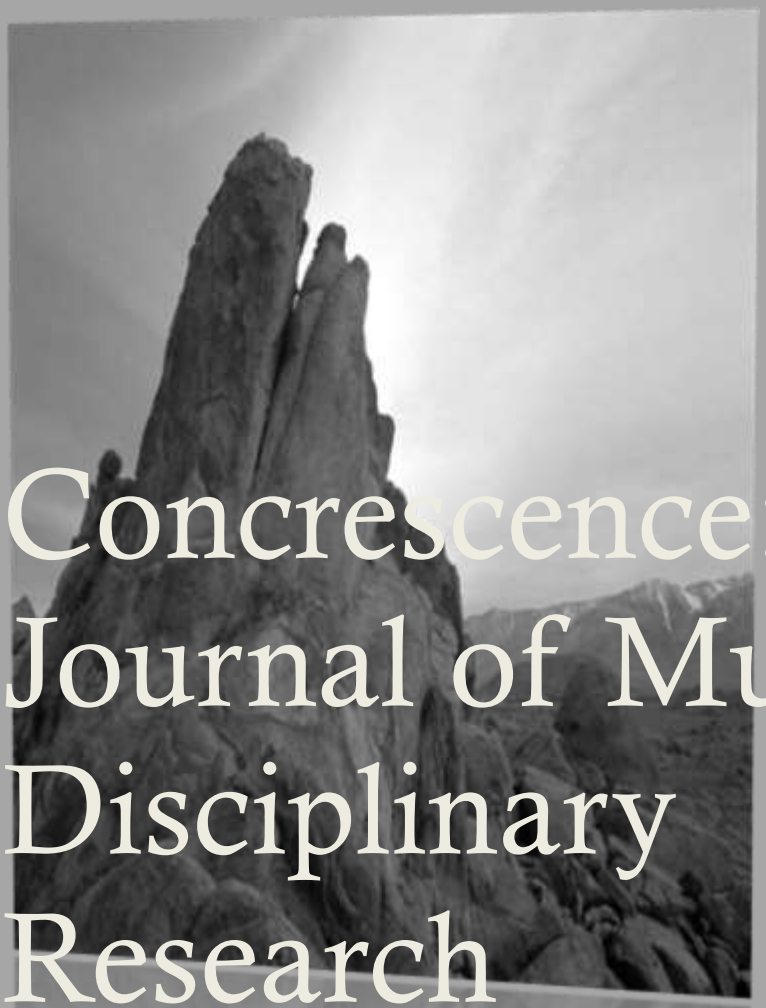

Concrescence: Journal of Multi-Disciplinary Research

Volume 2, Number 3, 2025, E-ISSN: 1595-9287

Faculty of Humanities, Imo State University

Concrescence: Journal of Multi-Disciplinary Research
Vol. 2, No. 3, 2025, E-ISSN: 1595-9287

Epistemological Functionalism as the Rational Basis for Indigenous Knowledge

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Abstract
This paper analyses the rational justification for the claim to indigenous knowledge. (I identify this rational ground as epistemological functionalism.) Epistemological functionalism emphasizes the role of "function" and "survival" in knowledge justification. It challenges the Western criterion of knowledge claims, which emphasizes the relation between subject and object. Epistemological functionalism encourages a more inclusive and pluralistic view of knowledge. Adopting the hermeneutics methodology of interpretation and analytic argument, the paper engages in a rigorous analysis of the foundations of indigenous knowledge systems. The study then places indigenous knowledge alongside other contemporary variants, such as Natural Epistemology and Feminist Epistemology. It reaches a conclusion that germane to indigenous epistemic claims are conditions characterized by consideration of the person, the people and the culture at the heart of the knowing experience.

Keywords: Epistemological Functionalism, Feminist Epistemology, Indigenous Knowledge, Natural Epistemology, Rational Basis.

Introduction

In today's world, the recognition and acceptance of different types of knowledge claims have become crucial. There is no doubt that academic and intellectual discourses have long been dominated by Western epistemologies, which have tended to overshadow rich and complex knowledge systems of indigenous communities. There is a need, therefore, to reevaluate and give credence to indigenous knowledge and the acceptance of their paradigms, not only for their cultural significance but also for their practical and theoretical value. This is where the concept of epistemological functionalism, as the rational basis for indigenous knowledge, becomes significant.

Epistemology is the branch of philosophy that deals with the nature, origin, and scope of knowledge. As a subset of epistemology, epistemological functionalism sees knowledge from the perspective of its functions within a particular context. It examines how knowledge serves different functions in a community or society. Epistemological functionalism is thus an alternative paradigm to the Western tradition that bases knowledge solely on its truth-value in an absolute and real sense. With epistemological functionalism, knowledge is conceived of as a tool that helps individuals and communities to navigate their environment, solve problems, and contribute productively to the world. This is evaluated based on its effectiveness in achieving these goals. For instance, in a

traditional agricultural community, knowledge about the best time to plant crops, based on local weather patterns and soil conditions, is admissible as justifiably epistemic because it leads to successful harvests. Epistemological functionalism therefore, provides a framework for understanding knowledge as a dynamic and context-dependent phenomenon.

Indigenous knowledge can be interpreted as local knowledge or a unique collection of tested and workable beliefs developed by indigenous peoples over generations. This could encompass different areas such as agriculture, astronomy, medicine, ecology, and social organization. It follows that this knowledge is deeply rooted in the environmental, cultural and historical contexts of indigenous communities.

Unfortunately, such an indigenous knowledge system has always been marginalized or outrightly dismissed as falling short of the Western criterion for what qualifies as epistemic information. Indigenous knowledge is prehistoric in its origin and proves to be effective in the application of its hypotheses. Unfortunately, it has been labelled as pseudo-scientific because of its difference from Western scientific paradigms. This work shows that indigenous knowledge is often based on careful observation, experimentation, and empirical evidence, and it has a rational basis that can be understood and appreciated. The rational basis for indigenous knowledge is in its ability to provide practical solutions to real-world problems. Indigenous communities have developed sophisticated ways of understanding and interacting with their natural and social environments. For example, indigenous medicinal knowledge finds application in the use of local plants to treat various ailments. This knowledge is based on centuries of trial and error, as well as a deep understanding of the properties of different plants. This paper also challenges the dominance of Western epistemologies and promotes a more inclusive and pluralistic view of knowledge. It argues that by recognizing the rationality and functionality of indigenous knowledge, we create the appropriate temperament to concede to various ways of knowing which can be integrated into modern scientific and technological canons.

Of Knowledge and Rationality

The most important epistemological question that has developed since the modern period is: how is reliable knowledge possible (Habermas, 1968, p. 3). This assertion by Jürgen Habermas underscores the crucial role of knowledge in human inquiry. Traditional epistemology has been concerned mainly with the analysis of the concept of knowledge – its possibility and meaning, as well as its origin and value. Epistemology set for itself the task to discover the general, basic or fundamental normative criteria and principles of knowledge, and how knowledge is distinguished from mere belief or opinion.

To be sure, the Cartesian epistemological programme was initiated in the 16th century to develop a system of principles and methods for conducting human inquiry – inquiry whose ultimate aim is to produce reliable knowledge. Inspired by this desire for reliable knowledge, Descartes constructed a system that he bequeathed to modern thought, of which he is often described as the father (Pearenboon, 1990, p.4). The system had the background assumption that the order of nature is fixed and stable, and that the human mind acquires mastery of it by operating in accordance with principles of understanding that are equally fixed and universal (Toulmin, 1972, p. 44). To most modern thinkers, this assumption was beyond question. It not only influences the understanding of rationality at the time, but it also determines the type of epistemological questions that can be raised.

Aside from this assumption, the history of discourse has also witnessed a certain disposition of the mind – a certain anxiety expressed in the belief that in our understanding of reality, and our interaction with it, only two options are open to us: either we are

equipped with some permanent, a-historical framework to which we can ultimately appeal, or we are ineluctably led into relativism, historicism, skepticism and irrationalism. This implies that we are always faced with a choice between a certain, binding set of ideals and epistemological chaos (Bernstein, 1988, p. 8). To resolve this anxiety, it was generally believed, we required a fixed framework of universal and foundational principles. Rene Descartes, in pursuing this goal, embarked on a search for what he called an "Archimedean point" in his Meditations (Capra, 1984, p. 39).

Of course, the term "epistemology" or "theory of knowledge" was coined only in the nineteenth century, but the subject that it retrospectively denotes is the subject of modern philosophy in general, at least until the threshold of the nineteenth century (Habermas, 1968, p. 3). With time, however, it became more appropriate to describe epistemology no longer as a theory of knowledge – a grand totalizing framework of principles of method by which we are to arrive at knowledge, but to refer to epistemology as "theory of justification". This, in other words, meant a demand for the rational grounds or basis for holding those beliefs that we hold – a call for a single fixed and universal theory of rationality. By this, it is understood that genuine knowledge (and this would include indigenous knowledge) must be based on a framework of rationality which consists of a fixed set of historically and culturally neutral principles.

From Form to Function

The standard expression of the framework of rationality is the formal system of logic or the deductive demonstration of mathematics, emphasizing relations between prepositions or terms. Our beliefs and opinions about nature, and by extension, knowledge of things must start as they do in the deductive system of mathematics, from some intuitively certain axiomatic premises, proceeding through necessary deductive references, to securely established demonstrable conclusions. Central to this epistemology is its concern for a method of investigation or a procedure of reasoning that is able to yield knowledge. This method was to follow the system of logic and geometry. Earlier, Galilei Galileo (1564 – 1642) had declared that "nature is a vast book" (Rorty, 1982, p. 10) standing ever open before our eyes, but cannot be read until we have learnt its language and become familiar with the character in which it is written – the language of mathematics, for it is only when we reduce phenomena to mathematical terms that they are perfectly rational and completely real. This is nature at the bottom.

This formalist element present in modern discourse was re-emphasized by Gottlob Frege in his equating rationality with logicality. According to Frege, beliefs are considered rational to the extent that they can be reduced to a formal system of logic (Frege, 1968, p. 43). A formal system is an idealized (abstract) language developed as a means of analyzing concepts. What is emphasized in the formalist mode is the relations between ideas, terms and prepositions. In Frege's view, concepts, such as knowledge, are timeless entities and conceptions common in any community, and are significant only as approximations of an "eternal" ideal system of concepts. Thus, any concrete or historical conception will have a legitimate claim on us only to the extent that it approximates that ideal system. Following Frege, Bertrand Russell considered concepts to be ideal timeless entities whose true nature and character are determined in relation to a system of necessary relations such that the only worthwhile project for rational inquiry is the development of a system that would ensure that logical formalism is extended to the natural and social sciences as well as practical life (Putnam, 1981, p. 107).

The project of formalism and its corresponding theory of rationality constitute a drive to establish some communication between, and consensus among local canons of rationality, making them answerable to a single standard. The functionalist project, on the other hand, questions the very merit of any consensus as a regulative ideal of discourse (Bernstein, 1987, pp. 509 and 525). Functionalist epistemology has it that the project of formalism should be replaced by a more positive disposition towards the contingency and particularity of our experience of reality. In addition, Rorty (1980) argues that "a form of life which does not aspire towards a more than provisional truth will be better on broad cultural grounds than one that continues to do so". (p. 318). This entails the abandonment of any grand, universal, transcultural scheme for understanding and justifying knowledge. We are then left with a condition characterized by a fundamental heterogeneity of language game whose differences result in the impossibility of absolute knowledge. A move is therefore made from form to function. Emphasis is thus not placed on the abstract formalism of mathematical deductions focusing on relations of ideas, but on function, the practicality of the content of discourse.

The very implication of the foregoing is a thorough-going cultural pluralism in which alternative cultures are free to plot their future courses; in which the culture of Western formalism is exposed as only one among countless alternatives rather than as the essence of a universal culture. Such a liberal stance, which respects the self-determination of alternative cultures and which objects to the masking of special interests – even in the name of a universal culture of Reason, Objectivity and Rationality – is widely embraced by students of Anthropology and Culture. This is also acceptable to epistemological pluralism/functionalism, characterized by differences that are fundamentally incommensurable. In other words, there is no common ground that allows for any general knowledge. And so, Lyotard points out that any attempt at a general epistemology falls victim to the "inventor's paralogy" (Lyotard, 1987, pp. 73-74). What is perhaps most appropriate is epistemological functionalism proposed here as a rational justification for indigenous knowledge.

Epistemological Functionalism and Indigenous Knowledge

Epistemological functionalism gives a philosophical foundation for getting the rational basis of indigenous knowledge. By recognizing the functional and practical aspects of knowledge, epistemological functionalism recognizes the value and validity of indigenous knowledge systems. A major assumption underlying the entire program of epistemological functionalism is that the beliefs, facts, and procedures that constitute knowledge at any such belief or information cannot be about history-independent facts. This is clearly a rejection of the idea that tradition-independent points of epistemological functionalism are that beliefs or knowledge aid people in engaging their environment, encountering their world and confronting their problems, hence the functionality of such knowledge. Any functionalist knowledge, an example of which is indigenous knowledge, comprises an extensive array of competence-building measures derived from cultures and customs, and any legitimation must be socio-political and ethnocentric. It is on such grounds of epistemological functionalism that one may see indigenous knowledge as rational.

Moreover, we have to be aware that wisdom about how to act rightly in the world is a defining characteristic of Indigenous knowledge systems that is absent from the sciences (Aikenhead & Ogawa, 2007, p. 550). Indigenous knowledge systems are a way of life: enactment of knowledge is integral to the overall system (Henri et al., 2021, p. 2).

The variant of knowledge described as indigenous necessarily belongs to some "indigenous people" – a term which does not admit of any universal standard or a fixed definition. However, several widely accepted formulations have been put forward by important internationally recognized organizations such as the United Nations, International Labour Organizations and the World Bank. Drawing on these, a contemporary working definition of "indigenous people" has criteria that seek to include cultural groups (and their descendants) who have a historical continuity or association with a given region and who formally or currently inhabit that region. The concept of indigenous knowledge is often associated with indigenous peoples – a body of knowledge accumulated by communities over time, which enables them to live in balance with their environment.

It is also worth noting that it is best to hold different knowledge systems in tension rather than be in haste to build integrated systems. As McKinley & Stewart explain it, this latter approach promotes epistemic agency and relativism, which are prerequisites for epistemic functionalism (McKinley & Stewart 2012).

As we have already noted, some argue that science is universal and therefore not culturally specific. In other words, science is an endeavour to which multiple cultures have contributed, and, therefore, specific localized knowledge systems, since they are not universal, cannot be accepted as science "but rather, at best, as having made contributions to science" (Dawkins, 2023). On the other hand, indigenous science scholars have argued that since some indigenous knowledge is attained in ways consistent with scientific knowledge production, aspects of indigenous knowledge production can and should be considered scientific (Hikuroa, 2017, pp. 5-10; Black and Tylianakis, 2024, pp. 5-10).

This variant of knowledge is indigenous, embedded in the community and is unique to a given culture or society. In addition, the term refers to the large body of knowledge and skills that have been developed outside the formal educational system, which helps communities survive. The overemphasis on the Western knowledge system has led to a situation in which indigenous knowledge is ignored and neglected. It is therefore easy to forget that for many centuries, human beings have been producing knowledge and strategies that help them survive in a balanced relationship with their natural and social environment. As indigenous knowledge is related closely to survival and function, it gives the basis for local decision-making in (a) food security, (b) human and animal health, (c) education, (d) natural resources management and different other community-based activities.

However, indigenous knowledge is dynamic. It is the result of a continuous process of experimentation, innovation, and adaptation. It has the capacity to blend with other knowledge systems in sync with the standards of accepted scientific canons, and should therefore be considered complementary to scientific and technological efforts to solve societal problems. The interconnection between epistemological functionalism and indigenous knowledge is in two practical effectiveness approaches. Firstly, through a functional approach, both epistemological functionalism and indigenous knowledge emphasize the need for practical effectiveness.

Indigenous knowledge becomes more relevant through hands-on experience, observation, and experimentation, allowing communities to know and thrive within their environments. Secondly, through problem-solving, epistemological functionalism outlines the functions of knowledge in solving real-world problems. Indigenous knowledge systems are always designed to address specific challenges like finding food, managing natural resources, or maintaining social harmony. Moreover, 'Knowledge as system' is a metaphor typically

applied at the macro-level, referring to formal and indigenous knowledge systems that demonstrate variants of a shared range of epistemological processes. However, the metaphor can also be considered at meso-and micro-levels. At these levels, local knowledge becomes more visible, including within both indigenous knowledge systems and science (Yunkaporta and McGinty 2009, pp. 55-72).

Conclusion

The situating of the conditions for indigenous knowledge within the ambit of epistemological functionalism/pluralism is in agreement with some contemporary tendencies in the analysis of knowledge. One such tendency is 'Naturalized epistemology' – the epistemological orientation developed by W.V.O. Quine. Presented as a specific alternative to traditional epistemology, Quine's program in epistemology does not seek to justify the beliefs we hold and so proffer a justified knowledge. Rather, Quine asserts that what can be done is to examine how we come to hold the beliefs that we hold. We are to begin with our sensual perceptions, which he referred to as "meager input", and then proceed with formulated beliefs and opinions, which he called "torrential output". The inputs from our environments are processed in our physiological make-up and released as beliefs. This, for Quine, meant that we see epistemology as part of psychology, hence naturalized epistemology.

Another orientation in contemporary epistemology that shares a similar methodology with the conditions of indigenous knowledge is "feminist epistemology" – an epistemological orientation that places emphasis on the peculiarity of the female gender in the understanding and acquisition of knowledge. The feminists, therefore, call for a consideration of such contexts in the analysis of knowledge, arguing that the absence of such has been the undoing of traditional epistemology. Indigenous knowledge must be seen to have as its standpoint certain cultural contexts – cultures do not only produce the indigenous knowledge, but also are found to be maintained and sustained by such knowledge. It is in the function of such (indigenous) knowledge that they are rational. This implies that epistemological functionalism validates indigenous knowledge by providing a philosophical framework for validating indigenous knowledge systems, and also recognizing their functional and practical effectiveness.

Secondly, there is also no doubt that epistemological functionalism allows an integrative approach to knowledge. This is possible by incorporating indigenous perspectives and Western scientific knowledge to foster a more comprehensive understanding of the world. It would be significant for so many reasons to explore the interconnection between epistemological functionalism and the rational basis for indigenous knowledge. Firstly, we can gain a deeper appreciation for the value and validity of traditional knowledge systems. Secondly, it challenges the dominance of Western epistemologies and enhances a more inclusive and pluralistic view of knowledge. By recognizing the rationality and functionality of indigenous knowledge, we can also learn from these other ways of knowing and potentially integrate them into modern scientific and technological practices. Thirdly, it has important implications for the preservation and revitalization of indigenous cultures. If indigenous knowledge is respected and valued, it can strengthen the self-esteem and cultural identity of indigenous people and communities, promoting and contributing immensely to the well-being and sustainable development of these communities. Finally, the study of epistemological functionalism as the rational basis for indigenous knowledge shows new avenues for understanding the nature of knowledge and the diversity of human thought. It calls us to look beyond the narrow confines of Eurocentric perspectives and embrace the richness of indigenous knowledge systems.

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