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The Use of Empiricism, Rationalism and Positivism in Library and Information Science Research

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Abstract

This paper aims to study the significance/importance of “empiricism”, “rationalism” and “positivism” and their application in library and information science (LIS) research. The objectives of this paper covered in two parts. Part one describes the historical development of these epistemologies, explore its main characteristics and presents the criticism that has been nurtured against these views. In the second part, the importance and use of these epistemologies in the context of LIS research have been discussed. Since philosophy is the least touched subject in LIS, therefore, limited literature is available to review these epistemologies from the perspective of LIS.

Empiricism, rationalism and positivism have several differences in approaches, applies the scientific method of inquiry that should be used in natural as well as social science research. The philosophical foundations need to be applied in LIS research studies for better understanding the research phenomena. Empiricism, rationalism and positivism are applied to LIS research unconsciously or implicitly, while limited research work available about applications of these theories in LIS. This paper can motivate LIS professionals to dig deeply into these areas for better understanding, devising solutions and advancement of the profession.

Keywords: Philosophy, Empiricism, Rationalism, Positivism. LIS research.

Introduction

Philosophy deals with finding the basis for action. According to Moore and Bruder (2014), “philosophy is the challenging of fixed beliefs, by employing careful thinking and logic” (p. 4). The purpose of philosophy is to guide us in the process of thinking, finding answers of why we do and or what we do. Philosophy has many branches, but this paper discussed only Empiricism, Rationalism and Positivism. These are epistemological theories focusing on finding a way to discover an authentic source of knowledge. The term "empiricism" is commonly used to describe a theory that seeks to base human knowledge and research on experience, as opposed to intuitive or non-experimental (a preferred) knowledge. Empiricism may be as old as philosophy itself, but it did not develop in philosophy before the 17th century, except for a short time during the time of the early Greek Sophists (Hossain, 2014). LIS certainly could benefit from these philosophical discussions, which will be very useful for practicing librarians, library users and researchers. It is a consideration of the philosophers that these discussions guide the professionals about day to day practices of library practitioners, users and researchers. Positivism approach is also found in the everyday practice of librarians and library professionals (Radford & Budd, 1997).

Empiricism

Empiricism is a branch of philosophy that holds that truth and correct conclusions can only be reached through experimentation and from our sensory experience. As Hjørland states “empiricism is the view that experiences, observations or sense data are the only or the most important way of acquiring knowledge” (2005, p. 130). According to Alston (1998), experience as consciousness in which something is offered to the subject, the empirical theory holds that the meaning of words and our concepts are derivatives of experience. Such experience can have a variety of modes; sensory, ethical, religious, aesthetic, but the focus of empiricists is usually on sensory experience i.e. the experience which is gained by using five senses. All knowledge isn't always directly related to experience. Hence, this empiricism assumes that knowledge has levels, the low-level issues directly from experience and the higher levels are based on these low levels. Empiricism denies a priori i.e. Empiricism rejects the ideas of universal truths; empiricism rejects that knowledge can be obtained regardless of past, present and future; empiricism rejects that there is an instinct, innate or inborn knowledge. Empiricism can have many versions. This difference is because of the basis it relies on. For example, a public version suggests that all beliefs which we perceive in the physical environment are directly related to experience. But the phenomenology approach refers that only one's sensory beliefs are based on experience, but the conceptual beliefs rely on the former type of experiences. The basic problem for global empiricism is that it depends on the type of knowledge, it refers to, like mathematical knowledge. Locke, Berkeley and Hume are the renowned empiricists.

The philosophy of sentimentality was first introduced in an article by John Locke on the understanding of a human subject. Locke argued that the only way for man to acquire knowledge is through experience. Locke strongly argued that man is incapable of formulating or possessing internal ideas. Locke saw the human brain as an "empty slate" (or "white paper" as soon as he saw the appropriate reference to the media of his time), which was gradually compiled by sensor experimentation. According to Locke, this denial of natural knowledge meant that individuals were free to "create" the material in their minds (Hossain, 2014). According to Locke, the most basic components of the experiment are found in the observation of external objects. They divided these experimental data into basic features - the essential characters (its molecular structure, for

example), regardless of any observation - and secondary features, which in practice are sensory impressions. Were synonymous with what is created in emotional beings (color, taste, smell, and so on) (Hossain, 2014).

Criticisms on Empiricism

Alston (1998) pointed out two categories of criticisms to empiricism. The first objection is that empiricism can't accommodate all types of knowledge. For example, logic and mathematics are two stable fields of knowledge, but these fields lack empirical bases. We don't need sensory bases to prove that $2 + 2 = 4$. The second objection is that even the home field knowledge of empiricists based on non-empirical bases. The example is the method of induction. If we examine 500 samples of copper and found that all samples are ductile. We can't be sure about the next 500 samples. Hence, we can't generalize that copper is ductile without assuming regularity. So empirical induction base on the principles that can't be empirically justified. Hjørland (2005) describes criticisms to empiricisms by rejecting the idea that our experience is independent of the underlying theories, culture, conceptualizations and political interests.

Logical Empiricism and the Unity of Science

The legacy of modern Empiricism is alive in many ways. In the full version of his experiment, John Stuart Mill argued that mathematics is not a matter of the heart. William James defended "fundamentalism" with metaphorical persistence, extending the concept of direct experience to include the relationship between details (as meanings and values) and the details themselves (Hossain, 2014). In many cases, logical emperors inherited Hume's ideas and problems, but they sifted through various logical and linguistic twists. This new type of Empiricism was primarily concerned with the language of science. Indeed, it can be argued that he focused almost exclusively on justifying scientific terms, propositions, and theories, as well as on removing the unscientific (i.e., "metaphorical") debris of philosophy (Hossain, 2014). Logical emperors struggled to define how cognition would ultimately be understood - certain criteria include correspondence, possession of values, and internal consistency - and never agreed on how. Agree to complete. They should be banned permanently. However, he acknowledged that there was a difference in principle between reality and value (Hossain, 2014).

The Limitations of Empiricism

Empiricism has the followings limitations:

- The logical conclusion of this modern empiricist stage denies the existence of objective reality.
- It also avoids the dialectical relationship between the content of the experience and the objective element.
- It is believed that sensory experience is the only source of knowledge.
- Traditional empiricism emphasizes the impossibility of metaphysics.
- Sensory perception is related to reality.
- Empiricism leads to subordination.

Rationalism

Rationalism is a philosophy which holds that truth can only be reached by reasoning analogical argumentations rather than sensory perception alone. It also holds that human is born with some innate and true ideas and concepts such as language and some mathematical concepts (Pecorino,

n.d.). Hjørland states that “rationalism is the view that rational intuitions are the most important way of acquiring knowledge” (2005, p. 130). Markie (1998) explains that the term ‘rationalism’ is used to cover a variety of views. He further reveals that the scholars of the Enlightenment have confidence in the human intellect instead of the following faith and accepting the authority blindly. Rationalism introduces reason as a distinct faculty of knowledge as compared to sensory experience. Descartes, Spinoza and Leibniz are the famous rationalists. According to rationalism, we need to think about the external world to gain knowledge and we need appropriate concepts for this purpose. These concepts can’t be derived from the experience only, some of our concepts require innate ideas. Markie (1998) mentions Descartes that he divided ideas into three categories: Adventitious ideas are gained by sensory experience; fictitious ideas are made by the ideas that we already have; innate ideas, which are placed in our mind by God at the time of creation.

Rationalism does acknowledge the role of observations, but the difference is that empiricism sees observations as chemical-physical stimulations while rationalism sees observations as inborn structures. Rationalism emphasizes the role of conceptual clarity and prefers deductive methods instead of using inductive methods. It uses a top-down approach, it means it derives ideas from pre-established categories. In general usage, rationalism refers to a basic estimate for reason or the idea that reason should play an important role in human life (as opposed to mysticism, for example) (Pecorino, n.d.). The nature of rationalism is not a universal deduction, as is often argued. Although in a special and generally not understood sense, this is a conclusion relating to views. However, this is certainly not in the sense that the possibility of such deduction is accessible to humans or the limited mind. Now, finally, we can turn to the concept of rationalism as an ontology and the relationship between its study and theory of knowledge. From this point of view, epistemological questions derive answers from previous ontological considerations, and the conditions of knowledge are determined by the nature of the world in which that knowledge can exist. It begins with an understandable ontology and follows the appropriate epistemology (Haserot, 2015). The people who work within Libraries use epistemological frameworks to understand what the library is, what it does and how one behaves within its systems. The practitioners and scholar of LIS can carry out their occupational practices of research without being able to explicitly articulate the understanding paradigmatic bases of their acts. It should be an object of great interest to LIS scholars and philosophers to try to articulate the nature of these underlying systems of knowledge and power (Radford & Budd, 1997).

Criticisms of Rationalism

Karl Popper posed his philosophy as critical rationalism and rejected the inductive method and the empiricist’s way. He suggests that scientists should propose strong conjunctions that can be falsified with the tests. Popper states the principle of falsifiability. Those scientists should put their hypotheses that can be presented for empirical tests (Hjørland, 2005).

Limitations of Rationalism

Rationalism suggests that people are born with unique ideas, truths and truths from certain subject areas (e.g. mathematical concepts) that are part of our rational character, and we only need to bring them to the surface. However, as the philosopher John Locke said, there are "fools" who do not recognize and cannot understand simple concepts that go against the universality of innate ideas. Moreover, there is no mistake because the laws of logic describing the world can be based on human misconceptions. Otherwise, scientists will not conduct experiments and will rely solely on logical arguments (Vossos, 2020).

Empiricism vs. Rationalism

The comparison between empiricism and rationalism is given below:

Empiricist: Empiricists share the view that there is no such thing as innate knowledge, and instead knowledge is derived from experience (perceived by the five senses or inferred by the brain or heart). Rock, Berkeley, and Hume are empiricists (although they have very different views on metaphysics).

Rationalists: Rationalists share the view of innate knowledge. They differ in that innate knowledge selects different entities. Plato is a rationalist because we are thinking with an innate knowledge of forms [mathematical objects and concepts (triangles, equality, size) and moral concepts (goodness, beauty, virtue, piety), and perhaps colour-he never manifest Never mention that there is a shape of colour that does not]; I think Descartes is born with the idea of God, the knowledge of perfection and infinity, and my existence. G.W. Leibniz believes that logical principles are innate. Noam Chomsky believes that the ability to use language (language rules, etc.) is innate (Yount, 2013).

Empiricism (supporting empiricism, against rationalism)

Yount (2013) differentiates between empiricism and rationalism in the following points:

Empiricism is simpler: Compared to empiricism, rationalism has another entity: innate knowledge. According to the empiricist, innate knowledge is unobservable and inefficient. In other words, it does nothing. Knowledge can never be used there. Using Ockham's razor blades (simpler theories are better when determining competitive theories that explain the same phenomenon) empiricism is an excellent theory.

Inability to perceive simple concepts: How do you know what blue looks like if you were born blind? The only way to get a blue idea is to experience it with your senses. (This objection probably only works for Plato, see again the explanation above for why this objection upsets Descartes, Leibniz or Chomsky).

Progress in science: It is based on many empiricist principles of science and did not develop without it. If we base our conclusions about the world empirically, we can change theories to improve them and see our faults. Rationalism seems to have to discover our innate knowledge and say that we are wrong and ashamed of ourselves (see examples of vacuum etc. above).

Disagreement within the rationalist regarding innate knowledge: Rationalists claim to have innate knowledge that gives us a basic truth about reality, but even among rationalists, there are disagreements about the nature of reality itself.

Rationalism (supporting rationalism, against empiricism)

Following points are in the support of rationalism and against empiricism:

Mathematics and logic are innate: We observed that certain mathematical and logical concepts are innate for example, we know that $1 + 1 = 2$ even though these concepts have no empirical bases.

The problem of Morality: How do we know what is right or wrong if we have no empirical proof of these concepts. This would make ethics a redundant branch of philosophy. Not only are that, the societal re-precaution of such an idea massive.

Verification of empiricism: Rationalist argues that to prove empiricism we require non-empirical mean. This would make the position of empiricists contradictory.

Does empirical theory undermine creativity? According to empirical theory, things can be combined and separated, but nothing else. Rationalism allows us to experiment with standard tools

for creativity. For example, Plato would say that we are touching an abstract and unchanging reality. It provides a lot of material to create.

Positivism

Positivism is "a system that can only be scientifically proven or logically proven accepts only metaphors and theology and therefore rejects them" (Oxford, 1989: pp. 385-386), remains true for most applications, but does not make the slightest distinction. Positivism is a system in Western philosophy that is usually limited to loyal information and rejects preconceived or metaphorical assumptions. Particularly, term refers to the thought of the French philosopher Auguste Comte (1798-1857). In general, positivism associated with experimental and quantitative research is considered empirical or empiricism. Ryan (2018) proposes that empiricism is one of two fundamentalist philosophies, rationalism or empiricism, which believes that knowledge should be free from superstitions arising from the values and beliefs of researchers (Ryan, 2018). Kolakowski (as cited in Hjørland, 2005) proposed that the positivism should be characterized by four rules: Phenomenalism; nominalism; denial of cognitive value for judgements; unity of scientific method. "Logical positivism was a twentieth-century attempt to combine empiricism and rationalism" (Hjørland, 2005, p. 130). The logical positivist considers sensory knowledge as the most certain knowledge. The concepts that can't be experienced should at least be proved by observations and those concepts that lack this quality are meaningless. Haakonssen (as cited in Hjørland, 2005) summarizes the principles of logical positivism.

- Languages can articulate all human knowledge. No possibility of knowledge can't be articulated.
- All human knowledge can be condensed to personal sensory experiences. We can understand this process in the opposite direction too, all human knowledge is based on basic sentences on instant sensory experiences of humans.
- This condensation of knowledge is supported by the contemporary symbolic language.
- All knowledge that can't be condensed to basic sentences of sensory experience is meaningless. Because the meaning of the sentence is the way to verify it. If we can't decide under which condition it holds or false, this knowledge is then baseless. This is the criterion for the authentication capacity of meaning.
- By applying this authentication technique, we can verify the remaining knowledge if it is correct or incorrect. If the basic sentences in which it is condensed ascertain reality, it is correct. If not, it is incorrect. So, in this way, we can solve every problem.
- This method applies to the sciences only. Hence, it can be concluded that sciences characterize the only kind of existing knowledge.

Nonetheless, Auguste Comte had a different opinion. He argued that human thinking develops in three stages: religion, metaphor and science. Building on Hume's work, he argues that society, humanity, and humans can be tested experimentally. Cognitively, positivists see the world as separate because the world exists ontologically, whether the researcher is present or not, they believe that there is an external reality that can be found experimentally through assumptions and reasoning. For example, if we know that something is happening, we can look back and find out why (Ryan, 2018). Positivism and sociology have common origins, and positivism remains an important trend in sociology and other social sciences. In positivist sociology, the study of the social world from a scientific point of view is characterized by empirical research, statistical

methods and a search for general laws of social life that can be confirmed by experience (Outhwaite, 2001).

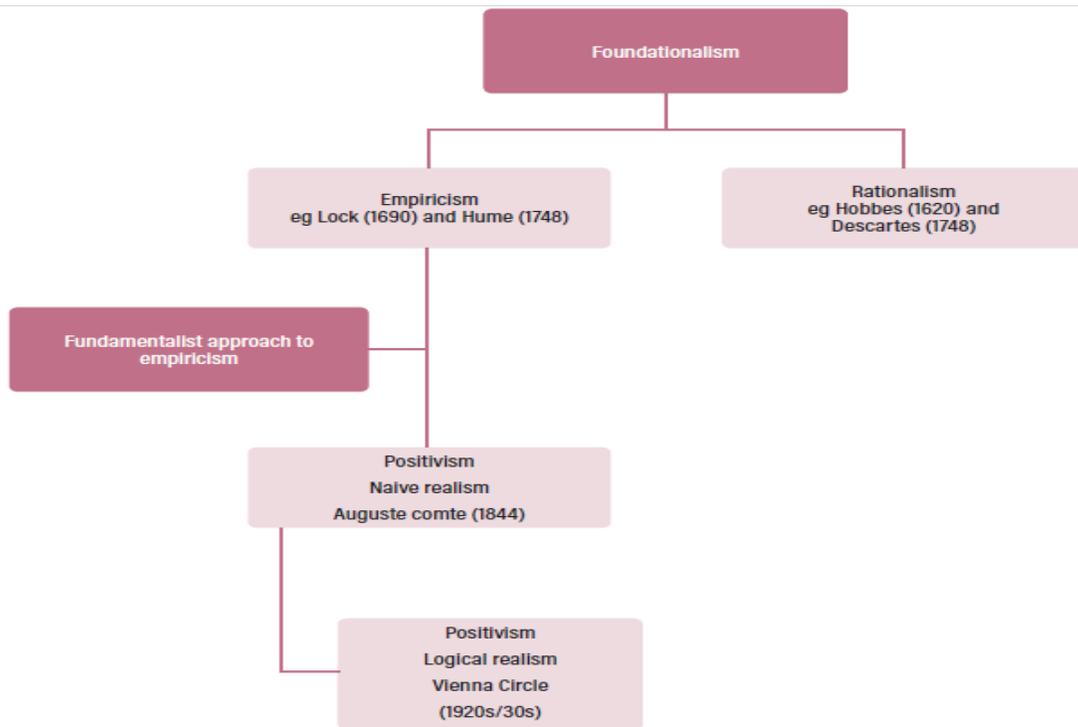


Figure 1. Perspectives of empiricism and positivism (adopted from Ryan, 2018, p. 16)

From philosophical ideology and movement, positivism was first called a sociological science and acquired its characteristics in the systematic work of Conte. It then went through one level, consisting of several stages, such as Empirio-criticism, logical positivism, and logical empiricism, and eventually became a tradition in the mid-twentieth century (Outhwaite, 2001). The main argument of positivism is that (1) all knowledge about reality is based on "positive" data obtained from experience and (2) reality, as well as on pure reasoning and pure mathematical knowledge. The two branches had already been recognized as the "ideological relationship" of the dubious 18th-century Scottish imperialist David Hume, and in the latter stages of positivism were fully classified as a formal science. Negatively and critically, the positivists have gone beyond all possible evidence to support or refute this kind of "transcendental" claims about the denial of metaphors and the nature of reality. The most important thing about positivism is to keep a close eye on witnessing excitement and experience. This commandment is reflected in the contribution of positive attitudes to moral philosophy, which is "the greatest happiness for most people" and their highest moral values. In this case, Comte was the founder of a short-lived religion whose purpose was to worship humanity rather than a monotheistic religion's deity (Outhwaite, 2001).

Positivism is a relevant problematic for LIS scholarship as an invisible Epistemological foundation whose counters and structures have not been recognized in the practices of LIS (Radford & Budd, 1997).

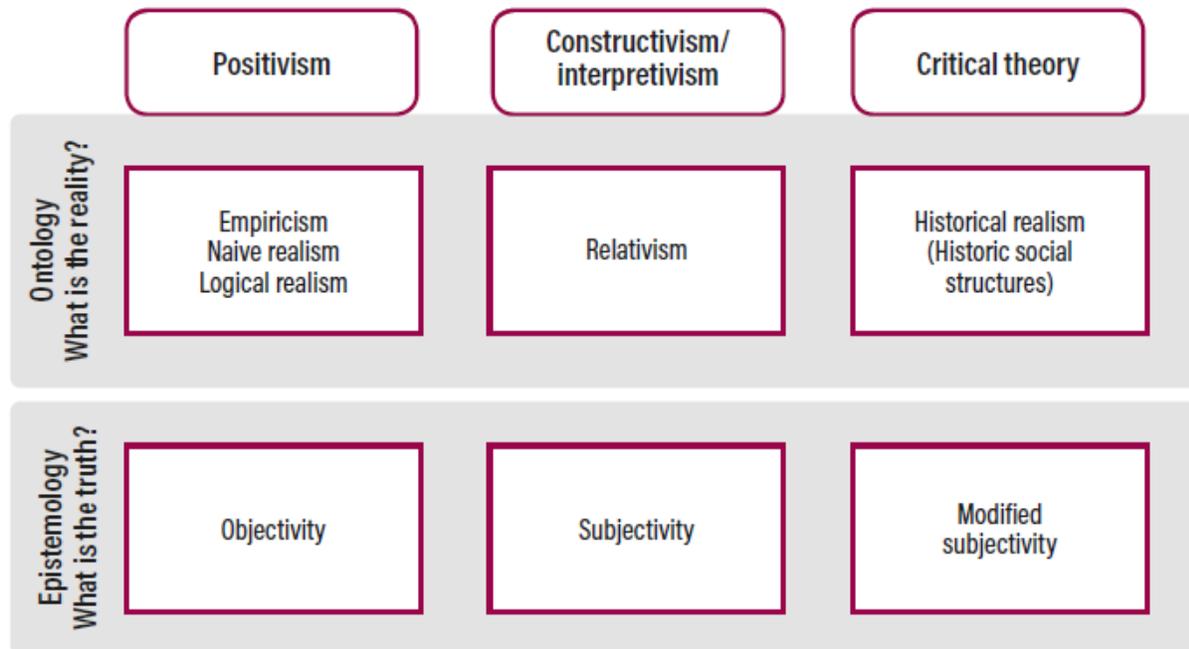


Figure 2. Philosophical paradigms (adopted from Ryan, 2018, p. 15)

Criticisms to Positivism

Positivism has been criticized on many grounds. Kincaid (as cited in Hjørland, 2005) summarizes the criticisms by claiming that the distinction between theory and observation is difficult to draw in a precise manner. Attempts to translate theoretical terms into observational terms lead to the presupposition of theoretical terms because the theoretical terms can be applied to observational terms in many ways. Even we can distinguish the boundaries of observation and theory, observations have theoretical assumptions. Thus, there is no definite epistemic basis to theories.

Limitations of Positivism

The two principal disadvantages of positivism are given below:

- It searches for ideal and perfect standards of scientific methodology and analysis are very unrealistic when set beside the extreme complexity of social phenomenon.
- Positivism's lack of consideration and empathy of the subjective, individual and hermeneutic aspects of social phenomena.

History of Empiricism, Rationalism and Positivism

Hjørland (2005) sketched the history for Empiricism, Rationalism and Positivism, which describes the origin and relation of these theories to each other. According to him, Questions about the nature of knowledge go back in history, even the philosophers like Plato and Aristotle have described different approaches. Plato was in favor of logical intuitions while Aristotle emphasized on the empirical investigation (Hjørland, 2005). The scientific revolution of the seventeenth century was an important era in developing opposition against mysticism and supernatural ways of being informed. During this period the scientific experiment dominates in science (Hjørland, 2005). It substitutes the belief that some authorities should be believed without being critically

examined. A popular interpretation of the scientific method is that it is solely based on observations. This interpretation is not without problems and classical rationalists criticized it by claiming that observations presuppose the concepts which can't be empirically verified. Empiricism and Rationalism are the two main tendencies in western philosophy between scholasticism and Kant. Empiricism is related to British thinking while Rationalism is to continental thought. The major names of British empiricists are John Locke, George Berkeley, David Hume and John Stuart Mill (Hjorland, 2005). The major Continental rationalists are Rene Descartes, Benedict de Spinoza and Gottfried Wilhelm Leibniz. In the twentieth century Rationalism being represented as logical Positivism which was an attempt to join rationalism and empiricism. Positivism was given its distinctive features as a movement and an ideology by Auguste Comte (Hjorland, 2005).

Empiricism

The third book of Locke's Empiricism work, *Human Understanding of Essays* (1690), also included a discussion of language. This "language twist" was a late addition to Locke's theory. It arises from recognizing the close relationship between thoughts and words and then moves on to the representation of knowledge and the consideration of communication (Hossain, 2014). David Hume was a Scottish philosopher, historian, economist and essayist known for his philosophical empiricism and skepticism. In the ever-experimental version, the basic structures of knowledge were specific impressions and theories derived from these basic sensory data. Prints were a clear product of immediate experience, while ideas were originally or at most fragile copies. As a result, theories were linked by three principles of mental attachment: similarity, harmony, and cause and effect (Hossain, 2014).

Rationalism

Early philosophers called rationalists today include Descartes (1596-1650), Leibniz (1646-1716) and Spinoza (1632-1677). These thinkers thought they were advocating a form of rational thinking in the form of science against the old way of thinking known as scholasticism. The defense of science provided by Descartes included a form of dualism that inherited the traditional elements of scholars in the form of descriptive, deductive, and abstract thinking. In Spinoza's ethics, the method is still deductive and is modelled on the geometric system of Euclid's *Elements*. Rationalism is a way of thinking expressed in a deductive and abstract way of reasoning (Pecorino, n.d.).

are the theological, in which the human wills are adopted to explain natural events; the metaphysical, in which these wills become forces and essences; and finally the positive (Positivism, 2006). The key points of positivism are that the philosophy should be scientific, there shouldn't be any place for metaphysical speculations and there should be a scientific method which should be analyzed by philosophy and it should be same for social and natural sciences. Today positivism is used differently than the previous classical forms of positivism.

Use of Empiricism, Rationalism and Positivism in LIS

The concept of the library is as old as the human invented the skill of writing and felt a need to preserve and record knowledge to be applied for the development of society and for transferring it to the next generations. This field of the library has gone through many changes over time due to changing media and the advancement of technologies. But the core functions of the library remain same, i.e. acquisition, organization, management and preservation of knowledge. This post-modern era expands these functions by taking it to the level of information. Moreover, the information explosion generates the need for selection of information that is useful for society and that need to be disseminated and preserved. LIS deal with knowledge at two levels, knowledge in LIS and Knowledge of LIS (Budd, 2001). Budd (2001) asserts that the LIS is a practical field, but actions do need conceptual basis too. Hjørland (2005) mentions that it is hard to trace applications of different theories in the LIS because these are applied implicitly or unconsciously. Different researchers have a different point of views in this regard. Ranganathan established the faceted system of classification. It is an example of rationalist philosophy in LIS. Because this classification lacks any empirical base, but it is strong because it gives proper definitions and rules. Hjørland (1997) identifies that algorithms of information retrieval are an example of empiricism in the LIS. Rayford (as cited in Hjørland, 2005) claims that the positivist approach is visible in Paul Otlet's basic ideas. Otlet's concern was about objective knowledge contained and hidden in documents. Otlet suggested that the content which is our concern are facts. This can be achieved by computer files and it took the positivist approach to accomplish this task. Wilson (2002) noted the influence of positivism in LIS by mentioning that over the past 50 years there is a visible shift from positivist to phenomenologist method. He asserts his point by giving evidence of research work published in the field of LIS for the Royal Society Scientific Information Conference, the very little knowledge was provided about motivations and behaviors of scientists. Ten years later, papers presented in International Conference on Scientific Information, 1959 shown a significant shift towards the sociological approach. Since the 1980s there is a shift toward qualitative methods in LIS research.

Hjørland (2005) doesn't agree with Wilson's study and gave some examples in his research paper to prove the prevailing positivist approach in LIS. The first example is about inter-indexer consistency. He revealed that this kind of studies expects that there is only one true approach to indexing and the indexers who differ in their approach from other indexers are wrong. These types of studies are positivist in their approach, as these counts the number of agreements in cases, instead of asking why the indexer approaches differently. Secondly, these studies are positivist in their approach because of the methodology, this system doesn't consider indexer's interpretations but takes them as automata. Hjørland (2005) gave another example of a positivist approach as relevance research. He describes that the research is judged on two bases the relevant and non-relevant data. This approach is positivist because it only finds correlations in searches and not talk about the causes of non-relevant searches. Because of this approach, there is no advancement in relevant research because we don't consider the causes and not draw any conclusions about non-

relevant search results. Hjørland (2005) further describes that there was an idea that the psychological studies of human beings can help in providing a basis to design information systems. But this idea was criticized by researchers and sociological approaches were recommended in replacement of cognitive view and methodological individualism. Thus, bibliometric studies are done to tackle this issue. Moreover, a related issue is a tendency in cognitive and user-oriented approaches which are used to provide abstract models of users. But this approach is a criticism of positivism as it can't be studied by a general scientific approach, but more domain-specific studies are required for this purpose.

Conclusion

This paper has tried to review the role of empiricism, rationalism and positivism in general and with specific relation to LIS. In ancient times, people were forced to obey authorities for adopting beliefs. The scientific revolution originated in opposition to these baseless beliefs. The scientists proposed that every belief or concept has its bases which can be proved. Scientists argue in providing a method for this approval. A group of philosophers suggests sensory experiences to prove concepts, it means every concept should be tested on basis of experience or at least has a sensory experience at its base. Empiricists reject a priori knowledge, they have a concept of *tabula rasa*, that humans born without any innate knowledge with a clean slate. Rationalists reject this idea by criticizing that some well-established branches of knowledge may not have empirical bases, such as logic and mathematics. Hence, reasoning should be the method to gain knowledge.

This concept is in favor of a priori knowledge, it means it accepts that humans have innate knowledge which is given by God at the time of creation. Positivism combines these two concepts, positivism suggests that the knowledge has a sensory experience at its base and if the concept can't be subjected to sensory experience it should have observations to be proved, otherwise it is meaningless. Empiricism, Rationalism and positivism are very least studied in the field of LIS. Hjørland proposed that theories of empiricism, rationalism and positivism are applied to LIS implicitly or unconsciously. He proposed examples from the library to prove that rationalism, empiricism and positivism are prevailing theories in the LIS. Classification of Ranganathan is an example of rationalism, algorithms for information retrieval are an example of empiricism and inter-indexer consistency and relevance research are examples of positivism in the LIS.

There is a need for research in this field for better understanding the concepts of LIS, for decision making and advancement of LIS. Researchers need to consciously find the philosophical basis of their research works. It will validate their research because of careful application of the scientific method and the research will be more applicable to the benefit of the field and will be able to contribute to beneficial knowledge. Positivism is a way to investigate phenomena, but LIS should turn to phenomenological approaches for in-depth understanding and for finding the solutions of problems that are being identified by the Positivistic approach.

References

- Alston, W. P. (1998). Empiricism. In E. Craig (Ed.), *Routledge encyclopedia of philosophy* (Vol. 3). London: Routledge.
- Bergman, M. (2016). Empiricism. In K. B. Jensen, R. T. Craig, J. D. Pooley, E. W. Rothenbuhler (Ed.), *The International Encyclopedia of Communication Theory and Philosophy*, (pp. 1–9), John Wiley & Sons.

- Bird, C. (2008). *Are you searching for ways to find information?* Paper presented at a conference. Retrieved from https://www.researchgate.net/figure/The-DIKW-Data-Information-Knowledge-Wisdom-model-shows-how-the-human-mind-can-move_fig1_221437134.
- Budd, J. M. (2001). *Knowledge and knowing in library and information science: A philosophical framework*. Lanham: Scarecrow Press.
- Empiricism. (2006). In D. D. Runes (Ed.), *The dictionary of philosophy* (p. 89). New York: Philosophical Library.
- Haserot, F. S. (2015). The Meaning of Rationalism. *The Journal of Philosophy*, 44(8), pp. 205-216.
- Hjorland, B. (2005). Empiricism, rationalism and positivism in library and information science. *Journal of documentation*, 61(1), 130-155.
- Hjorland, B. & Albrechtsen, H. (1997). Information seeking and knowledge organization: The presentation of a new book. *International Journal of Knowledge Organization*, 24(3), 136-144.
- Hossain, F. M. A. (2014). A Critical Analysis of Empiricism. *Open Journal of Philosophy*, 4(3), 225-230
- Mala, J., & Cerna, L. (2012). Information quality, its dimension and the basic criteria for assessing information quality. *Research Papers Faculty of Material Science and Technology in Trnava*. 20, 86-93.
- Markie, P. J. (1998). Rationalism. In E. Craig (Ed.), *Routledge encyclopedia of philosophy* (Vol. 8). London: Routledge.
- Markie, P. J. (2017). Rationalism vs Empiricism. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy*. Retrieved from <https://plato.stanford.edu/entries/rationalism-empiricism/>
- Moore, B. N., & Bruder, K. (2014). *Philosophy: The power of ideas* (9th ed.). New York: McGraw Hill Companies.
- Outhwaite, R. W. (2015). Positivism, Sociological. *International Encyclopedia of the Social & Behavioral Sciences* (2nd Ed.), Vol. 18, pp. 625–629, UK: Elsevier.
- Pecorino P. A. (n.d.). *Rationalism*. Retrieved October 10, 2020 from https://www.qcc.cuny.edu/socialsciences/ppecorino/intro_text/chapter%205%20epistemology/rationalism.htm
- Positivism. (2006). In D. D. Runes (Ed.), *the dictionary of philosophy* (p. 243). New York: Philosophical Library.
- Radford, G., & Budd, J. (1997). We Do Need a Philosophy of Library and Information Science -- We're Not Confused Enough: A Response to Zwadlo. *The Library Quarterly: Information, Community, Policy*, 67(3), 315-321.
- Richardson, J. (1999). *Rationalism, theoretical orthodoxy and their legacy in cost utility analysis*. Retrieved October 08, 2020 from <http://ebour.com.ar/pdfs/Rationalism,%20Theoretical%20Orthodoxy%20and.pdf>
- Rubin, R. (2004). *Foundations of library and information science* (2nd ed.). New York: Neal-Schuman Publishers.
- Ryan, G. (2018). Introduction to Positivism, Interpretivism and Critical theory. *Nurse Researcher*, 25(4), 14–20.
- UK Essays. (2018). *Advantages and Disadvantages of Positivism*. Retrieved 07-10-2020 from <https://www.ukessays.com/essays/sociology/advantages-disadvantages-positivism-9924.php?vref=1>

- Vossos, T. (2020). *Advantages & disadvantages of Rationalism & Empiricism*. Retrieved October 10, 2020 from <https://classroom.synonym.com/advantages-disadvantages-rationalism-empiricism-8754632.html>
- Weber, M., (1968). *Economy and Society: An Outline of Interpretive Sociology*. In: Guenther Roth, Claus Wittich (Eds.), New York: Bedminster Press
- Weber, M., (2009). *The Protestant Ethic and the Spirit of Capitalism*. Oxford University Press, New York; Oxford.
- Yount, D.J. (2013). *Empiricism v. Rationalism*. Retrieved October 10, 2020 from <https://www.mesacc.edu/~davpy35701/text/empm-v-ratm.html>