

# Embedding “Practicalism” as an Intrinsic Constituent of the Philosophy of Science: Positioning “Practicalism” as an Essential Pre-Requisite for Rapid Scientific Progress

Sujay Rao Mandavilli

**Abstract:-** We begin this paper by reviewing various standard terminologies around the English word “practical”, and its derivatives such as practicalism, and practicality. We also define the English term pragmatism, and review the chief and core tenets of the pragmatic school of thought in philosophy, and the philosophy of science, as proposed by William James, John Dewey, Immanuel Kant and others. We also examine, and evaluate the principles, dynamics, and contours of the aforesaid pragmatic school of thought and lay bare its weaknesses, the chief one being that it is not entirely free from nerdism, and does not dedicate itself entirely to the cause of society, so that these can become the springboard for the creation of a new school of thought known as ‘practicalism’. Additionally, we also review the essence of various strands of the philosophy of science in general so that several components of various schools of philosophical thought can be imbued by this new school of thought. The doctrines of positivism, logical positivism, neopositivism, postpositivism, and antipositivism are also explored to the extent they have a bearing on our paper, besides the tenets of the proposed twenty-first century school of intellectualism. We do hope that this new approach and technique will catapult science to an altogether different league. We also then proceed to show why this approach is in keeping with our general philosophy of ‘the globalization of science’.

## I. INTRODUCTION

*Be rooted. Be practical. If you are not rooted and practical, nature will kick you in the head, and you will have so many problems, that you will be forced to face reality – Master Choa Kok Sui*

*Today's practicality is often no more than the accepted form of yesterday's theory - Kenneth Lee Pike*

We begin this paper by reviewing various standard terminologies centered around the commonly and widely used English word “practical”, and its derivatives and variants such

as the terms practicalism, and practicality. We also define and explore at a fair level of detail, the English term pragmatism, and review the chief and core tenets of the pragmatic school of thought in philosophy, and the philosophy of science, as proposed by eminent thinkers such as William James, John Dewey, Immanuel Kant and indeed, several others. We also examine, and evaluate the principles, dynamics, and contours of the aforesaid pragmatic school of thought and lay bare its weaknesses, the chief one being that it is not entirely free from intellectual nerdism, and does not dedicate itself entirely to the cause of society, so that an analysis of these weaknesses can become the springboard for the creation of a new school of thought known as ‘practicalism’. Additionally, we also review the essence of various strands of the philosophy of science in general so that several components of various schools of philosophical thought can be imbued by this new school of thought. The doctrines of positivism, logical positivism, neopositivism, postpositivism, and antipositivism are also explored to the extent they have a bearing on our paper, besides the tenets of the proposed twenty-first century school of intellectualism. We do hope that this new approach and technique will catapult science to an altogether different league. We also then proceed to show why this approach is in keeping with our general philosophy of ‘the globalization of science’.

The English term “practical” is widely used in daily life, and has many practical connotations. The term “practical” means the state of being concerned with the actual performance or execution of a thought or idea to the benefit of certain groups of people or society in general, rather than being limited to abstract or nonfigurative theories and ideas. In cases where practicality is thoroughly and rigorously pursued, theories and ideas are seamlessly and flawlessly linked to practical real-world application. A practical idea is entirely feasible, and is like to succeed or be effective in real-world circumstances. The term “practicalism” which we propose to define and use here, means a dedication and devotion to practical matters. However, we propose to use it in a slightly different connotation here. Another closely related, though somewhat less commonly used term, is the term practicality

which means a concern for what is practical, or what works in the real-world. All these words taken together, are also related to the school of pragmatism in the philosophy of science; this school of thought is somewhat similar to our own, but possesses and carries with it its own set of fundamental weaknesses. Therefore, the following and the important, critical and imperative characteristics of the term “practical”, though there may indeed be several others:

- Alignment with real-world problems rather than indulging or dabbling in arcane, senseless or meaningless pursuits;
- Prioritization and time allocation according to the nature and importance of real-world problems, in such a way that more pressing and urgent problems concerning a society or culture, are given higher priority, and less crucial concerns are given less priority;
- Practical and workable solutions to real world problems are conceptualized and adopted, rather than solutions that are not really feasible or workable in the short-term and long-term;
- Alignment with cultural needs is extremely important. At the same time, alignment with cross-cultural needs and cross-cultural dialogue and collaboration is also equally important, since there are diverse cultures with diverse needs;
- Eschewing abstract and non-productive ideas, or relegating them to the background, and taking them up only when time or resources permit;
- Eschewing intellectual nerdism or intellectual nerdiness and aloofness, and a general lack of purposefulness;
- An outside in approach is carried out at all times, or as far as practically possible, as opposed to an inside out approach, so that real-world problems and real-world problems alone are a springboard for further action;
- Measuring real-world applicability or connectedness and utility of proposed and executed solutions as far as possible, through meaningful, workable, and efficient metrics ;
- An overall desire to do service to society must be at the heart of scientific activity, and constitute its fundamental driving force; social responsibility of scientists is prioritized over academic freedom. While there can be some careerism, it must as far as possible, be subservient to the doctrine and principle of service to society.
- Consequently, there must also as far as possible, very little to no hanky-panky and mischief in peer-reviews and evaluation of third party ideas. Better science may also result if all the concepts proposed by us all along, are scrupulously adhered to, and all parties are committed to the welfare and well-being of society, and to high-quality science. We therefore, also mesh this concept with “welfarism” and “contextualism”, the meanings of which should be self-explanatory.

## II. THE PHILOSOPHY OF SCIENCE

The subject of “Philosophy of science” though vast and ancient beginning from the time of the eminent Greek scholar and thinker Aristotle, is difficult to define, because philosophy is itself somewhat difficult to define. This field as the name suggests, straddles both the fields of science and philosophy, and concerns both philosophers and scientists. These two fields are mutually complementary because philosophy seeks to answer questions that science cannot answer, or does not attempt to answer, and vice versa. The philosophy of science also critically examines and evaluates the underlying philosophy behind science, and the methods, activities, and implications of science. It also examines the fundamental differences and boundaries between science, non-science, and pseudo-science, and includes in the breadth of its scope, a metascience of scientific activity. It is however, also extremely interesting to note that science had been obscured by philosophy for aeons, and emerged from the shadows of philosophy only gradually. The exact scope and breadth of the field of philosophy of science may be humungous, though somewhat ambiguous, and ill-defined. It can perhaps be settled only through intense philosophical debate, and this kind of intense philosophical debate has been slippery, and has eluded scholars and philosophers over the ages. There are a large number of unanswered questions as well, and indeed, this fact has been known since the time of the ancient Greeks. We had pondered, ruminated, and speculated on these over the last two decades or so, and over musings cover virtually the entire gamut, spectrum and breadth of scientific activity, besides some elements and aspects that have been canonically considered outside the scope of traditional scientific activity such as an examination of supernatural phenomena or the origin of life, ethics, (such as fraud, scientific misconduct or misrepresentation) aesthetics, and questions pertaining to the very meaning and purpose of life.

We also need to ponder for example, on epistemology or the science of knowledge, (including of course, the limits of knowledge) or ontology or the science of being, as many questions unanswered in these realms. The metaphysics of science is another exciting subfield of science, though its goals remain somewhat elusive. The philosophy of science also must indeed be repeatedly cross-examined from a globalized and a multicultural point of view, and not merely a western centric point of view, though modern science has largely been a product of western thought processes and western enterprise, particularly beginning from the time of the Ancient Greeks. This is in spite of the fact that the Ancient Egyptians, Mesopotamians, Chinese and Indians made giant strides in many fields of science. Western accomplishments in science also overshadowed medieval Islamic feats in science, and all other scientific feats and accomplishments by earlier non-western cultures. Though many Asian nations have emerged as strongholds in technology recently i.e. only in the past few decades, they are still relatively weak in fundamental and

theoretical science. Here, the west still rules the roost, and the appletart may not be upset anytime soon. Many if not most major philosophers of science over the centuries such as Francis Bacon, Rene Descartes, Karl Popper, Kurt Godel, Carl Hempel, Nancy Cartwright, Thomas Kuhn, and Paul Feyerabend, (they made immeasurable contributions to scientific method, and also to logic) we also from the west. We must therefore acknowledge the contributions of western scholars to science, and even scientific method.

This monocultural approach may be said to be to the detriment of some fields of the sciences, particularly the social sciences which unlike many or most other fields of scientific endeavour, are greatly dependent on cultural perspectives. Some see this as scientific imperialism, but alas, there are many dimensions to the issue. Many scientists from other cultures have not been able to pull up their socks and deliver. This may in large part be due to cultural constraints, and an absence of scientific temper in such cultures. While many western scientists, scholars and thinkers have also leaned towards mysticism, particularly eastern mysticism, (Read the works of Fritjof Capra, for example) (less commonly towards alternative medicine and other forms of esotericism) and mainstream western religions such as Christianity, these thoughts and ideals often conflict jarringly and extremely discordantly with mainstream science. How can we reconcile the two, if at all it can be done? All these questions, from our perspective and view, must be answered by philosophers of science. A lot of new areas of study will logically emerge, if multicultural perspectives are adopted, and points of view of different types of people are synchronized and merged.<sup>1 2 3 4</sup>

We also then have different scientific philosophies. Inductive research is a kind of bottom-up research technique, in which the researcher gathers and analyzes vast amounts of data collected from many situations to develop theories, concepts, or hypotheses based on patterns and observations observed in such data. Deductive reasoning or deductive inference is the exact opposite of inductive inference or inductive reasoning. In the case of deductive reasoning, valid inferences are drawn, and an inference is said to be valid if and only if, its conclusion logically follows from its premises. Abductive reasoning, which is also sometimes

known as abduction or retroduction, was proposed by the eminent Charles Sanders Pierce in the latter half of the nineteenth century, is a type of logical inference that seeks out the simplest and most likely conclusion from a given set of observations. In the philosophy of science, functionalism is the thesis that every component of a complex system has a role to play in its maintenance and its sustenance. It is also sometimes associated with minimalism. As per this philosophy, each component has a unique role to play. However, there are no redundancies. This philosophy is also widely employed and used in the social sciences, particularly in social and cultural anthropology. Structuralism is another related technique, and this may be defined as a method of scientific study which focuses on interrelationships, and often mental thought processes between elements or fields of study in system.

Coherentism is used to describe the internal and external consistency and validity of a body of work. A related theory is the “Correspondence theory of truth”, according to which the truth contained in a claim would be determined by how it corresponds to the world in general, and to other belief systems as well. The term reliabilism is related to the term reliability. This approach emphasizes the evaluation of the truth component and truth element of a belief system. The term “Positivism” is taken to mean a pragmatic attitude or a pragmatic approach towards real-world issues, and one that brims with, and is full of vibrant energy and dynamism, and a strong or a fiery and fervent need to bring about positive changes in science, and science in relation to society. Pragmatism however, is an approach that evaluates theories or beliefs in relation to their practical real-world application or utility. Empiricism in science, is an epistemological point of view according to which, true knowledge or justification comes chiefly from empirical evidence or sensory experience. According to the chief tenets of the doctrine of rationalism, reason is the chief source and the understanding of human knowledge. Skepticism is usually defined as a questioning attitude towards all opinions, ideas, thoughts and beliefs, and one that is essential for healthy scientific progress.

An overdose of skepticism is known as skeptopathy, and this is usually unhealthy. We had discussed this issue extensively in a paper published earlier this year. Rigour, accuracy and precision are also important for science. These refer to the quality of being exact and accurate. This exactness is often achieved through thorough and careful examination. There must also be a thoroughness, fairness and a sense of social justice reflected in scientific activity, particularly for the social sciences. Objectivity in scientific research takes place when no personal biases or personal opinions enter the process of research. Other important canons are systematicity, validity, verifiability, repeatability, reproducibility, measurability, falsifiability, comprehensiveness, predictability and holism. For further information, read our paper, “Advocating Output Criteria based Scientific and Research Methodologies: why the Reliability of Scientific and Research Methods Must be

1 Agassi, Joseph (2013). *The Very Idea of Modern Science: Francis Bacon and Robert Boyle*. Springer. ISBN 978-94-007-5350-1

2 Farrell, John (2006). *"6: The Science of Suspicion". Paranoia and Modernity: Cervantes to Rousseau*. Ithaca, NY: Cornell University Press. ISBN 978-0-8014-7406-4.

3 Godfrey-Smith, Peter (2003), *Theory and Reality: An Introduction the Philosophy of Science*, University of Chicago Press.

4 Kuhn, T. S. (1970). *The Structure of Scientific Revolutions*, 2nd. ed. Univ. of Chicago Press. ISBN 978-0-226-45804-5.

Measured based on Output Criteria and Attributes”, which was published by us in 2023. This aforesaid paper discusses all the aspects and attributes of good science at a fairly granular level of detail. Models of scientific inquiry have also been proposed by researchers: These describe how various lines of scientific inquiry are carried out through the use of diverse and wide-ranging methods, methodologies and techniques, and how these can be related to high quality or low quality scientific output in general. Theories and hypotheses must also be simple and parsimonious. They must be elegant and refined, tally with existing observations, and possess a high degree of explanatory power. There must also be as little cognitive bias as possible, and as few assumptions as possible. The latter is represented by Occam’s razor.<sup>5 6</sup>

### III. PRAGMATISM

The term pragmatism as it is widely used today, refers to an approach that evaluates theories, hypotheses, ideologies or beliefs chiefly and mainly in terms of the success and quantum of their practical and real world utility and application, and the difference they make to the real-world. This is chiefly understood through the pragmatic maxim, and the maxim of pragmatism, of which there are indeed some variants. In the real world, this approach and technique can also loosely translate into problem solving ability, or problem solving power, and the ability to grasp and thoroughly comprehend reality. Therefore, truth primarily corresponds to what works in the real-world. We therefore have both the pragmatic theory of truth, and the correspondence theory of truth both of which are intertwined and interrelated to each other. Pragmatism is also linked to empiricism and Cartesianism, though these concepts differ in fundamental ways, and are sometimes in opposition to one another. This idea also has many ramifications and implications in the realm of philosophical thought in the United States and elsewhere, from where it originated. From the United States, this idea spread to many other parts of the world, and other fields of study such as law, sociology, psychology, education, politics, and literary criticism.

This term is traditionally said to have originated in 1898 when it was first used by William James, a noted philosopher of the day, and a psychologist to boot. The proto-

positivist Chauncey Wright, G H Mead, and the Supreme Court Justice Oliver Wendell Holmes were also noted pragmatists of the day. Many of these thinkers formed a part of the Metaphysical club. Some other historians however, trace the term to even earlier times as it was believed to have been used by the American statistician and mathematician Charles Sanders Peirce in the 1860’s. Peirce is indeed considered by many to be the father of pragmatism, and Americans in general made stellar contributions to this field of thought. His version of pragmatism later came to be known as “pragmatism”. Another major figure in pragmatism is American philosopher and psychologist John Dewey who wrote extensively on the subject. However, the entire philosophy of pragmatism went into hibernation in the twentieth century, and the entire field was sometimes derided and ridiculed. This is in spite of the fact that the American philosophers WVO Quine, CI Lewis and Sidney Hook continued it in some form, and it would not be revived in a recognizable shape and form for several decades.

Other leading thinkers such as Ludwig Wittgenstein, Wilfrid Sellars, Karl Popper, Nelson Goodman, Rudolf Carnap, Hans Reichenbach, F.P. Ramsey, and Thomas Kuhn also endorsed pragmatism to varying degrees in the intermediary years. After its eventual resurrection later in the twentieth century, pragmatists christened the new field of study as neo-pragmatism. The “neo-pragmatist” school of thought is led by Richard Rorty, while Hilary Putnam, Robert Brandom, Nicholas Rescher, Susan Haack, Jürgen Habermas, and Cornel West also made important contributions. We believe that pragmatism does not address real world concerns adequately or sufficiently. For example, it does not adopt an outside in approach by taking real world issues and considerations as a starting point. Secondly, it does not take into account and consideration global and local-specific issues arising from different parts of the world. Thirdly, it does not rank issues or prioritize them.

We must also draw inspiration from the concept of contextualism or context dependant analysis, which already exists in the field of epistemology. It is for all these reasons, that we prefer the term practicalism over pragmatism. Our idea must also come like a breath of fresh air, and must enable scholars to begin afresh from a clean slate, and think their ideas from scratch. This is the *raison d’être* of our approach. Our approach must work in many different ways; for example, scholars and critics alike harbor old-fashioned ideas, and do not approach issues from the point of view of what good they do to society either. They are often overly cynical, and do not offer constructivism. There is still an undue air of skepticism and cynicism in the air, and this extends to the general public and the laity alike. This approach and attitude may therefore sometimes have its roots in culture. Again, social science research techniques are seldom used or applied, or at least not as often as they should be in real life. For example, we had proposed the term econoethnography representative of

5 Advocating Output Criteria based Scientific and Research Methodologies: why the Reliability of Scientific and Research Methods Must be Measured based on Output Criteria and Attributes Sujay Rao Mandavilli Institute for the Study of the Globalization of Science, IJISRT, August 2023

6 Enunciating the Core principles of Twenty-first Century Historiography: Some additional extrapolations and inferences from our studies and observations on Historiography Sujay Rao Mandavilli ELK Asia Pacific Journal of Social Science (ISSN: 2394-9392) in Volume 2, Issue 4 July to September 2016



intensive fieldwork in anthropological economics, and had also proposed that social science research techniques be used for example, to evaluate learning outcomes, and second language acquisition patterns in pedagogical studies. These are only stray and random examples; many new uses can present themselves fairly rapidly if practicalism is adopted as our new mantra, and a lodestone for various forms of intellectual activity. For example, science need not change society automatically, as we have been pontificating all along; over observations over the years will bear ample testimony to this. For all this, various fields in the social sciences must mature and change with the times. Our motto must also be “science in the service of society”, at all times. This applies particularly to the social sciences.<sup>7 8 9</sup>

#### IV. POSITIVISM

The term “Positivism” as it is widely understood today, refers to a philosophical school of thought that was developed in the early part of the nineteenth century by the French philosopher and mathematician Auguste Comte and others, (Comte first described his theory of positivism in his work “The Course in Positive Philosophy”) and that holds that all genuine knowledge is derived from a posteriori facts which are arrived at through reason and logic or through sensory experience. As per this philosophy and ideology, all other ways of knowing, such as intuition, introspection, or religious dogma and religious faith, are considered to be prima facie false and untenable. Objectivity and measurability are also of paramount importance here, and this school stands in stark contrast to other schools such as interpretivism. This school of thought has many implications; for example, according to sociological positivism, the social world, just like objects in the physical world, operates through general laws which are often discovered and built upon through the scientific and methodological process of nomothetic rule-building. He therefore proposed the law of three stages, and proposed that all societies passed through three stages, namely, theological, metaphysical, and positivist. This idea was birthed in a European context; however, we believe it has some application in an Indian setting as well. Comte’s ideas were extensively modified and adopted by many people, and positivist schools emerged in diverse fields and applications such as economics, logic, legal studies and criminology, psychology, and historiography, (historical positivism to glean the truth and nothing but the truth from original historical sources as proposed by Leopold Von Ranke and others) into which positivists attempted to introduce scientific methods.

7 Dewey, John (1900–1901), *Lectures on Ethics 1900–1901*, Donald F. Koch (ed.), Southern Illinois University Press, Carbondale and Edwardsville, IL, 1991

8 James, William (1909). *The Meaning of Truth, A Sequel to 'Pragmatism'*. New York: Longmans, Green, and Company

9 Lundin, Roger (2006). *From Nature to Experience: The American Search for Cultural Authority*. Rowman & Littlefield

Comte was also a highly practical man, and once said, "From science comes prediction; from prediction comes action". Many of Comte’s ideas were also carried forward and popularized by other thinkers such as George Eliot and Emile Littré, and translated into other languages by Harriet Martineau, and others. However, there are some limitations of positivism. One criticism is that it does not take into account intangibles and subjective elements such as culture, and relative morals and values. It is also sometimes criticized as being highly reductionist, and seeking to boil everything down to material terms. Therefore, it cannot adequately and appropriately express concepts in fields such as psychology. Later researchers attempted to remediate this short coming somewhat through the introduction of new techniques. Over the past one hundred years, positivism, has declined to some degree under strident and harsh criticism from researchers in some quarters such as antipositivists and critical theorists, for its alleged scientism, reductionism and oversimplifications, radical overgeneralizations, and severe methodological limitations. Karl Popper also criticized logical positivism. The great French thinker and intellectual Emile Durkheim who published his work “Rules of the sociological method” in 1895, extended many of Comte’s ideas in many meaningful and practical ways. He also contributed greatly to sociological theory, and sought to establish what he called ‘social facts’. Another extension of positivism is logical positivism or logical empiricism; this idea and school of thought combines positivism, empiricism, and rationalism, and arose from a group called “The first Vienna circle”, just before the First World War. This school of thought rubbished metaphysics and all forms of a priori assumptions completely. In a way, it could be said that they were arch-materialists.<sup>10 11 12</sup>

Neopositivism is another more recently established school of thought. This school of thought focuses on attempting to answer some metaphysical questions, and analyze some forms of qualitative data, albeit from a material and factual view point. It thereby seeks to combine the best of both worlds. In some fields of the social sciences, antipositivism also sometimes known as interpretivism, is a stance which states that the knowledge in the social realm cannot be analyzed and studied with the same methods of investigation utilized and employed within the natural sciences, and that methods of investigation used in the social sciences require a different epistemology. Postpositivism modifies positivism to a great degree. According to the chief tenets of postpositivism, the

10 Armenteros, Carolina. 2017. "The Counterrevolutionary Comte: Theorist of the Two Powers and Enthusiastic Medievalist." In *The Anthem Companion to Auguste Comte*, edited by Andrew Wernick, 91–116. London: Anthem

11 Annan, Noel. 1959. *The Curious Strength of Positivism in English Political Thought*. London: Oxford University Press.

12 Ardao, Arturo. 1963. "Assimilation and Transformation of Positivism in Latin America." *Journal of the History of Ideas* 24 (4):515–22.

researcher may not be absolutely or completely independent, and biases and prejudices which are often cultural, may be involved. This school argues that theories, hypotheses, background knowledge and values of the researcher can influence observations to a fair degree. We had also proposed an approach known as “Intellectualism by objectives” to prevent fossilization and regimentation of thought, and had argued that this approach should be one of the primary approaches to drive intellectualism in the twenty-first century and beyond. According to the proposed tenets and postulates of “Intellectualism by objectives”, practical problems would be the starting point and the springboard to all creative thought. Therefore, all intellectualism should revolve around real world concerns and considerations. All these ideas merge with the core concepts proposed in this papers, and logically so.

## V. CONCLUSION

We had begun this paper by reviewing various standard terminologies revolving around the commonly used and fairly mundane English word “practical”, and its variants such as practicalism, and practicality. We had also then defined the fairly common English term pragmatism, and had reviewed the chief and essential tenets and principles of the pragmatic school of thought in philosophy, and the philosophy of science, as proposed by William James, John Dewey, Immanuel Kant and other great thinkers. We had also examined, evaluated, and laid threadbare, the principles, concepts, dynamics, and contours of the aforesaid pragmatic school of thought, and had laid bare its weaknesses as well, the chief and principal one being that it is not entirely free from intellectual nerdism or intellectual nerdiness, and does not dedicate itself solely and entirely to the cause of society, so that these could become the springboard for the creation of a new school of thought known as ‘practicalism’, the postulates and tenets of which we had summarized. Additionally, we had also reviewed the essence of various strands of the philosophy of science in general, so that several components of various schools of philosophical thought could be imbued by this new school of thought. The doctrines of positivism, logical positivism, neopositivism, postpositivism, and antipositivism were also explored to the extent they had a bearing on our paper, besides the tenets of the twenty-first century school of intellectualism we had proposed last year. We do hope that this new approach and technique will catapult science to an altogether different league, and throw science and much of scientific activity and endeavour to the service of society. We had also showed why this approach is in keeping with our general philosophy of ‘the globalization of science’, and would as always, lead to ‘scientific progress at the speed of light’.