to remain private. It, manifestly can not be argued on scientific grounds that the view is valid.

Rejecting certainty within the world of empirical relations, an empiricist concerns himself with the possible and argues that for the purpose of ascertaining this, there is ample evidence to be drawn from experience. Here the empiricist accepts the views that it is through an understanding of the past that future may be foreseen. If empirical predictions cannot be made with certainty, what is most likely to occur is a repetition of the regulations between events that have been observed. Our ability to foresee the future, thus depends upon continuing refinement and improvement in the procedure for ascertaining such regularities.

Friedman's central thesis as elaborated in his *Essays in Positive Economics* (1953), arose out of criticism of certain doctrines fundamental to orthodox economic analysis, specifically, the theory of perfect competition, and more broadly of the principles of marginalism. The criticism centred on the realism of assumptions underlying these doctrines. To rebut this attack Friedman argued that concern with assumptions represented a misdirection of effort, since, properly constructing scientific method, the validity of a theory depends solely on the accuracy of its predictions and not on the realism of its assumptions. For example, the validity of the theory of perfect competition. Friedman considered that it did not depend at all on the nature of markets in which the theory was used for predictive purposes.

As is clear, this argument totally brushes aside the rationale for empirical modes of testing in science. On the probability grounds, the belief that prediction will occur, depends on the occurrence of another event in which evidence indicates that is invariably related to the prediction. Critics argue that Friedman has ignored the essential condition in science for establishing the validity of a probability statement. Although, there may be substantial variation in the explanatory content of accepted hypotheses, evidence of association between the events related in the hypothesis is likewise essential to explanation of one of the events by the other. It manifestly cannot be said that the condition unique to a perfectly competitive market explains some given price or output in cases where the market is monopolistic. Although Friedman applied the term *explanation* to cases of this later nature, in arguing that the relation of assumptions of a theory are irrelevant to its validity. His analysis, however, disregarded the requirements for *explanation* as this term is used in science, and, commonly, outside the context of science as well.

Since the principles considered are of general applicability, they are fundamental to the empirical tradition in Economics and also far toward setting the scale for current debate over economic methodology. This does not mean that in the past the practices of economists typically have been empirical. Nor is to say that formal methodological theory in economics traditionally has taken full account of the central implication of empiricism. However, in one basic sense which is of special value here, the empirical tradition in economics has a variable lineage. The major classical econ-

omists heavily relied upon the deductions and argued that was indispensable to the development of Economics as a science. It has been asserted that various 19th century classical economists, as does Milton Friedman, who dealt extensively with methodological theory, that the realism of their premises was irrelevant to the validity of their theories. The evidence is entirely contrary. Representing the general view of the period, not a single classical economist, who dealt with methodological theory, e.g. N. Senior (1873), or J. S. Mill (1865), or J. E. Cairnes (1937) ever doubted the unrealistic as assumptions would impair the validity of their theoretical analysis.

During the 13th century Thomas Aquinas adopted into scholasticism the Aristotelian position that the senses are essential to the mind. Bonaventure (1221–1274), one of Aquinas' strongest intellectual opponents, offered some of the strongest arguments in favour of the Platonic idea of the mind. David Hume divided all of human knowledge into two categories: *relations of ideas* and *matters of fact*. According to him, all of people's *ideas*, are derived from their *impressions*. For Hume, an *impression* corresponds roughly with what we call a sensation. *Ideas* are therefore the faint copies of sensations. David Hume's empiricism led to numerous philosophical schools. Hume maintained that no knowledge, even the most basic beliefs about the natural world, can be conclusively established by reason. He, rather, maintained, that our beliefs are more a result of accumulated *habits*, developed in response to accumulated sense experiences. Among his many arguments he also added another important slant to the debate about scientific method — that of the problem of induction. Hume argued that it requires inductive reasoning to arrive at the premises for the principle of inductive reasoning, and therefore the justification for inductive reasoning is a circular argument. David Hume concluded that such things as belief in an external world and belief in the existence of the *self* were not rationally justifiable. Most of his followers have disagreed with his conclusion that belief in an external world is *rationally* unjustifiable, contending that Hume's own principles implicitly contained the rational justification for such a belief, that is, beyond being content to let the issue rest on human instinct, custom and habit.

Logical empiricism (also *logical positivism* or *neopositivism*) was an early 20th century attempt to synthesise the essential ideas of British empiricism (e.g. a strong emphasis on sensory experience as the basis for knowledge) with certain insights from mathematical logic that had been developed by Gottlob Frege and Ludwig Wittgenstein. Verificationism, the analytic–synthetic distinction, reductionism, etc.) came under sharp attack after World War II, by thinkers such as Nelson Goodman, W. V. Quine, Hilary Putnam, and Karl Popper. By the late 1960s, it had become evident to most philosophers that the movement had pretty much run its course, though its influence is still significant.

This empirical standard has been a constant source of difficulty. For the future to meet the standard has been one of the most important general ground on which the classical and neo-classical economists have been criticised. And owing to its

importance, both schools of economists have themselves given fair attention to the issue. Considering all the views, however, the positions taken have differed. Some of the classical economists have acknowledged the lack of realism in the basic premises and the subsidiary assumptions they employed for deductive purposes, and in conformity with their methodological theory stressed the need to keep these departures from realism in mind when applying the conclusions of their deductive analysis to experience.⁶

Although, the similarity recognising the pervasive importance of realism, others stressing the importance of deductions in Economics have slighted or rejected the need for repeated and careful testing of the basic premises of their analysis on the ground that experience already had established their universal truth.⁷

A quite different view, stated by L. von Mises (1963), has posited a separate deductive world of *pure theory* in which the basic assumptions of economics, although regarded as fundamental to an understanding of the real world, are held to be *a priori* and are hence alleged to be true independently of any empirical test⁸.

The requirement that assumptions be realistic has long been a heavy weight for economists to carry. In propounding his new version of empiricism, Friedman has sought to cast-off this burden once for all. In doing so he seems to have been concerned only to defend his own brand of theory. Nevertheless, his position has had a broader appeal. It stressed tests of predictions. But, pending such tests, afforded the absolute freedom for the disregard for any and all varieties of *unrealism* in theoretical model building and so appeared to provide a new and sweeping warrant for a practice which theoretical economists of many persuasions have not found uncongenial for their inclination. To many it seemed that Friedman has made a breakthrough in boldly proclaiming the irrelevance of long gnawing criticism of traditional empiricists. He had at one stroke gained for unrealistic economic theorising a measure scientific responsibility that previously had not been enjoyed. It is not a surprise that others dealing with economic methodology subsequently should have used his analysis to defend the extensive use of *theory* in empirical inquiry.

John Dewey (1939) formed a theory known as *instrumentalism*. Dewey's basic thought, in accordance with empiricism, was that reality is determined by past experience. Therefore, humans adapt their past experiences of things to perform experiments upon and test the pragmatic values of such experience.

Optimality

Since Adam Smith (1776), *optimality theory*, as a thematic guide has been a subject of interest among many economists. The debate on optimality content of *Economics* has been dominated by eminent scholars e.g. Léon Walras (1870), F. Y. Edgeworth (1881), Vilfredo Pareto (1906/9), Enrico Barone (1908), Abba P. Lerner (1934),

Harold Hotelling (1938), Oscar Lange (1942), Abram Bergson and Paul Samuelson (1947), Nobel laureate Kenneth Arrow (1951), Nobel laureate Gérard Debreu (1951), and B.C.Greenwald & Nobel laureate J. Stiglitz (1986). Three recent worth-noting contributions definitely are those of Kager (1999), McCarthy (2001), Prince and Smolensky (2004).

The concept of *optimality* is the founding stone of *welfare economics*. Welfare economics is a field of economics that applies macroeconomic techniques to evaluate the overall wellbeing (welfare) of a society. The principles of welfare economics are often used to inform public economics which focuses on the ways in which government intervention can improve social welfare. Additionally, welfare economics serves as the theoretical foundation for several instruments of public economics, such as *cost-benefit analysis*.

It is a well-known fact that the early *neoclassical approach* was developed by Sidgwick (1887), Marshall (1890), Pigou (1920), and Edgeworth (1925). They all, assumed that:

- utility is cardinal, that is, scale-measurable by observation or judgment;
- preferences are exogenously given and stable;
- additional consumption provides smaller increases in utility (diminishing marginal utility); and that
- all individuals have interpersonally commensurable utility functions.

With such assumptions, it was deemed possible to construct a *social welfare function* simply by summing all the *individual utility functions*.

Accordingly, two fundamental *welfare theorems* were developed, i.e.

- every competitive equilibrium is *Pareto optimal*; and
- any Pareto optimal allocation of resources is also a *competitive equilibrium*, emerged in this period but the ethical content was modest.

The first theorem states that in economic equilibrium, a set of complete markets, with complete information, and in perfect competition, will be *Pareto optimal* (in the sense that no further exchange would make one person *better off* without making another *worse off*). The requirements for perfect competition are that there are no externalities and each actor has perfect information, and that firms and consumers take prices as given (for no economic actor or group of actors has market power). The theorem is sometimes seen as an analytical confirmation of Adam Smith's *invisible hand* principle, namely that *competitive markets ensure an efficient allocation of resources*. However, there is no guarantee that the *Pareto optimal* market outcome is socially desirable, as there are many possible *Pareto efficient* allocations of resources differing in their desirability (e.g. one person may own everything and everyone else nothing).

The second theorem states that any *Pareto optimum* can be supported as a competitive equilibrium for some initial set of endowments. The implication is that any desired *Pareto optimal* outcome can be supported; Pareto efficiency can be achieved

with any redistribution of initial wealth. However, attempts to correct the distribution may introduce distortions, and so full optimality may not be attainable with redistribution.

Economics used to be taught at Cambridge until 1903 as part of the *Moral Science Tripos* suggesting that *Economics* and *Ethics* are closely related. 1930s marked a turning point for the ethical approach. This decline Amartya Sen takes to Lionel Robbins. Robbins (1935, p, 148) considered that *it does not seem logically possible to associate the two studies in any form but more juxtaposition*. Robbins's view soon won acceptance despite opposition at the same time and subsequently. Robbins set about the *debunking of welfare economics*, the normative branch of economics which had utilitarian foundations. The larger logical positivist goal was the eradication of utilitarianism from economics. J. Hicks (1935) and R. G. D. Allen (1938) soon provided an ordinal account of choices that revolutionised consumer theory and welfare economics. Soon welfare economics became confined to a narrow *box separated from the rest of economics*. According to Sen, *Pareto optimality* (i.e. a state in which no one's utility can be raised without reducing other's) *became the only criterion of judgement, self-seeking behaviour*.

Outside of welfare economics, human action was also assumed to be based on self-interest. Partly because of Nobel laureate Kenneth Arrow's (1951), *impossibility theorem*, and partly because of the continuation of the trends mentioned above. Sen claims that by 1970 welfare economics had virtually collapsed. He maintains that "the distancing of economics from ethics has impoverished welfare economics, and also weakened the basis of a good of descriptive and predictive economics" (1987: p. 78). Pareto efficiency or Pareto optimality is a situation where no action or allocation is available that makes one individual better off without making another worse off. A situation is called *Pareto-optimal* or *Pareto-efficient* if no change could lead to improved satisfaction for some agent without some other agent losing or, equivalently, if there is no scope for further Pareto improvement (in other words, the situation is not Pareto-dominated).

Many mainstream economists would complain that reintroducing ethics in economics would lead them to unscientific past; economics would become part of humanities rather a social science. The critique of logical positivism provided by Putman, Walsh, Myrdal, Sen and others suggests that there is something fundamentally wrong with a *value free* economics. This does not mean that one is reduced to ideology, moral platitudes or waffle. Sciences – Economics and Ethics – can be combined.

Conclusion

The author can only say and hope that debates on the nature, scope and significance shall continue for fairly long.

Declarations

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflicts of interest/Competing interests

There is no conflict of interest/Competing interests

Availability of data and material

Not applicable.

Code Availability

Not applicable.

Authors' Contributions

Not applicable.

NOTES

¹ Although the positivist approach has been a recurrent theme in the history of western economic thought, modern positivism was first articulated in the early 19th century by Auguste Comte. His school of sociological positivism holds that society, like the physical world, operates according to general laws. After Comte, positivist schools arose in other field of thought. Since the turn of 20th century, positivism has declined under criticism from antii-positivists and critical theorists.

In the early 19th century, massive advances in the natural sciences encouraged philosophers to apply scientific methods to other fields. Thinkers such as Saint-Simon, Laplace and Comte believed that the scientific method, the circular dependence of theory and observation, must replace metaphysics in the history of thought.

In Economics, practicing researchers tend to emulate the methodological assumptions of classical positivism, but only in a *de facto* fashion F. A. Hayek rejected positivism in the social sciences as hopelessly limited in comparison to evolved and divided knowledge.

² Logical positivism (later and more accurately called logical empiricism) is a school of philosophy that combines empericism, with the idea that observational evidence is indispensable for knowledge of

the world, with a version of rationalism, and the idea that our knowledge includes a component that is not derived from observation.

³ The term, “Normative”, generally refers to an evaluative standard. Normativity is the phenomenon in human societies of designating some actions or outcomes as good, desirable, or permissible, and others as bad, undesirable, or impermissible. A norm in this sense means a standard for evaluating or making judgments about behaviour or outcomes. The term, “Normative” is sometimes also used, somewhat confusingly, to mean relating to a descriptive standard: doing what is normally done or what most others are expected to do in practice. In this sense a norm is not evaluative, a basis for judging behaviour or outcomes.

Normative economics deals with questions of what sort of economic policies should be pursued, in order to achieve desired (i.e. valued) economic outcomes.

⁴ The two so called fundamental theorems of welfare economics contain the most famous application of the concept of *Pareto optimality*. The first theorem states conditions under which the allocation associated with any competitive market equilibrium is *Pareto optimal*, whereas the second theorem states the condition under which any *Pareto optimal* allocation can be achieved as a competitive market equilibrium following the lump-sum transfer of wealth.

The concept of potential *Pareto-efficiency* (also called as Kaldor-Hicks efficiency) finds wider use in economics. According to that concept a state of affairs x is inefficient if there is some alternative state of affairs y such that, in y , there is a set of possible lump-sum transfers of wealth from those who are better off under y to those who are worse off, such that, with those transfers, everyone is at least as well-off under y as under x .

⁵ In broader attention given to realism of economic assumptions, the economists mentioned make unequivocally clear that their belief that unrealistic assumptions will adversely affect the accuracy of their predictions (e.g. Mill, 1865).

⁶ Among the Classical economists, J. S. Mill (1865), and J. E. Cairnes (1937), best represent the point of view. For this reason, that both – anticipating the later positions taken by A. Marshall and others – emphasized that the conclusions of economic reasoning constituted only statement of tendencies subject to corrections for error of omission and commission in the treatment of reality in the reasoning process.

⁷ N. Senior’s comments on the basic premises of Economics are of that nature (see, his, (1873): *Political Economy*, London: Griffin, p. 3. Similar are the statements of L. Robbins: (1935, 78-92; 83-85).

⁸ L. von Mises: (1963).

⁹ Between 600 and 200 BCE, the Vaisheshika school of Hindu philosophy, founded by the ancient Indian philosopher Kanada, accepted perception and inference as the only two reliable sources of knowledge. This is enumerated in his work *Vaiśeṣika Sūtra*. The Charvaka school held similar beliefs, asserting that perception is the only reliable source of knowledge while inference obtains knowledge with uncertainty.

The earliest Western proto-empiricists were the empiric school of ancient Greek medical practitioners, founded in 330 BCE. Its members rejected the doctrines of the dogmatic school, preferring to rely on the observation of *phantasiai* (i.e., phenomena, the appearances).

Aristotle was considered to give a more important position to sense perception than Plato, and commentators in the Middle Ages summarized one of his positions as “*nihil in intellectu nisi prius fuerit in sensu*” (Latin for “nothing in the intellect without first being in the senses”).

During the Middle Ages (from the 5th to the 15th century CE) Aristotle’s theory of *tabula rasa* was developed by Islamic philosophers starting with Al Farabi (872 – c.951 CE), developing into an elaborate theory by Avicenna (c. 980 – 1037 CE) and demonstrated as a thought experiment by Ibn Tufail.

RECOMMENDED LITERATURE

- _____: (1922), 'Empty Economic Boxes: A reply', *Economic Journal*.
- _____: (2012), *Positivism* Marxists Internet Archive. Web. 23 Feb.
- Allen, R. G. D.: (1938), *Mathematical Analysis for Economists*, London: Macmillan.
- Arrow, K.: (1951), *Social Choices and Individual Values*, New York: Wiley.
- Ayer, A. J.: (1959), *Logical Positivism*, Glencoe, Ill: Free Press.
- Bergson, A.: (1938), 'A Reformation of Certain Aspects of Welfare Economics', *Quarterly Journal of Economics*, pp 310-334.
- Bohm-Bawerk, E.: (1889), *The Positive Theory of Capital*, Auburn, AL: Mises Institute.
- Bryant, Christopher G. A.: (1985), *Positivism in Social Theory and Research*, New York: St. Martin's Press.
- Cairnes, J. R.: (1937), *An Introduction to the Philosophy of Science*, London: Macmillan.
- Caldwell, B.: (2015), *Beyond Positivism*, London: Taylor and Francis.
- Carnap, R.: (1931), *The Logical Positivism*, New York: The Free Press.
- Chisholm, R.: (1948). 'The Problem of Empiricism', *The Journal of Philosophy*, Vol. 45, No. 19 (Sep. 9, 1948), pp. 512-517.
- Cirera, R.: (1994), *Carnap and the Vienna Circle: Empiricism and Logical Syntax*, Atlanta, GA: Rodopi.
- Clark, J. B.: (1907), *Essentials of Political Economy*, Auburn, AL: Mises Institute.
- Cossa, L.: (1905), *Primi elementi di scienza delle finanze*, Milano: Hoepli.
- Dewey, J.: (1939), *Theory of Valuation*, Chicago: Chicago University Press.
- Debreu, G.: (1951). 'The coefficient of resource utilization', *Econometrica*, 19 (3 pp. 273–29.
- Edgeworth, F. Y.: (1925), *Papers Relating to Political Economy*, London: Macmillan.
- Friedman, M.: (1953), *Essays in Positive Economics*, Chicago: Chicago University Press.
- Friedman, M.: (1999), *Reconsidering Logical Positivism*. Cambridge, Cambridge University Press.
- Gilson, Gregory D. and Irving W. Levinson, (eds.): (2012), *Latin American Positivism, New Historical and Philosophic Essays*, London: Lexington Books.
- Greenwald, B.C. and J. Stiglitz (1986): 'Externalities in Economies with Imperfect Information and Incomplete Markets', *The Quarterly Journal of Economics*, Vol. 101, No. 2, pp. 229-264.
- Hempel, C.: (1965), *Aspects of Scientific Explanation*, New York: Free Press.
- Hanfling, O.: (1981), *Logical Positivism*. Oxford: Blackwell.
- Hicks, J, R.: (1935), 'Annual Survey of Economic Theory: The Theory of Monopoly', *Econometrica*, 3:1-20.
- Hutchison, T.: (1964), *Positive Economics and Policy Objectives*, Cambridge, Mass.: Harvard University Press.
- Jarvis, T.: (2008), *Normativity*, Chicago, Ill.: Open Court.
- Kager, R.: (1999), *Optimality Theory*, Cambridge: Cambridge University Press.
- Kelsen, H. : (2002), *Pure Theory of Law*, Stanford University, CA.
- Keynes, J. M.: (1935), *A General Theory of Employment, Interest and Money*, London: Macmillan.
- Keynes, J. N.: (1891), *The Scope and Method of Political Economy*, London: Macmillan.
- Korsgaard, C.: (1992), *The Sources of Normativity*, (PDF): The Tanner Lectures on Human Value. Harvard Univ. Masss., 1996.
- Laughlin, M.: (1992), *Public Law an Political Theory*, Oxford: OUP.
- LeGouis, C.: (1997), *Positivism and Imagination: Scientism and Its Limits* in Hennequin, Scherer and Pisarev Vol., Bucknell University Press. London.
- Lipsey, R. G.: (1981), *An Introduction to Positive Economics*, London: Wiedenfeld and Nicolson.

- Markie, P.: (2004), 'Rationalism vs. Empiricism', in Zalta, E. (ed.), *Stanford Encyclopedia of Philosophy*, Stanford Encyclopedia of Philosophy, Eprint.
- Marshall, A.: (1890), *Principles of Economics*, London: Macmillan.
- Maxwell N.: (1998), *The Comprehensibility of the Universe: A New Conception of Science*, Oxford: Oxford University Press.
- McCarthy, J.: (2001), *A Thematic Guide to Optimality Theory*, Cambridge: Cambridge University Press.
- Mill, J. S.: (1865), *System of Logic*, London: Longmans.
- Mises, L. von: (1963), *Human Action – A Treatise on Economics*, New Haven: Yale University Press.
- Myrdal, G.: (1958), *Value in Social Theory: A Selection of Essays on Methodology*, (Ed.) by Paul Streeten, New York: Harper.
- Pigou, A. C.: (1920), *Economics of Welfare*, London: Macmillan.
- _____: (1922), 'Empty Economic Boxes: A reply', *The Economic Journal*.
- Putman, H.: (2002), *The Collapse of the Fact/Value Dichotomy & Other Essays*, Cambridge, Mass.: Harvard University Press
- Rescher, N.: (1985), *The Heritage of Logical Positivism*, Lanham, MD: University Press of America.
- Richardson, A. and T. Uebel (eds.): (2007), *The Cambridge Companion to Logical Positivism*, New York: Cambridge University Press.
- Giere, R. & A. Richardson (1996), *Origins of logical positivism, Minnesota Studies in the Philosophy of Science* (16)
- Robbins, L.: (1932), *An Essay on the Nature and Significance of Economic Science*, London: Macmillan.
- F J U de la Rosa: (2017), 'The False Debate between Positivism and Verstehen in the Origins of Sociology', *The Journal of Human Affairs*.
- Rotwein, E.: (1959), 'On the Methodology of Positive Economics', *Quarterly Journal of Economics*, 73: 552-75.
- Samuelson, P.: (1963), 'Problems of Methodology', *AER*, 53:211-19.
- Seligman, B.: (1969), 'The Impact of Positivism on Economic Thought', *History of Political Economy*, fall, I (2):236-278.
- Sen, A.: (1987), *On Ethics and Economics*, Malden, Mass.: Blackwell.
- Senior, N.: (1873), *Political Economy*, London: Griffin.
- Sidgwick, H.: (1887), *Principles of Political Economy*, Cambridge University Press.
- Stadler, F.: (2015), *The Vienna Circle: Studies in the Origins, Development and Influence of Logical Empiricism*, New York: Springer.
- Sholihin, M.: (2019), *Positivism or Normativism Economics: An Appraisal toward Islamic Economics Methodology*, Institut Agama Islam Negeri Curup.
- Thomson Judith Jarvis: (2008), *Normativity*, Amazon Books.
- Turner, S.: (2010), *Explaining The Normative*, Malden: MA.
- Walsh, V.: (1992), 'Philosophy in Economics', in Eatwell, J, et. al.: *The New Palgrave Dictionary*, Vol. 3, London: Macmillan.
- Ward, T.: (2014), *The Case for Empiricism*, Eprint.
- Wegner, D. M.: (2003), *The Illusion of Conscious Will*, The MIT Press.

