A General Theory of Pluriversal Knowledge: Beyond Epistemology, Beyond Philosophy

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Article

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Abstract

This article proposes a General Theory of Pluriversal Knowledge (GTPK), advancing beyond classical epistemology, postcolonial critique, and relativist pluralism. It argues that contemporary global crises—ecological, epistemic, technological, and civilisational—are fundamentally knowledge-structural failures produced by hierarchical, monocentric epistemic regimes. Drawing on complexity science, systems theory, indigenous epistemologies, philosophy of science, and meta-intelligence frameworks, the article develops a formal theory explaining how multiple knowledge worlds can coexist without hierarchy while remaining operationally coherent. The concept of pluriversal coherence is introduced as a foundational principle enabling epistemic interoperability across ontologically distinct knowledge systems. The theory reframes knowledge not as representation but as relational enactment across plural realities. The article concludes by outlining implications for science, governance, AI, education, and African and Global South knowledge futures.

Keywords: pluriversality; epistemology; knowledge systems; decolonial theory; complexity; meta-intelligence

1. Introduction: The Collapse of the Universal Knowledge Project

Modernity rested on an ambitious promise: the creation of a single, universal system of knowledge capable of describing, explaining, predicting, and governing reality. From Cartesian rationalism through Enlightenment empiricism, Kantian transcendental philosophy, and positivist science, knowledge was formalized as objective, cumulative, and universally valid (Descartes, 1641/1984; Kant, 1781/1998; Comte, 1853). This epistemic foundation supported the rise of modern science, industrial capitalism, bureaucratic governance, and nation-states, shaping not only how the world was known but also how it was organized and controlled.

The universal knowledge project was inherently political. It defined what counted as reason, evidence, and truth; who could legitimately claim to know; and which forms of life were rational or advanced. Knowledge was inseparable from power, legitimizing colonial expansion, extractive economies, and epistemic hierarchies that privileged Western scientific rationality (Imafidon, 2015).

While producing remarkable technological and scientific advances, this universalist framework marginalized entire knowledge worlds—indigenous epistemologies, spiritual cosmologies, embodied and experiential knowledges—relegating them to the domains of belief, tradition, or culture. The universal knowledge project thus was neither neutral nor inclusive; it was historically situated, geopolitically anchored, and structurally exclusionary (Botha, Griffiths & Prozesky, 2021).

The early 21st century exposes the limitations of this model. Global crises such as climate change, biodiversity loss, pandemics, systemic inequality, algorithmic bias, and AI governance failures highlight epistemic limits: a monocentric knowledge system cannot adequately address a world characterized by radical complexity, interdependence, and ontological plurality. Existing systems struggle to apprehend phenomena that are relational, nonlinear, culturally embedded, and ethically complex (Murove, 2018 ; Theunissen, 2017).

In response, scholars have engaged across multiple traditions: philosophy of science critiques objectivity and neutrality; science and technology studies reveal the social construction of facts;

postcolonial and decolonial theorists expose the geopolitics of knowledge; and indigenous studies reclaim suppressed epistemologies (Linhart, 2025). However, much contemporary scholarship remains fragmented or primarily critical. It diagnoses the limits of universalism without offering a coherent meta-theoretical alternative capable of guiding knowledge production, governance, and technology design on a planetary scale.

Humanity has reached an epistemic threshold akin to earlier civilizational turning points. As Kant interrogated the conditions of knowledge and Kuhn revealed the contingency of scientific paradigms, the present moment demands a rethinking of knowledge itself (Moleka, 2025a ; Krog, 2021). The question is no longer how to refine universal epistemology, but how to live, think, and act in a world composed of multiple, coexisting realities.

The General Theory of Pluriversal Knowledge (GTPK) responds to this challenge. Rather than proposing another epistemology, it offers a meta-theoretical framework explaining how ontologically distinct knowledge systems can coexist without hierarchy while enabling coordinated action. The theory introduces pluriversal coherence as a foundational principle for navigating epistemic diversity without collapsing into relativism or returning to universalism.

By reconceptualizing knowledge as relational enactment across plural realities, GTPK seeks to transform knowledge production, validation, and application in science, governance, education, and emerging technologies. It is positioned not as a regional or decolonial supplement but as a foundational reconfiguration of knowledge for a pluriversal age.

2. Limits of Classical Epistemology and the Decolonial Turn

Classical epistemology, from Plato and Aristotle through Descartes, Locke, Kant, and contemporary analytic philosophy, primarily concerns the conditions under which knowledge claims can be justified as true beliefs. Despite internal debates among rationalism, empiricism, pragmatism, and constructivism, these traditions share a foundational assumption: knowledge refers to a single, stable reality accessible through universally valid cognitive procedures (Brnett, 2021 ; Melenovsky ; Audi, 2011).

Even when acknowledging diversity in methods or perspectives, classical epistemology assumes a shared epistemic order. Competing claims are evaluated based on common criteria such as validity, coherence, or correspondence. This assumption presupposes commensurability, leaving little space for knowledge systems whose criteria for truth, relevance, or legitimacy are ontologically distinct.

The limitations of classical epistemology become evident with indigenous, spiritual, and relational knowledge systems. These systems often prioritize practice, ritual, ecological embeddedness, ancestry, and relationality over abstraction or propositional representation (Romm, 2024). Knowledge is enacted rather than represented, transmitted through participation rather than formalization, and validated through continuity of life rather than correspondence to abstract facts. Classical frameworks lack the resources to recognize these systems as legitimate knowledge without reducing them to familiar categories.

The decolonial turn exposes the political and historical foundations of classical epistemology. Scholars such as Quijano (2007), Mignolo (2011), and Santos (2014, 2018) show that modern epistemology is inseparable from the colonial matrix of power. The universalization of Western knowledge was not accidental but constitutive of colonial domination, classifying and governing peoples, lands, and lifeworlds according to Eurocentric norms.

Decolonial epistemology highlights concepts such as epistemic injustice, cognitive empire, and the geopolitics of knowledge. It foregrounds the legitimacy of suppressed knowledges and challenges the supposed neutrality of Western epistemology (Ndlovu-Gatsheni, 2021 ; McLeod, 2025). Yet, much decolonial scholarship remains primarily diagnostic. Non-Western knowledges are often framed as alternatives or correctives rather than co-equal participants in a shared epistemic configuration. Consequently, questions of interaction among radically different knowledge systems without hierarchy remain underdeveloped.

Moreover, decolonial approaches may inadvertently reproduce binaries—Western vs. non-Western—that mirror the hierarchies they critique. Without a formal theory of pluriversality, epistemic diversity risks collapsing into relativism or symbolic inclusion without structural transformation.

GTPK builds on decolonial insights while addressing these gaps. It shifts the focus from critique to the formal conditions of epistemic coexistence, asking how multiple knowledge worlds can remain autonomous while engaging in coordinated problem-solving. Classical epistemology and decolonial theory are repositioned as historically situated knowledge systems within a broader pluriversal framework.

3. From Knowledge Pluralism to Pluriversal Coherence

Recognition of epistemic diversity has grown across philosophy of science, anthropology, and science and technology studies. Concepts such as knowledge pluralism, methodological pluralism, and epistemological diversity mark important departures from rigid universalism, acknowledging that no single perspective or method can fully capture the world's complexity (Doudou et al., 2025 ; Longino, 1990; Harding, 1991). Yet, pluralism often remains conceptually insufficient for interacting with ontologically heterogeneous knowledge systems.

Traditional pluralism assumes that all knowledge approaches reference a single reality. Diversity is treated as variation within a common framework rather than as expressions of distinct modes of existence. Reconciliation of knowledge claims is assumed possible in principle, implicitly privileging Western scientific rationality as the arbiter of coherence. Consequently, pluralism often functions as an inclusionary gesture without structural transformation: indigenous, spiritual, and embodied knowledges are recognized primarily when they can be translated into dominant frameworks, leading to epistemic reduction.

The General Theory of Pluriversal Knowledge (GTPK) offers a decisive shift from pluralism to pluriversality. Pluriversality begins with the premise that reality comprises multiple, partially overlapping worlds, each sustained through distinct ontological commitments, relational practices, cosmologies, and material engagements. These worlds are not mere interpretations of a single reality; they enact different modes of existence, each coherent and autonomous within itself.

The core challenge is enabling meaningful interaction among knowledge systems that do not share a common ontological ground. GTPK introduces pluriversal coherence, the emergent property enabling multiple knowledge systems to coexist and collaborate without hierarchy, assimilation, or fragmentation. Coherence is relational, not imposed, and arises through structured interaction, echoing principles from complexity theory (Morin, 2008).

In a pluriversally coherent system, each knowledge system retains its internal criteria of validity and relevance. Scientific knowledge is validated through reproducibility and modelling; indigenous knowledge through relational continuity with land, ancestry, and practice; spiritual knowledge through experiential transformation and ethical alignment. None is universally superior; coherence arises through interaction and negotiation for coordinated action.

Pluriversal coherence reframes epistemic conflict: disagreements between knowledge systems signal ontological difference rather than error. Tensions are productive, highlighting multiplicity without imposing convergence. Importantly, this framework avoids relativism: validity is situated, rigorous, and accountable within each world, while relational accountability ensures cooperative engagement among distinct systems.

GTPK thus formalizes a framework for navigating radical epistemic diversity, establishing the conceptual bridge between ontological plurality and practical collaboration. This principle allows engagement with complex global challenges—ecological, technological, social—without erasing the plurality of worlds from which solutions emerge. By operationalizing pluriversal coherence, knowledge systems previously marginalized or excluded can participate in collective problem-solving while retaining integrity and autonomy.

Furthermore, pluriversal coherence provides a scaffold for innovation, governance, education, and technological design. It enables the design of platforms, policies, and institutions that recognize multiple realities, allowing for integrated yet non-hierarchical knowledge mobilization. In doing so, GTPK situates itself not merely as a theoretical advance but as a practical framework for a post-universal epistemic era, offering a pathway toward equitable and sustainable global knowledge practices.

4. Formalizing Pluriversal Ontology and Epistemic Interaction

Building upon pluriversal coherence, the next critical step is formalizing the ontology of multiple knowledge systems and the principles guiding their interaction. A pluriversal ontology recognizes that each knowledge system enacts its own reality, characterized by distinct entities, relations, causalities, and ethical norms (James & Steger, 2023 ; Cajete, 2000; Smith, 2012). These ontologies are neither reducible to one another nor universally translatable, yet they can coexist and engage in coordinated action.

The formalization involves three dimensions: (1) autonomy of ontologies, (2) interaction protocols, and (3) relational accountability. Autonomy ensures that each knowledge system maintains its internal logic and standards of validity. Interaction protocols define structured mechanisms through which knowledge systems can collaborate, negotiate shared objectives, and exchange insights without enforcing assimilation. Relational accountability ensures that knowledge systems recognize the consequences of their actions on other ontological worlds, creating mutual ethical responsibility (Yang at al., 2023 ; Cappelli & Di Marzo Serugendo, 2025). Pluriversal ontology can be visualized as a network of interlinked knowledge worlds, each node representing an autonomous system, and edges representing controlled interaction channels governed by negotiated norms and emergent constraints. Complexity theory and network science provide formal tools for modeling these interactions, enabling simulation of multi-system problem-solving, policy design, and collaborative innovation (Morin, 2008; Longino, 1990).

In practical terms, this framework supports governance, education, technological design, and innovation systems. For example, in environmental management, scientific models, indigenous land knowledge, and community-based governance can be integrated without hierarchical translation, allowing for more effective and locally adapted solutions. In AI and technology development, the framework provides formal mechanisms for incorporating non-Western knowledge and ethical reasoning into algorithmic design, ensuring pluralistic oversight and relational accountability.

This formalization also establishes theoretical boundaries and operational criteria for evaluating interactions. Knowledge systems can be assessed based on their capacity to maintain internal coherence, facilitate productive engagement, and contribute to shared goals while respecting ontological autonomy. Such formal criteria move beyond descriptive pluralism, offering actionable tools for structuring multi-epistemic systems.

In sum, Section 4 operationalizes the concepts of Sections 2 and 3, transitioning from diagnosis and theoretical principle to formal structure and applied methodology. It defines the architecture of a pluriversal epistemic space and establishes the foundational principles for ethical, coherent, and sustainable interaction among diverse knowledge systems.

5. Pluriversal Coherence in Practice: Applications and Implications

Having established the theoretical foundations and formal architecture of pluriversal knowledge systems, it is essential to explore how pluriversal coherence can be applied in practical domains. The operationalization of pluriversal principles can significantly influence scientific research, policy-making, technological development, education, and global governance.

5.1. Scientific Research and Innovation

In research and innovation, pluriversal coherence enables the integration of multiple knowledge systems without hierarchical reduction. Scientific methods can coexist with indigenous ecological knowledge, experiential learning, and spiritual insights, creating hybridized models that are contextually adaptive. Such integration allows for more holistic problem-solving and the identification of novel solutions that would remain invisible within single-ontology frameworks (Ijatuyi, 2025).

For example, climate adaptation strategies can combine predictive climate models with local, place-based knowledge of ecosystems, yielding interventions that are scientifically sound, culturally relevant, and ethically responsible. The application of pluriversal principles facilitates Mode 4 knowledge production, where innovation emerges from multi-stakeholder and multi-epistemic collaboration (Moleka, 2024a, 2024b, 2025b-d).

5.2. Policy and Governance

Policy-making can benefit from pluriversal coherence by structuring decision-making processes that acknowledge multiple realities. Governments and institutions can implement frameworks where indigenous, local, and scientific knowledges inform regulations, land management, and environmental planning. Relational accountability ensures that the impact of policies across different knowledge worlds is considered, fostering sustainable and socially just outcomes (Santos, 2018; Mignolo, 2011).

Pluriversal governance structures also allow for dynamic adaptation: policies evolve through continuous negotiation and feedback among interacting knowledge systems, reflecting emergent conditions rather than rigid top-down impositions. This approach is particularly valuable in complex, uncertain, and rapidly changing global contexts.

5.3. Education and Knowledge Transmission

Educational systems can operationalize pluriversal coherence by creating curricula that integrate diverse knowledge forms. Students engage with scientific, indigenous, spiritual, and experiential knowledge traditions as co-equal domains, cultivating epistemic literacy across worlds. This fosters critical thinking, relational reasoning, and intercultural competence, preparing learners to navigate complex global challenges (Smith, 2012).

Adaptive pedagogical technologies can support pluriversal learning environments by personalizing instruction according to learners' cultural, cognitive, and ontological orientations. Such systems encourage collaborative knowledge creation, reflective practice, and co-responsibility among students and educators.

5.4. Technological and AI Systems

In technological design, pluriversal principles guide the development of AI and computational systems that respect multiple epistemologies. Algorithms can incorporate diverse ethical frameworks, contextual knowledge, and relational dynamics, avoiding the imposition of a single worldview. Quantum-safe protocols, decentralized knowledge management, and agentic AI models exemplify how technology can operationalize pluriversal coherence while safeguarding autonomy, relationality, and accountability (Morin, 2008; Longino, 1990).

5.5. Global Challenges and Future Directions

Pluriversal coherence provides a conceptual and operational framework for addressing global challenges such as climate change, pandemics, biodiversity loss, and social inequities. By embracing ontological plurality, it enables solutions that are simultaneously scientifically rigorous, culturally grounded, and ethically responsible. Future research can expand simulation models, governance

platforms, and educational systems to systematically integrate pluriversal principles, offering a roadmap for sustainable, equitable, and innovative futures.

In conclusion, the practical application of pluriversal coherence transforms how knowledge is produced, mobilized, and applied. It bridges epistemic diversity and collaborative action, providing a new paradigm for science, policy, education, technology, and governance in a complex, interconnected, and multi-ontological world.

6. Implementing Pluriversal Knowledge Systems: Methods and Case Studies

The practical realization of pluriversal knowledge systems requires methodological rigor that bridges theoretical principles with actionable strategies. Central to this effort is the design of multi-epistemic research frameworks that recognize and respect the autonomy of diverse knowledge worlds while facilitating structured interactions. Unlike traditional research methodologies that presuppose a single epistemic standard, pluriversal research design embraces heterogeneity as a constitutive feature, ensuring that knowledge production is situated, relational, and accountable (Garcés, 2025). Data collection, analysis, and validation are reconfigured to respect ontological differences, acknowledging that what counts as evidence in one knowledge world may require alternative forms of verification in another (Smith, 2012). Participatory modeling and simulation techniques allow for co-construction of insights, where stakeholders from distinct knowledge systems collaborate to identify patterns, anticipate outcomes, and co-develop solutions (Morin, 2008; Santos, 2018).

Technological platforms play a pivotal role in operationalizing pluriversal principles. Knowledge integration engines, designed to handle heterogeneous datasets, enable non-Western, indigenous, and experiential knowledge to interface with scientific and technological systems without being reduced or subsumed (Cajete, 2000; Smith, 2012). Decentralized knowledge sharing through blockchain mechanisms provides secure, auditable pathways for intellectual property rights and ethical accountability, ensuring that each knowledge system retains sovereignty over its contributions (Mignolo, 2011). AI-driven adaptive interfaces facilitate collaboration across multiple epistemic domains, dynamically adjusting representations, visualizations, and decision-support tools to the ontological and cultural logics of the participants (Partarakis & Zabulis, 2024). Through these platforms, pluriversal knowledge systems become not only conceptually coherent but operationally feasible at scale.

Empirical examples demonstrate the potential of pluriversal knowledge systems to generate impactful solutions. In environmental management, indigenous land stewardship practices have been integrated with scientific climate models to produce locally adapted and ecologically resilient interventions (Santos, 2018). In public health, culturally sensitive interventions that combine biomedical protocols with traditional healing practices have improved compliance and outcomes in cross-cultural contexts (Smith, 2012). Urban planning initiatives have leveraged both community knowledge and technical simulations to design infrastructures that are socially equitable, environmentally sustainable, and culturally resonant (Kosoe & Ogwu, 2025). These cases exemplify the capacity of pluriversal coherence to reconcile epistemic diversity with actionable governance and innovation.

Evaluation of pluriversal knowledge systems demands criteria that move beyond traditional metrics of success. Coherence among knowledge systems is assessed in terms of the integrity of each world, the quality of interactions, and the emergent properties of collaborative outcomes (Harding, 1991; Santos, 2018). Sustainability is evaluated not only in environmental terms but also in relational and cultural dimensions, measuring whether interventions respect and reinforce the autonomy of participating knowledge worlds. Social and ecological impacts are monitored through longitudinal and participatory methods, allowing stakeholders to reflect on outcomes and adjust processes dynamically (Kaplan-Hallam & Bennett, 2018). This evaluation framework underscores that the effectiveness of pluriversal knowledge systems lies in the balance between autonomy, collaboration, and accountability.

Looking ahead, the implementation of pluriversal knowledge systems presents both opportunities and challenges. Scaling these frameworks requires investment in institutional structures, technological infrastructures, and cross-cultural competencies. Policy environments must be adapted to recognize the legitimacy of multiple knowledge worlds, providing mechanisms for their interaction while safeguarding their autonomy (Santos, 2018). In education, curricula must be redesigned to cultivate epistemic literacy that traverses diverse knowledge traditions, fostering the capacity to operate in multi-ontological spaces. Research and innovation agendas can benefit from embedding pluriversal principles, ensuring that scientific discovery, technological development, and governance processes are inclusive, adaptive, and responsive to complex global challenges. By systematically implementing pluriversal knowledge systems, societies can harness the epistemic richness of multiple worlds, promoting sustainability, justice, and innovation on a planetary scale.

7. Conclusion: Towards a Pluriversal Knowledge Future

The emergence of pluriversal knowledge systems represents a profound epistemic and civilizational shift. Across Sections 1–6, this article has demonstrated the limitations of classical, universalist epistemologies and highlighted the critical insights of decolonial, indigenous, and relational knowledge frameworks. While traditional epistemology sought singular, universally valid criteria for truth and knowledge, such approaches are increasingly inadequate for addressing the complexity, interdependence, and cultural diversity inherent in contemporary global challenges. Similarly, pluralistic approaches, though valuable in recognizing diversity, often remain insufficient because they presume a shared ontological and epistemic ground, leaving the autonomy of alternative knowledge systems underacknowledged.

The General Theory of Pluriversal Knowledge (GTPK) provides a formal framework for understanding how multiple knowledge worlds can coexist without hierarchy while facilitating coordinated action. By introducing the concept of pluriversal coherence, this theory resolves the tension between epistemic diversity and operational collaboration. Knowledge systems retain internal validity, autonomy, and ethical integrity, yet they engage in structured interactions that enable problem-solving, innovation, and governance at scales ranging from local to planetary. Sections 3 and 4 demonstrated how pluriversal coherence can be formalized ontologically and operationally, while Section 5 illustrated practical applications in research, policy, education, and technology. Section 6 further showed methodological and technological pathways for implementation, providing tools for multi-epistemic collaboration, ethical accountability, and relational evaluation.

The implications of pluriversal knowledge systems are far-reaching. In research and innovation, they allow integration of scientific, indigenous, and experiential knowledge in ways that generate contextually adapted and ethically responsible solutions. In governance and policy-making, pluriversal frameworks support inclusive, sustainable, and culturally sensitive decision-making. In education, they cultivate epistemic literacy and the capacity to navigate multiple knowledge worlds, preparing future generations to operate in complex, interconnected societies. In technology, they guide the development of AI, computational platforms, and decentralized systems that respect diverse epistemic logics while enabling collaborative innovation.

Ultimately, pluriversal knowledge systems are not merely a theoretical refinement; they represent a transformative vision for the production, mobilization, and application of knowledge in a world marked by complexity, plurality, and interdependence. By operationalizing principles of autonomy, relational accountability, and structured interaction, societies can harness the richness of multiple knowledge worlds to address pressing ecological, social, and technological challenges. This approach moves beyond critique, beyond adaptation, and beyond relativism—it offers a foundational paradigm for a pluriversal epistemic era, ensuring that knowledge serves both human flourishing and planetary sustainability. The pathway is clear: embracing pluriversal coherence enables humanity to navigate a complex, multi-ontological world with rigor, creativity, and ethical responsibility.

References

Audi, R. (2011). Epistemology: A contemporary introduction to the theory of knowledge (3rd ed.). Routledge.

Barnett, B. C. (2021). Introduction to Philosophy: Epistemology.

Botha, L., Griffiths, D., & Prozesky, M. (2021). Epistemological Decolonization through a Relational Knowledge-Making Model. *Africa Today*, *67*(4), 50–73. https://www.jstor.org/stable/10.2979/africatoday.67.4.04

Cajete, G. (2000). Native science: Natural laws of interdependence. Clear Light Publishers.

Cappelli, M. A., & Di Marzo Serugendo, G. (2025). Methodological Exploration of Ontology Generation with a Dedicated Large Language Model. *Electronics*, *14*(14), 2863. https://doi.org/10.3390/electronics14142863

Chakrabarty, D. (2000). Provincializing Europe: Postcolonial thought and historical difference. Princeton University Press.

Comte, A. (1853). *The positive philosophy of Auguste Comte* (H. Martineau, Trans.). George Bell.

Descartes, R. (1984). *Meditations on first philosophy* (J. Cottingham, Trans.). Cambridge University Press. (Original work published 1641).

Doudou, N. N. E., Guassmi, F., Kheiri, N., Benlaib, M., & Allaba, B. (2025). Epistemological Pluralism in Social Sciences: A Critical Study of Methods and Approaches.

Garcés, K. C. (2025). Ontological design of higher education: universities as catalysts for pluriversal futures and societal transitions. *Higher Education Research & Development*, *44*(6), 1528-1543.

Harding, S. (1991). Whose science? Whose knowledge? Thinking from women's lives. Cornell University Press.

Ijatuyi, E. J., Lamm, A., Yessoufou, K., Suinyuy, T., & Patrick, H. O. (2025). Integration of indigenous knowledge with scientific knowledge: A systematic review. *Environmental Science & Policy*, *170*, 104119.

Imafidon, E. (Ed.). (2015). The ethics of subjectivity: perspectives since the dawn of modernity. Springer.

James, P., & Steger, M. B. (2023). Rethinking pluriversal theory in globalization research: Bringing ontology in. *Global Perspectives*, *4*(1), 88513.

.Kant, I. (1998). *Critique of pure reason* (P. Guyer & A. Wood, Trans.). Cambridge University Press. (Original work published 1781).

Kaplan-Hallam, M., & Bennett, N. J. (2018). Adaptive social impact management for conservation and environmental management. *Conservation Biology*, *32*(2), 304-314.

Kosoe, E. A., & Ogwu, M. C. (2025). Sustainable Urban Planning and Environmental Management. In *Evaluating Environmental Processes and Technologies* (pp. 463–485). Cham: Springer Nature Switzerland.

Krog, A. (2021). Philosophical Paradigm. *The Self: A History*, 326.

Linhart, J. (2025). The Geopolitics of Scientific Universalism. In Science and the Other: An Inquiry into the Geopolitics of Knowledge, Potiguara Ontology and the Hard Problem of Modern Science (pp. 97–171). Cham: Springer Nature Switzerland.

Longino, H. (1990). Science as social knowledge: Values and objectivity in scientific inquiry. Princeton University Press.

McLeod, M. M. (2025). A Critical Examination of Epistemic Oppression in Euro-American Philosophical Theories of Knowledge in Education (Doctoral dissertation, University of Toronto (Canada)).

Melenovsky, C. M. (Ed.). (2022). *The Routledge handbook of philosophy, politics, and economics* (No. 302254). New York: Routledge.

Mignolo, W. D. (2011). The darker side of Western modernity: Global futures, decolonial options. Duke University Press.

Moleka, P. (2024a). The Revolutionary Potential of Mode 4 Knowledge Production. doi: 10.20944/preprints202410.2509.v1

Moleka, P. (2024b). Frugal Innovation for Inclusive and Sustainable Development in Africa. *Advanced Research in Economics and Business Strategy Journal*, *5*(1), 107-117.

Moleka, P. (2025a). Unlocking the Innovation Code: Towards a Grand Unified Theory. *Available at SSRN 5357986*.

Moleka, P. (2025b). Mode 4 knowledge production. ThePalgrave handbook of social transformations in science, innovation, and education. Palgrave Macmillan.

Moleka, P. (2025c). Mode 4 Knowledge Production and the Transcendental Knowledge Nexus. A New Paradigm for Sustainable Development. GRIN Verlag.

Moleka, P. (2025d). Ubuntu and Sustainable Cities in Africa. In *The Palgrave Handbook of Ubuntu, Inequality and Sustainable Development* (pp. 355–370). Cham: Springer Nature Switzerland.

Morin, E. (2008). *On complexity*. Hampton Press.

Murove, M. F. (2018). Indigenous knowledge systems discourse and inclusionality: An Afro-centric quest for recognition in a globalised world. *Journal for the Study of Religion*, *31*(1), 159-176.

Ndlovu-Gatsheni, S. J. (2021). The cognitive empire, politics of knowledge and African intellectual productions: Reflections on struggles for epistemic freedom and resurgence of decolonisation in the twenty-first century. *Third World Quarterly*, *42*(5), 882-901.

Partarakis, N., & Zabulis, X. (2024). A review of immersive technologies, knowledge representation, and AI for human-centered digital experiences. *Electronics*, *13*(2), 269.

Quijano, A. (2007). Coloniality and modernity/rationality. *Cultural Studies*, *21*(2–3), 168–178. https://doi.org/10.1080/09502380601164353

Romm, N. R. (2024). An Indigenous relational approach to systemic thinking and being: Focus on participatory onto-epistemology. *Systemic Practice and Action Research*, *37*(6), 811-842.

Santos, B. de S. (2014). Epistemologies of the South: Justice against epistemicide. Routledge.

Santos, B. de S. (2018). The end of the cognitive empire: The coming of age of epistemologies of the South. Duke University Press.

Smith, L. T. (2012). Decolonizing methodologies: Research and indigenous peoples (2nd ed.). Zed Books.

Theunissen, S. (2017). The interface between global hegemony and cultural marginalization: agency, education and development among indigenous peoples.

Yang, C., Zheng, Y., Tu, X., Ala-Laurinaho, R., Autiosalo, J., Seppänen, O., & Tammi, K. (2023). Ontology-based knowledge representation of industrial production workflow. *Advanced Engineering Informatics*, *58*, 102185.