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Positivism and Knowledge Inquiry: From Scientific Method to Media and Communication Research

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Abstract: *All forms of research seek to understand and interpret phenomena. However, knowledge-inquiry is almost always discipline-specific. The Social Sciences strive to understand and interpret phenomenon through an empirical, rational and objective methodology which facilitates the presentation of "facts", facts that play a contributory role towards knowledge. First propounded by the 19th Century, French sociologist and philosopher, Auguste Comte, Positivism recognizes scientific knowledge as authentic as it results from positive affirmation of existing theories through the scientific method. The traditional approach in positivism (as propounded by Comte, Spencer, and Durkheim) thus identifies a close relationship between the social sciences and the natural sciences. Consequently, this paper attempts to highlight the close relationship between philosophy, the scientific method (a popular approach in research in the natural and social sciences) and research methodologies in media and communication studies and thus endorses its place in the social sciences as against humanities. Leveraging on extant literature, this paper defends the placement of media and communication studies in the social sciences, even though it retains a strong relationship with the humanities. It further highlights the centrality of positivism as a school of philosophy in knowledge inquiry in the social sciences with particular reference to media and communications research.*

KEYWORDS: *Media and Communication; Positivism; Research Methods; Scientific method; Social Sciences*

INTRODUCTION

Within the different disciplines co-existing in the academia today, the social sciences remain a critical component. The social sciences seek to understand the society and are concerned with the relationships inherent among the people within societies. This area of study comprises diverse but allied disciplines - political science, communication studies, economics and sociology among others and in some cases, incorporates some key disciplines with origins in the Humanities like anthropology, history, languages and linguistics. The emergence of the social sciences can be traced back to the "Age of Enlightenment" from 1650 AD. This was triggered by a revolution within natural philosophy which changed the fundamental framework in the definition of the term scientific. The moral philosophy of the seventeenth century contributed immensely to the emergence of the social sciences, an occurrence that was influenced by the industrial revolution. The development of the social sciences was facilitated by systematic knowledge-bases and conventional practices relating to the enhancement of the social life of interacting entities (Peck, et al., 1897). As a branch of study, social science was recognised as a distinct conceptual field in the 18th century. According to Bhattacherjee (2012), social science is interested in people or groups in relation to their individual or shared behaviour. This field of study is entrenched within the scientific framework, based on critical review of ontological principles that can be traced back to Aristotelian Materialism and the Cartesian Dualism.

The growth, development, and popularity of the social sciences were greatly influenced by Positivism, which emphasises knowledge and favourable sensory experiences while shunning the negatives. Positivism is a prominent school of thought embedded in the social sciences and utilises methods akin to those inherent in the Natural sciences as a tool for a deeper understanding of the society and thus, distinguish science strictly from a modern perspective. Interpretivism, another view, leverage on social critique or symbolic interpretation instead of relying on empirically tested theories. Thus, interpretivism looks at science from a broader perspective.

Science uses the tools of empirical deduction and reasonable induction, leveraging on objectivity, with formally accepted standardised styles of texts and categories (Frey, 2012). By applying such legitimising tests as reliability and external/internal validity, science aims to replicate phenomena and engender new knowledge through analysis, to explain human behaviour. As an extension of the natural sciences, social science research emphasises empirical methods that seek to explain causality of events (Frey, 2012). According to Frey (2012), this approach can be expressed in either of two ways. First, as a quantitative design, which addresses social phenomena via measurable variables and substantiation which often relys on empirical analysis to produce valid and reliable claims. Secondly, it can also be expressed in a qualitative design, which emphasizes the understanding of social phenomena via textual and contextual analysis, participant and non-participant observation, and subjective exactitude over generality. The critical question which this paper seeks to address is that given the academic location of media and communication studies in the social sciences in our time, what relevance does the study of philosophy have for research in media and communication?

THE PLACE OF MEDIA AND COMMUNICATION IN THE SOCIAL SCIENCES

Media and Communication studies, as an academic discipline seek to evaluate the influence of media in understanding the dynamism within the societal framework by focusing on the methods used in constructing messages about individuals, groups, and cultures. It also examines how communication is generated, managed and disseminated. Media studies deal with the meaning, etymology and consequence of various media with particular focus on the mass media. Such studies usually leverage on traditions from both the social sciences and the humanities, but mostly from its core disciplines of mass communication, communication, communication sciences, and communication studies (Webster, 1995).

It is also standard practice within the field for researchers to develop and utilize theories and research methodologies from allied disciplines of cultural studies, political science, philosophy, psychology, economics, literary studies, anthropology, and sociology (Dayan & Katz, 1992). Though at home in the social sciences, media and communications draw a lot from languages, linguistics, and cultural studies – fields inherent in the humanities.

HISTORY OF SCIENTIFIC THOUGHT

Although there existed documented references to advancements in science for ages, the term science and its method have its origin in the 19th century. Before this period, science was perceived as a critical component of Philosophy since knowledge was linked to theological laws based on beliefs. This position was contested by the early Greek philosophers who felt that a better way to achieve a more accurate comprehension of the nature of being and the universe is rationalism, defined as a methodical and analytical process. Rationalist believes that "reason" is the root of knowledge and claims that truth is directly linked to intellectual and deductive reasoning emanating from a set of accepted standards.

The 16th century witnessed a new development in scientific thought with the suggestion of the British philosopher, Francis Bacon, that knowledge is a product of realistic observation of the world. Consequently,

Bacon emphasised that the process of acquiring knowledge is indirectly related to empiricism, a school of thought that became a significant branch of philosophy. This popularised inductive reasoning as a fundamental element in scientific studies and led to the scientific method, known at that time as the "Baconian method". Thus, the scientific method was characterised by carrying out observation, measuring the results and experimenting with variables. It is believed that the progress made in this area might have led to atheism. The middle ages were characterised by conflicts between the schools of empiricism and rationalism driven by the need to arrive at the most efficient method of knowledge acquisition. Scientists like Galileo and Newton sought to merge the two approaches into what they termed "natural philosophy" which aims at a better understanding of nature and the physical world. This line of thought heralded what we know today as the natural sciences.

In his book, Critique of Reason, the German philosopher, Immanuel Kant sought for a point of convergence between rationalism and empiricism by highlighting the subjective nature of experiences. Kant believed that it is wise to understand the subjective nature of experiences before analysis based on pure reason. His idea gave rise to idealism, a philosophical school of thought that later led to the development of diverse methods of interpreting phenomena such as hermeneutics and phenomenology. Within this same period, another attempt to blend the two scientific approaches of rationalism and empiricism was made by the French philosopher, Auguste Comte (1798-1857). His efforts led to a new philosophical school called Positivism. Comte suggested that the relationship between theory and observations are cyclical as one depends on the other. He posited that though theories are a product of sound reasoning, they can only be authenticated through observation. This process of verification of theories resulted in the separation of philosophy from modern sciences and consequently made the "scientific method" a critical approach in authenticating scientist claims.

In the first part of the 20th century, scientific thought witnessed another paradigm with the rejection of positivism by some philosophers within the idealist school. This rejection was driven by equating positivism with quantitative research methods without recourse to philosophical underpinnings and the belief that qualitative methods can be useful in scientific inquiry. These two views were further challenged by those who suggested that knowledge ought not to be based on cast iron foundation, but rather on suppositions whose proof are not definitive, but rather, can be disproven. This school of thought is called "post-positivism". Postpositivism holds that it is impossible to validate truths, though, false beliefs can be rejected.

THE SOCIAL SCIENCES: ONTOLOGIES AND EPISTEMOLOGIES

Different approaches in the social sciences are contrasted based on their ontological, epistemological and methodological foundations (Corbetta, 2003). Ontologically, the question is what we study or the object of inquiry. How does the world fit together and how can humans understand this fit? For example, is the classification of species a natural phenomenon or a product of scientific experimentation? For the nominalist, this classification is a product of human creation; for the realist, they are inherent in nature waiting for discovery. In the social sciences, there are much wider differences about the degree to which the world of social phenomena is real and objective, endowed with an autonomous existence outside the human mind and independent of the interpretation by the subject (Corbetta, 2003). For some researchers, the only object that qualifies as real is the human person. Every other object remains an artefact. This concept is referred to as 'methodological individualism'. Others use broader classification such as social status, race, gender, and age and thus provoke conflict on the extent to which these are real objective distinction, the outcome of human categorization, or just mere concepts (della Porta & Keating, 2008).

Epistemology refers to the process of knowing and addressing key questions on the nature, sources, and limits of knowledge (Klein, 2005). Knowledge here relates to that which has the potential to convince others. This is different from a belief system. In the social sciences, while a segment demands objective evidence as seen in the natural sciences, others claim that the existence of knowledge in other forms is possible. For instance, the anthropologist view is that myths and beliefs constitute valid data even though its lack of verifiability makes it unacceptable to positivist. Less radical is the view of some social scientist that myths and beliefs are critical

factors in the quest for understanding social behaviour irrespective of their truthfulness or falsity. Of course, "social science itself can be charged with existing on myths, for example, the myth of rationalised institutions that – according to the neo-institutional analysis of organisations – dominates in modern societies" (Meyer & Rowan, 1983, p. 27).

The traditional approach in *positivism* (as propounded by Comte, Spencer, and Durkheim) identifies a close relationship between the social sciences and other sciences. This is because the world exists independent of the observer whose duty is to describe and analyse the practical nature of the world. This facilitates neutrality and removes the observed from the influence of the observer. According to Emil Durkheim (1982: 159), "Since the law of causality has been verified in other domains of nature and has progressively extended its authority from the physical and chemical world to the biological world, and from the latter to the psychological world, one may justifiably grant that it applies likewise to the social world".

These assumptions are not strictly adhered to especially in neo-positivism and post-positivism. "Reality", is still difficult to verify even though it is still considered as objective. The positivist trust in causal knowledge is modified by the admission that some phenomena are not governed by causal laws but, at best, by probabilistic ones (della Porta & Keating, 2008). Though this might seem as being at variance with the tenets of natural sciences, it still follows contemporary scientific progression (Delanty, 1999). Epistemology of the 'Critical realist' posits that the material world is real but that social conditioning impacts significantly on our knowledge of this reality and thus is always criticised and reinterpreted. Though some aspects of human endeavour are difficult to observe, it is foolhardy to discountenance them. This view is valid even in the natural sciences where theories are formed before understanding the causal factors. Similar ideas are found in constructivism. According to Hacking (1999), "social constructionist claims that taxonomy is not determined by the way the world is but rather by the convenient way we present it". What is important here is that knowledge is garnered through theories utilised by the individual researcher. The effect here is that ontology and epistemology graduate into interpretivism - where objectivity and subjectivity are interwoven. Interpretivists highlight the limitations of mechanical laws while stressing human choice. Since people are significant actors in the society, effort must be made to discover the meanings that drive their actions and behaviour rather than wholly depending on universal laws external to human beings.

SOCIAL SCIENCE RESEARCH METHODOLOGY (SCIENTIFIC METHOD)

As mentioned in previous sections, scientific method refers to a laid down set of approaches used by researchers in their quest to build and add to scientific knowledge. This includes the procedures for making valid observations, interpretation of results and analysis and generalizability of such results. The scientific method facilitates the testing of pre-existing theories and findings and subjects them to critical analysis, modification, and enhancement. For a method to be termed scientific, it must fulfil four basic requirements:

Replicability: The assumption here is that if other researchers were to carry out the same study, they should be able to obtain similar, if not identical results. This is what is referred to as replicability.

Precision: Though theoretical generalisation is often difficult to measure, efforts ought to be made to define these concepts with precision in such a way as to make it useful to others in measuring such concepts and scientific test theories.

Falsifiability: Every scientific principle must be presented such that it can be criticised and disproven. When this feature is absent, then such cannot be referred to as a scientific theory and the knowledge therein is not scientific. In stating theories, care must be taken to ensure it is done in such a way as to facilitate criticism. Theories cannot be scientific if they cannot be tested, validated or falsified. When theories are stated in sweeping forms in conjunction with concepts that cannot be measured and tested accurately, the resultant

knowledge cannot be referred to as scientific. A good example is Freud's idea on psychoanalysis which though difficult to test, have been found useful in certain types of ailment.

Parsimony: This is a process where the simplest and most economical explanation is accepted from multiple explanations of phenomena. It prevents the overt pursuit of complex, complicated and eccentric theories with different concepts and interconnections that describe so much without specificity.

Any branch of inquiry that does not allow the scientific method to test its basic laws or theories cannot be called "science." (Bhattacherjee, 2012). Within this category exist disciplines like arts, literature, theology, humanities, and law. For example, theological positions about the omnipotence of God cannot be termed as science because it cannot be tested using a precise, falsifiable, replicable and parsimonious method. The scientific method incorporates a wide array of approaches, techniques, and tools such as case studies, field surveys, experiments, statistical analysis and other forms of quantitative and qualitative data collection.

POSITIVISM: A CRITICAL PARADIGM IN SCIENTIFIC METHOD

Positivism is a major paradigm in philosophical inquiry. According to "Positivist", social phenomena should be studied using the scientific method with emphasis on empiricism. This approach to philosophy was developed in the 19th century by Auguste Comte, a French philosopher who believed that reality could be observed. Also called the scientific paradigm, positivism maintains that the purpose of research is to prove or disprove a hypothesis using the scientific method, statistical analysis and generalizability of results. Comte's position is that for knowledge to be termed authentic, it must be scientific and thus must emerge strictly from positive affirmation of theories through the gathering of observable, empirical and measurable data which is subjected to specific principles of reasoning. Comte's position gave rise to the universal dogma of "positivism" which presents all knowledge as a consequence of sensory experience which can only be refined by observation and experiment (Cohen, et al., 2007). Collins (2010), noted that positivism as a branch of philosophy is in line with empiricism which holds that knowledge is derived from individual experiences. He went further to state that positivism sees the world as being made up of distinct, observable components and occurrences that relate in such a way as to enable observation in a consistent manner (Collins, 2010).

Epistemologically, the term "positive" indicates an objective approach to understanding humanity while employing methods inherent in the natural sciences. Comte perceived the scientific method as a replacement for Metaphysics and propounded the law of three stages which saw society as going through three distinct stages in search for truth. These steps are the theological, metaphysical, and the positive. Positivism is grounded on five basic principles:

- The intellection inherent in scientific inquiry is the same whether in the social or natural sciences.
- The overarching objective is mainly to define, forecast and thus, learn the relevant and qualifying conditions for natural phenomenon.
- Scientific research must be observable through the sensory organs with results stated using inductive reasoning with the possibility of being tested for validity.
- Since science differs from common sense, care must be taken in addressing issues of subjectivity and in analysing results.
- The ultimate objective of scientific inquiry is knowledge. Hence, it should be judged by logic and should have no value judgments.

Positivism still maintains its foundationalist ontology - defined as the existence of the world independent of our knowledge of it - even though its meaning has evolved over the centuries. The change from conjectural metaphysics witnessed during this period gave rise to a body of knowledge based strongly on that which is "posited" and can expose the actual nature of the world. This is arrived at through the study of the "given" and

not via notional reasoning. One upside of Positivism is that it can be applied to methods of inquiry in the social sciences with as much success as in the natural sciences.

In studies leveraged on Positivism, the researcher focuses on data collection and interpretation based on objectivity. The results are always observable and quantifiable. As a general rule, studies that employ a positivist approach adopt a deductive approach. A core assumption in Positivism is that if a study is carried out with the minimal interrelationship between the researcher and the researched, the result will be purely grounded in objectivity. A major advantage of positivism is that it facilitates fast and speedy execution of research over a wide range of situations.

CENTRALITY OF POSITIVISM IN MEDIA AND COMMUNICATION STUDIES

Stace (1944) published a critique of positivism titled, *"Positivist Principle"*, which explains the essence of positivism:

A set of words purporting to express a factual proposition P is significant only if it is possible to deduce or infer from it, in combination if necessary with other premises, some proposition or propositions (Q1, Q2, Q3 …, and so on), the truth or falsity of which it would be logically possible to verify by direct observation. If no such direct deductions are possible, then the set of words purporting to express P is non-significant, and P is not a proposition at all (Stace, 1944, p. 215).

What is evident in this statement is the use of validation through direct observation. This functioned to liberate positivism from the postulations of theology and metaphysics. Later in his works, Stace developed the *Principle of observable kinds* and explained the difficulty of carrying out comprehensive verification under the 'Principle of Verifiability' as proposed by the Vienna Circle. This is mainly because of the perceived difficulty in carrying out direct verifications of past events and statements as observing the past is virtually impractical. Again, if comprehensive verification is of the essence, then it will be impossible to verify all universal statements. The effect is that partial or indirect verification came to be accepted. Verification is done in relation to generally accepted laws or doctrines, and these depend on data. This was precisely the recommendations of Auguste Comte in his "System of positive philosophy" as analysed by Turner (Turner, 1985). Turner strongly criticised modern scholars who present Comte as eccentric and his positivism as naïve. According to Turner, this set of scholars rarely theorises - a factor that has resulted in limited knowledge of the world as they have failed to view positivism as Comte did.

Positivism is a dominant approach to research in the social sciences as it combines the use of scientific method and languages in investigating human experience and social phenomenon. This approach is supposed to reduce subjectivism on the part of the researcher. In line with common practice in the social sciences, concerning media and communications, positivism aims at arriving at a complete understanding of phenomenon based on observations and experiments. This is because knowledge is seen as the product of experience interpreted using the method of rational deduction. The positivist assumptions on research have two implications. The first is that if carried out properly, the process will be similar to those of the natural sciences and provide clear perspectives on the causality of diverse social phenomena. In some cases, it is predictive in nature and can be instrumental in controlling events. Secondly, the perception that scientific model is the only model of research might result in the dismissal of research as a means of comprehending complex nature of social life. This is because the scientific approach is seen as not adequate in the context of understanding human life and their world-view.

The scientific approach to research methodology in media and communication draws heavily on the positivist approach. Critical tools in this approach are observations, measurements, and experiments – three popular research methodology inherent in contemporary studies in media studies. In some cases, these are used together in the process of triangulation. The choice of triangulation can be attributed to the hybrid nature of the discipline of media and communication which draws from the sciences and the humanities. In quantitative studies in media and communication, the norm is to state a hypothesis and attempt to either prove or disprove it using data which is analysed using statistical methods. This choice can be traced back to the views of positivist.

For a better understanding of the applicability of positivism in modern studies in media and communication, the next few paragraphs will be dedicated to highlighting the key characteristics of observations, measurements, and experiments as propounded by positivist and currently deployed by researchers in media and communication. Observation is a correlational type of research which is instrumental in longitudinal studies where it is important to observe the subject of study over a prolonged period. This approach is popular among social scientist and involves the direct observation of phenomena in a natural setting. The natural setting differentiates it from experiments where the quasi-artificial environment is used to control extraneous factors. Observation can be divided into three broad categories: controlled, naturalistic and participant observation. Controlled observations are popular in psychology. The researcher chooses the location, the time, the participants and the circumstances. In naturalistic observation, the focus is the study of the spontaneous behaviour of participants in their natural environment. Data on what is observed is recorded by the researcher. This category of observation is popular among ethnographers and have been useful in the study of diverse societies and tribes in Africa and South Pacific islands. Participant observation is a variation of the naturalistic observation. The major difference is that the researcher joins the group being observed with the aim of acquiring deeper insight on the target group. This approach was used by Leon Festinger in his study of a cult group who believed the world was about to end and observed their reaction when the prophecy failed (McLeod, 2015).

All quantitative research incorporates some measurement. Measurement logically follows the observation and recording of data and is a critical component of the research process. It is the process of assigning letters, symbols, and numbers to empirical data from each research variable based on laid down procedures. This is because it is hard to measure concepts directly hence the option of measuring indicators of concepts. Measurement scales range from nominal, ordinal, interval and ratio. Quantitative studies are usually characterised by measurements at variance from qualitative that depends more on narratives.

Experiments in social science research is a design that uses manipulation and controlled testing to comprehend causality. It usually involves manipulating one variable to determine the effect on another variable usually the depended variable. Any change observed is recorded and measured thereby creating a link between observation, measurement, and experiments in line with the tenets of positivism. Experiments are critical in predicting phenomena and is designed in such a way as to explain causation.

CONCLUSION

As mentioned earlier, positivism maintains that the purpose of research is to prove or disprove a hypothesis using the scientific method, statistical analysis and generalizability of results. Positivism recognises scientific knowledge as authentic as it results from positive affirmation of existing theories through the scientific method. Comte's position is that for knowledge to be termed authentic, it must be scientific and thus must emerge strictly from positive affirmation of theories through the gathering of observable, empirical and measurable data which is subjected to specific principles of reasoning. This view is in line with current research practices in the discipline of media and communication where societal phenomenon is identified, observed, measured and analysed using statistical methods. This approach emphasises the importance of positivism as a school of

philosophy in knowledge inquiry in the social sciences with particular reference to the field of media and communications.

The placement of media and communication studies in the social sciences even when it retains a significant relationship with humanities is thus defended as this paper highlights the close relationship between philosophy, the scientific method and research methodologies in media and communication studies. This placement of media and communication studies in the social sciences as against the humanities can, therefore, be attributed to this fact. Finally, this paper brings to the fore the centrality of positivism as a school of philosophy in knowledge inquiry in the social sciences with particular reference to media and communications research.

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