

Other Ways of Knowing: Ethno Epistemic Challenges to the Universality of Science

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ARTICLE

CRITICAL THINKING



Our natural aptitudes enabled humans to thrive for ages, even in harsh environments. People observed regularities in their world (e.g., Inuit understood when ice was safe to travel) and manipulated nature to serve human ends (e.g., breeding corn in Mesoamerica). Several centuries ago, these natural ways of thinking evolved, and scientific methods emerged from diverse cultural foundations to build on traditional knowledge, separate fact from myth, reveal a deeper understanding of underlying mechanisms (e.g., DNA), and generate advanced technologies previously unthinkable (e.g., satellite imagery).

A scientific way of thinking about the world and its successes thrived despite repeated challenges from religious and other ethnocentric traditions. The first scientific journal, *Philosophical Transactions (Phil Trans)*, was founded in England by the multilingual German Henry Oldenburg, who ensured its transnational scope, spread a universal perspective that overcame major conflicts between nation-states, and helped create what we today call Europe. Science then spread globally to ultimately achieve an inclusive worldwide reach, leading to a “shrinking world” based on global contributions, international collaborations, and worldwide appreciation of science-based explanations and applications.¹ Indeed, unequal access to the benefits of science, including modern healthcare, is at the heart of many concerning inequities within and between nations. For example, in a study of over 400 Ethiopian women, harmful practices before and after pregnancy (e.g., food taboos, unsterile materials) were more common for poorer women with little education, in rural locations, and without trained assistants, all suggesting modern science-based medicine was wanting.²

Science has always faced efforts to undermine its universality, including academic critics such as Sandra Harding who claimed in the 1980s that the “epistemologies ... of the dominant forms of science are androcentric and ... also racist, classist, and culturally coercive.”³ Today, science faces diverse and more threatening proposals for culture-specific “ways of knowing,” hereafter Ethno Epistemics. In contrast to universality, Ethno Epistemics promote partisan epistemologies purported to rival or surpass science, which is wrongly relegated to just another culture-specific (i.e., Eurocentric) science. Extensive literatures on this theme exist in various corners of academia.

Philosopher Osman Bakar argues that “modern science is just one of several major forms of science ... Islamic science ... is another.”⁴ As are “Vedic sciences,” which include Jyotish (astrology) and Ayurveda (healing).⁵ Traditional Chinese Medicine adopts “Epistemic hybridity,” which entails “multiple legitimate evidence bases ... diverse ways of knowing.”⁶ Likewise, “African ‘ways’ of knowing” include “supernatural beings—spirits, ancestors ... intuition ... clairvoyance and telepathy.”⁷ Philosopher Roberto Di Ceglie promotes a Christian epistemic, “a ‘spiritual turn in epistemology’ ... on the basis of firm commitment to God,”⁸ while psychotherapist Teresa Marsh and colleagues writing about decolonizing methodology in the *International Journal of Qualitative Methods* observe that “In most Indigenous epistemologies, knowledge is acquired through revelation, such as dreams, visions, and intuition, and ... is ... spiritual ... from the spirit world and ancestors.”⁹

DISMISSING SUPRANATURAL EXPLANATIONS LIBERATED NATURAL UNDERSTANDINGS OF THE WORLD AND CONTRIBUTED NOT ONLY TO A UNIVERSAL WORLDVIEW BUT ALSO TO INNUMERABLE SOCIETAL BENEFITS OFTEN TAKEN FOR GRANTED.

That these “other ways of knowing” are rooted in supranatural elements is especially problematic. Science offered material explanations and won hard-fought battles over the supranatural, as manifested by a diminished role for theology in universities and widespread decreases in religiosity, especially among scientists. Dismissing supranatural explanations liberated natural understandings of the world and contributed not only to a universal worldview but also to innumerable societal benefits often taken for granted and with unintended irony (e.g., computers used to disseminate anti-science critiques).

Also concerning, Ethno Epistemics can “validate” idiosyncratic beliefs that puzzle those not sharing the relevant provincial perspective and could foster negative reactions across cultures. According to the Vedas (the oldest sacred scriptures of Hinduism), toe rings ensure a healthy pregnancy, and Maori epistemology teaches that the Kauri tree and whales are siblings. More egregiously, President Jammeh of Gambia acquired an herbal cure for AIDS in a dream from ancestors who were traditional healers; absent empirical evidence, he decreed it to replace science-based anti-viral treatment.

In advancing a plurality of “sciences,” Ethno Epistemics generally foster antipathy towards science, besmirching it as “Colonial science” and “White epistemology.” Rutando Ngara, an African Indigenous Knowledge Systems practitioner and transdisciplinary researcher, asserts that “Western science ... has ... subjugated other forms of knowledge ... a form of epistemic genocide or ‘epistemicide.’”¹⁰ Research methods professor Bagele Chilisa states: “that no subject area or theory, be it biology, physics ... has escaped Eurocentric colonialism and modern imperialism or globalization.”¹¹ Under Ethno Epistemics, unifying peoples around the world (i.e., globalization) becomes a negative rather than a positive goal.

Promoting Ethno Epistemics and denigrating the universality of science makes it less likely that people will adopt its benefits. For example, trust in science within and between nations is associated with support for vaccination. Nor will science-skeptics replace misguided pre-scientific practices that are inevitable given common-sense thinking is so fallible.¹² It was scientific findings and well-founded theory that ultimately led people to reject bloodletting as a cure-all for innumerable ailments.

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Ethno Epistemics raise difficult questions about which, if any, warrant parity with science and how, if accepted uncritically, to reconcile inevitable contradictions among themselves and with established science. Incompatible epistemologies will preclude resolution about such contentious claims as that Maori ancestors discovered Antarctica or Muslims from Africa reached America long before Columbus.¹³

Instead, legitimizing these other ways of knowing will make more likely intractable positions like those held by an Indigenous archeologist, as reported way back in 1996 in *The New York Times*: “There’s a real feeling that we’ve been here forever ... The Bering Strait theory makes logical sense, but ... the traditional belief ... comes first.”¹⁴ Most faith-based epistemics already entail such narratives about the origins of the universe and its peoples that contradict one another and science, a conflict that rages still today, albeit largely outside universities until now.

Imagine the chaos in all aspects of science, including classrooms, if diverse Ethno Epistemic sources are deemed equivalent to science, and the vociferous attacks by outside political or public forces that could follow rejection of “alternative” sources they deem credible. Rather than scientific citations in student assignments, instructors could face religious and other disputable sources about the age of the earth. Such concerns are not hypothetical. In 2025, a University of Oklahoma student pleaded religious discrimination when her paper on gender for a psychology course received a grade of 0. According to the instructor, she only expressed personal opinions based on her understanding of God’s will and failed to review a scientific paper as required. A highly politicized furor resulted.¹⁵

SCIENCE HAS UNIFIED DIVERSE PEOPLES THROUGH AN APPRECIATION OF ITS BENEFITS AND ITS INCLUSIVE PERSPECTIVE ON THE NATURAL WORLD FREE OF CULTURAL CONSTRAINTS.

Supporters of science cannot ignore such external forces, including political leaders who disparage expertise and question scientific findings that contradict their ideologies. As noted, proponents think of Ethno Epistemics as liberating peoples from the hegemony of science, but as historian of science Meera Nanda observed over 20 years ago, “reactionary political groups are redefining science to fit their agenda.”¹⁶ Claiming a culture-specific “science” promotes nationalist pride, even if unwarranted. Turkish president Recep Erdogan endorses creationism and Islamic faith-based post-secondary institutions. Politicians in India mandate university programs in astrology to further a Hindu nationalistic agenda with uncertain consequences for personal liberties, including religion. All buttressed by congenial epistemologies.

To be clear, recent claims about culture-specific “ways of knowing” are distinct from traditional knowledge based on years and often generations of observations about the world, much of which merits respect within academia and provides a foundation on which science can build. Inspired by traditional herbal medicine and ancient literature, for example, scientist Tu Youyou was awarded a Nobel Prize for isolating the compound Artemisinin from the sweet wormwood plant. It is now used to treat Malaria, saving countless lives. And Ethno Epistemic epistemological claims likewise deserve attention in relevant disciplines, including history and philosophy of science.

Although precursors of science, however, traditional knowledge and epistemologies should not be conflated with contemporary science, a universal way to validate beliefs about nature and, notably, to reveal its underlying mechanisms. Ever since its inception from multiple cultural roots, science has unified diverse peoples through an appreciation of its benefits and its inclusive perspective on the natural world free of cultural constraints.

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MEMBER DISCUSSION

1 COMMENT

