

ALGORITHMIC EPISTEMIC DEPENDENCE: INTELLECTUAL VIRTUE AND THE CRISIS OF KNOWLEDGE IN THE AI ERA

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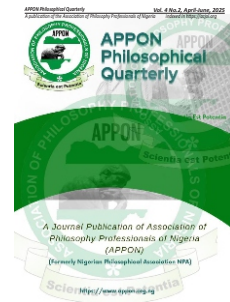
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ABSTRACT

The rapid integration of artificial intelligence into knowledge production has fundamentally altered the epistemic landscape, raising critical questions about the nature of knowledge and the role of the human knower. This paper examines the phenomenon of algorithmic epistemic dependence through the lens of virtue epistemology, arguing that increasing reliance on AI systems for idea generation, literature review and knowledge validation, risks undermining the intellectual virtues necessary for responsible inquiry. Drawing on contemporary discussions in AI ethics and epistemology, the study explores the limitations of AI as a non-epistemic agent lacking intentionality, understanding, and moral responsibility. It interrogates the emerging problem of epistemic circularity, wherein AI systems are used both to produce and to evaluate knowledge, thereby challenging traditional notions of epistemic authority and integrity. The paper argues that while AI offers significant benefits in efficiency and accessibility, its uncritical use has led to a decline in epistemic agency and intellectual responsibility. In response, it proposes a reconfiguration of AI's role as a supportive tool rather than a substitute for human cognition, alongside the cultivation of AI-mediated epistemic virtues such as critical vigilance and reflective awareness. By situating these issues within broader philosophical and cultural contexts, the study contributes to ongoing debates on the ethical and epistemological implications of AI in contemporary knowledge practices.

Keywords: Artificial Intelligence (AI), Virtue Epistemology, Algorithmic Epistemic Dependence, Intellectual Virtue, Epistemic Agency, Epistemic Identity

INTRODUCTION

Recent developments in artificial intelligence have fundamentally altered the conditions under which knowledge is produced, accessed, and even validated. From academic research to everyday

inquiry, AI systems now mediate the processes through which individuals encounter information and generate ideas. What once required extended engagement with texts, dialogue with peers, and sustained critical reflection can now be

initiated, refined, and even completed through interaction with artificial intelligence systems. This transformation raises urgent philosophical questions about the nature of knowledge itself and the character of those who claim to possess it.¹

Traditionally, epistemology has concerned itself with questions such as: What is knowledge? How is it acquired? What justifies belief? Within virtue epistemology, these questions are reframed to emphasise the role of the knower. Knowledge is not simply a product of correct reasoning or reliable processes, but of intellectual character. Epistemic virtues, such as honesty, diligence, open-mindedness, and intellectual humility, are cultivated dispositions that guide responsible inquiry and sustain the integrity of knowledge practices.² To know, in this sense, is not merely to arrive at truth but to do so in the right way. But the increasing integration of AI into epistemic practices complicates this framework. As Schuurman argues, artificial intelligence systems lack the necessary conditions for moral agency, namely control over their actions and awareness of what they are doing. These limitations extend into the epistemic domain. AI systems do not understand or take responsibility for their outputs; they process and generate information without possessing knowledge in any meaningful sense.³ Yet, despite this limitation, they are

increasingly treated as authoritative sources in research, writing, and evaluation.

This tension becomes particularly visible in contemporary academic practice. The initial impulse of many researchers is no longer to consult primary texts or engage colleagues, but to turn first to AI systems for idea generation and conceptual clarification. Literature reviews, once labour-intensive exercises in critical reading and synthesis, are now frequently delegated to algorithms capable of summarising large volumes of material within seconds. Even the verification of academic integrity, through plagiarism detection and authorship analysis, is often conducted by AI systems themselves. In effect, AI participates not only in the production of knowledge but also in its validation.⁴

This paper argues that such developments signal the emergence of what may be termed algorithmic epistemic dependence, a condition in which epistemic subjects increasingly rely on AI systems to perform core epistemic functions. Although this dependence offers undeniable benefits in efficiency and accessibility, it also poses a significant risk to the cultivation of epistemic virtue. When the processes of inquiry and reflection are outsourced to systems that lack genuine understanding, the habits that sustain intellectual rigour may be gradually eroded.⁵

Rather than rejecting AI, this paper

¹ Luciano Floridi, *The Logic of Information: A Theory of Philosophy as Conceptual Design* (Oxford: Oxford University Press, 2019): 3

² Linda Trinkaus Zagzebski, *Virtues of the Mind: An Inquiry into the Nature of Virtue and the Ethical Foundations of Knowledge*. (Cambridge: Cambridge University Press, 1996): 170.

³ Derek C. Schuurman, "Virtue and Artificial Intelligence." *Perspectives on Science and Christian Faith*, 75, no. 3 (2023): 158

⁴ Stuart Russell, and Peter Norvig. *Artificial Intelligence: A Modern Approach*. 4th Ed., (Pearson, 2021): 3.

⁵ Brent Daniel Mittelstadt, et al. "The Ethics of Algorithms: Mapping the Debate." *Big Data and Society*, vol. 3, no. 2, (2016): 4.

proposes a critical re-evaluation of its role within epistemic life. The goal is not to abandon technological assistance, but to ensure that it functions as a tool for the enhancement, not the replacement, of human intellectual virtue. In doing so, this study contributes to ongoing debates at the intersection of epistemology, ethics, and artificial intelligence by examining how the character of the knower is being reshaped in the age of intelligent machines.⁶

Virtue, Epistemology, and the Character of Knowing

The concept of virtue occupies a central place in ethics, particularly within the Aristotelian tradition, where it is understood as a stable disposition of character developed through habituation. Virtue is not innate but cultivated through repeated action, shaping not only what individuals do but who they become. While this framework originally emerged within moral philosophy, its extension into epistemology has given rise to virtue epistemology. This tradition emphasises the role of intellectual character in the acquisition and justification of knowledge.

Virtue epistemology shifts the focus from abstract conditions of knowledge, such as justified true belief, to the qualities of the knower. It argues that knowledge is not merely the possession of accurate information but the result of reliable and responsible intellectual conduct. Intellectual virtues, such as honesty, intellectual humility, open-mindedness, attentiveness, and perseverance, enable individuals to engage in inquiry in ways that are truth-

conducive.⁷ Conversely, epistemic vices, such as laziness, dogmatism, gullibility, and intellectual arrogance, undermine the integrity of knowledge practices. The framework of virtue epistemology is particularly relevant in contemporary contexts, where access to information is abundant even though the capacity to critically evaluate it is unevenly distributed. The emphasis on intellectual character highlights that the quality of knowledge is inseparable from the habits and dispositions that produce it. To possess adequate knowledge is not simply to arrive at correct conclusions, but to do so through processes that reflect intellectual virtue.

The emergence of artificial intelligence has introduced a significant disruption to this framework. AI systems now participate in tasks traditionally associated with human knowers: searching for information, summarising texts, generating arguments, and even evaluating the credibility of sources. This raises a fundamental question: if knowledge depends on the intellectual virtues of the knower, what happens when the processes of knowing are increasingly mediated by systems that lack such virtues?

Artificial Intelligence and the Limits of Agency

A critical starting point in addressing this question is the distinction between agency and instrumentality. As Schuurman argues, Artificial Intelligence systems cannot be considered moral agents because they lack two essential conditions: the control condition and the epistemic condition. The control condition requires that an agent has

⁶ Martin Frické, "Big Data and Its Epistemology." *Journal of the Association for Information Science and Technology*, vol. 66, no. 4, (2015): 653.

⁷ Linda Trinkaus Zagzebski, *Virtues of the Mind: An Inquiry into the Nature of Virtue and the Ethical Foundations of Knowledge*. (Cambridge: Cambridge University Press 1996): 168.

the capacity to choose between alternatives, while the epistemic condition requires awareness or understanding of one's actions. AI systems, which operate through algorithmic computation and pattern recognition, satisfy neither condition. These limitations are not merely ethical but epistemological. If knowledge presupposes understanding, intentionality, and responsibility, then AI systems cannot be said to possess knowledge. They do not know what they are doing; they generate outputs based on statistical correlations within data. Even highly sophisticated language models, which produce coherent and contextually appropriate responses, do so without comprehension.⁸ They simulate understanding without possessing it.

This distinction is crucial for evaluating the role of AI in epistemic practices. While AI can produce outputs that resemble knowledge, it does not participate in the normative dimensions of knowing. It cannot be intellectually virtuous or vicious because it lacks the capacity for intellectual responsibility. It cannot be careful, negligent, honest, or deceptive in any meaningful sense. These are attributes that apply only to agents capable of understanding and choice. Nevertheless, the increasing reliance on AI in knowledge production suggests that this distinction is often overlooked in practice. AI-generated content is frequently treated as authoritative, and its outputs are integrated into research and decision-making processes without sufficient scrutiny. This creates a tension between the philosophical understanding of knowledge and the practical realities of its

production in the age of AI.

Virtue-by-Proxy and Epistemic Mediation

AI is not epistemically neutral. Schuurman introduces the concept of "virtue-by-proxy" to describe how AI systems can exhibit behaviour that appears virtuous by reflecting the values embedded in their design.⁹ This concept can be extended into the epistemic domain as epistemic virtue-by-proxy, where AI systems mediate the intellectual virtues, or vices, of human agents.

This study adopts what may be termed an Epistemic Mediation Framework. Within this framework, AI is understood not as an autonomous epistemic agent, but as a mediating instrument through which human intellectual virtues, biases, intentions, and epistemic practices are transmitted, amplified, or distorted. The epistemic quality of AI outputs depends on the integrity of the data on which they are trained, the objectives encoded in their algorithms, and the intentions of their designers and users. For instance, an AI system trained on diverse and credible sources may promote epistemic virtues such as fairness and inclusivity. In contrast, one trained on biased or unreliable data may perpetuate epistemic injustice. Similarly, how users engage with AI, whether critically or passively, shape the epistemic outcomes of their interactions. This mediated structure complicates traditional accounts of knowledge, which assume a clear relationship between a knower and a known object. In the context of AI, knowledge production becomes a distributed process

⁸ Luciano Floridi, *The Logic of Information* (Oxford: Oxford University Press, 2019), 4.

⁹ Derek C. Schuurman, "Virtue and Artificial Intelligence," *Perspectives on Science and Christian Faith* 75, no. 3 (2023): 159.

involving multiple actors and systems. Responsibility is diffused across designers, developers, data curators, and users. As a result, it becomes increasingly difficult to attribute epistemic success or failure to a single agent.

From the perspective of virtue epistemology, this diffusion poses a significant challenge. If knowledge is tied to the intellectual character of the knower, then the fragmentation of epistemic responsibility undermines the very conditions under which knowledge can be meaningfully attributed. The question is no longer simply whether a belief is true or justified, but whether it has been formed through processes that reflect intellectual virtue, and who, if anyone is responsible for those processes.

Habit Formation and Algorithmic Epistemic Dependence

A key insight from Schuurman's analysis is that AI systems influence human behaviour through repeated nudges and recommendations. Although this was discussed in relation to moral behaviour, its implications for epistemology are significant. If intellectual virtues are developed through habitual practices, then incorporating AI into those practices will inevitably reshape our epistemic character.¹⁰

Traditionally, the cultivation of epistemic virtue has involved activities such as reading extensively, engaging in dialogue, critically evaluating sources, and reflecting on competing arguments. These practices require time, effort, and intellectual discipline. However, AI systems increasingly offer shortcuts that reduce the

need for such engagement. Summaries replace full texts, generated arguments replace original reasoning, and automated recommendations replace independent exploration. This shift gives rise to what may be termed algorithmic epistemic dependence: a condition in which individuals rely on AI systems to perform core epistemic functions. This dependence is not inherently detrimental; indeed, it can enhance efficiency and expand access to information. However, it also carries the risk of undermining the development of intellectual virtues. When individuals consistently rely on AI to perform tasks such as summarisation, synthesis, and evaluation, they may become less inclined to engage in these activities themselves. Over time, this can lead to the erosion of epistemic habits that are essential for responsible inquiry.¹¹ Intellectual laziness may replace diligence, passive acceptance may replace critical scrutiny, and speed may be prioritised over depth.

Importantly, this transformation is not merely individual but structural. As AI becomes embedded in educational systems, research practices, and institutional frameworks, algorithmic epistemic dependence may become normalised. Future knowers may inherit epistemic environments in which reliance on AI is not an exception but the default.

The Crisis of Epistemic Validation

The challenges posed by AI are even more intensified in the domain of epistemic validation. In contemporary academic and professional contexts, AI systems are increasingly used to assess the originality,

¹⁰ Derek C Schuurman, "Virtue and Artificial Intelligence.": 158.

¹¹ Derek C Schuurman, "Virtue and Artificial Intelligence.": 159.

credibility, and integrity of knowledge claims. Plagiarism detection tools, authorship verification systems, and credibility assessment algorithms are often powered by AI technologies similar to those used in content generation.

This situation presents a paradox: AI systems are tasked with evaluating outputs that may be generated or influenced by other AI systems. This results in a form of epistemic circularity, in which systems that lack genuine understanding are used to verify what constitutes understanding. Since algorithmic processes mediate both the creation and evaluation of content, the criteria for upholding epistemic integrity become increasingly ambiguous. From the perspective of virtue epistemology, this development is deeply problematic. Knowledge is not merely about producing correct outputs but about engaging in processes that reflect intellectual virtue. When these processes are obscured or outsourced, it becomes difficult to assess whether knowledge claims are genuinely justified.

Moreover, the reliance on AI for validation may create a false sense of epistemic security. The presence of an AI-generated “verification” may be taken as evidence of credibility, even when the underlying processes are flawed. This risks reinforcing epistemic complacency, where individuals trust systems without critically examining their limitations.

Reframing AI: From Epistemic Replacement to Intellectual Amplification

In light of these challenges, it is necessary to reconsider the role of AI within epistemic practices. Rather than viewing AI as a replacement for human knowing, it is more

appropriate to understand it as a tool for intellectual amplification. This perspective aligns with the view that technology should enhance, rather than diminish, human capacities. The goal, therefore, is not to create systems that function as independent knowers, but to design and use AI in ways that support the cultivation of epistemic virtue. This requires a deliberate effort to maintain active engagement in the processes of inquiry, even when assisted by AI. Users must remain critically involved in evaluating AI outputs, cross-checking information, and reflecting on the reliability of sources.

At the same time, designers and developers bear responsibility for creating systems that promote epistemic integrity. This includes addressing issues of bias, transparency, and accountability, as well as designing interfaces that encourage critical engagement rather than passive consumption. Ultimately, the challenge is not to resist the integration of AI into epistemic life, but to ensure that this integration does not come at the expense of intellectual virtue. The preservation of rigorous knowledge practices in the age of AI depends on the ability to balance technological efficiency with human responsibility.

Discussion

The foregoing reveals that the integration of artificial intelligence into epistemic practices is not merely a technological development but a transformation with deep philosophical implications. At the centre of this transformation lies a tension between efficiency and epistemic virtue, between the expansion of access to knowledge and the erosion of the intellectual character required to responsibly engage with it.¹² This tension

¹² Linda Trinkaus Zagzebski, *Virtues of the Mind: An Inquiry into the Nature of Virtue and the Ethical Foundations of Knowledge*. (Cambridge: Cambridge University Press, 1996): 185

demands a more critical examination of how AI is reshaping not only what we know, but how we come to know; and, crucially, who we become in the process.

One of the most pressing concerns emerging from this study is the gradual displacement of epistemic agency; traditionally, the acquisition of knowledge has been understood as an active process involving inquiry, doubt, interpretation, and justification. These processes are not merely instrumental; they are formative. They cultivate intellectual virtues such as patience, diligence, and critical reflection. However, the role of the human knower risks becoming increasingly passive when AI systems assume responsibility for key epistemic tasks, idea generation, summarisation, and literature synthesis.¹³ The danger here is not simply that individuals use AI, but that they begin to defer to it uncritically, thereby weakening the very faculties that epistemology seeks to cultivate. This condition, described in this paper as algorithmic epistemic dependence, raises an important normative question: Can knowledge still be considered epistemically virtuous if the processes that produce it are outsourced to non-epistemic agents? From the standpoint of virtue epistemology, the answer is not straightforward. While outputs generated with the assistance of AI may be accurate or useful, the absence of active intellectual engagement calls into question whether such outputs qualify as knowledge in the fullest sense. Knowledge, within this framework, is not merely about arriving at true beliefs, but about arriving at them through intellectually virtuous means. If the process is compromised, the epistemic

status of the outcome becomes equally uncertain.

Closely related to this concern is the phenomenon of epistemic circularity introduced by the use of AI in both the production and validation of knowledge. As noted earlier, AI systems are now frequently employed to generate academic content and subsequently to verify its originality and integrity. This creates a self-referential loop in which AI effectively evaluates outputs that may themselves be AI-assisted. The philosophical problem here is not simply technical, but epistemological: it challenges the independence and reliability of the standards used to adjudicate truth and originality.¹⁴

This raises a deeper issue about the nature of epistemic authority in the age of AI. Historically, epistemic authority has been grounded in human expertise, institutional credibility, and peer evaluation. These mechanisms, while imperfect, are rooted in shared norms of accountability and intellectual responsibility. By contrast, AI systems operate without intentionality, understanding, or moral accountability. As Schuurman emphasises, they lack awareness and control over their actions. Consequently, when such systems are positioned as arbiters of epistemic validity, whether through plagiarism detection or content evaluation, the foundation of epistemic authority becomes increasingly opaque and potentially unstable.

Furthermore, this shift has implications for the concept of intellectual integrity. Integrity, in the epistemic sense, involves a commitment to transparency, responsibility, and truth-seeking practices. However, when

¹³ Martin Frické, "Big Data and Its Epistemology." *Journal of the Association for Information Science and Technology*, vol. 66, no. 4, (2015): 654

¹⁴ Luciano Floridi, *The Logic of Information* (Oxford: Oxford University Press, 2019): 2.

AI tools mediate both the creation and assessment of knowledge, the line between authentic intellectual labour and algorithmically assisted output becomes blurred.¹⁵ This ambiguity risks normalising a form of epistemic disengagement in which the appearance of rigour substitutes for its actual practice. Importantly, this critique does not imply that AI must be excluded from epistemic life. On the contrary, the benefits of AI, speed, accessibility and the ability to process vast amounts of information are undeniable. The challenge, therefore, is not to reject AI but to reconfigure its role in a way that preserves and enhances human epistemic agency.¹⁶ This requires a shift from dependence to collaboration, such that AI functions as an aid to inquiry rather than a substitute for it.

Achieving a shift from algorithmic dependence to epistemic collaboration requires a deliberate reordering of inquiry. First, human cognition must precede AI use: initial ideas, research questions, and arguments should be independently formulated, even in preliminary or unpolished form, in order to preserve epistemic agency and intellectual ownership.¹⁷ Second, AI should be repositioned as a critical instrument, not a generative authority used to reveal conceptual gaps and refine arguments, not to produce them wholesale.¹⁸ Third, verification must remain human-led: AI-assisted outputs should be checked against

primary sources and supported by sustained engagement with scholarly texts, ensuring that understanding is not replaced by mere information retrieval.¹⁹ Finally, practices of epistemic transparency, which clearly disclose how and where AI has been used, help preserve accountability and reinforce the central role of the human knower in the production of knowledge.²⁰ Through these measures, AI functions as an aid to inquiry, while the cultivation of epistemic virtue remains firmly grounded in human intellectual responsibility.

In line with the above, this reconfiguration involves the intentional cultivation of what may be termed AI-mediated epistemic virtues. These include:

1. Critical vigilance: the ability to question and evaluate AI-generated outputs rather than accept them at face value.
2. Intellectual responsibility: a commitment to verifying information through independent sources and personal engagement.
3. Reflective awareness: an understanding of the limitations and biases inherent in AI systems.
4. Epistemic humility: recognising that reliance on AI does not equate to understanding.

These virtues do not emerge automatically

¹⁵ Mittelstadt, et al, "The Ethics of Algorithms: Mapping the Debate." (2016): 10.

¹⁶ Luciano Floridi, *The Logic of Information* (Oxford: Oxford University Press, 2019), 9.

¹⁷ Zagzebski, Linda Trinkaus. *Virtues of the Mind: An Inquiry into the Nature of Virtue and the Ethical Foundations of Knowledge*. (Cambridge: Cambridge University Press, 1996): 170.

¹⁸ Luciano Floridi, *The Logic of Information* (Oxford: Oxford University Press, 2019): 47.

¹⁹ Martin Frické, "Big Data and Its Epistemology." (2015): 654

²⁰ Mittelstadt, et al, "The Ethics of Algorithms: Mapping the Debate." (2016): 9-10

from the use of AI; they must be consciously developed and sustained. This is particularly important in academic contexts, where the pressures of productivity and efficiency may incentivise over-reliance on technological tools at the expense of intellectual depth.

Also, there is a need for institutional frameworks that support the ethical integration of AI into knowledge practices. Educational systems, for instance, must move beyond simply detecting AI use to fostering environments in which students and researchers are trained to engage with AI responsibly. This includes redefining assessment methods, encouraging collaborative inquiry, and emphasising the importance of process over mere output.

Recent African scholarship further reinforces the need for human-centred engagement with artificial intelligence. Lawrence Ogbu Ugwuanyi argues that the social value of AI lies not merely in automation, but in its capacity to advance human wellbeing, strengthen institutional accountability, and promote responsible governance within emerging technological societies.²¹ In African epistemological frameworks, knowledge is often understood as a relational and socially embedded practice. The increasing individualisation and automation of knowledge production through AI may therefore represent not only a technological shift, but a cultural one. This underscores the importance of developing context-sensitive approaches to AI ethics that account for diverse epistemic values and traditions. If AI is to contribute meaningfully to human flourishing, its role in knowledge production must likewise remain human-directed, transparent, and accountable. Otherwise, systems designed

to enhance human capacities may gradually erode the intellectual habits upon which responsible knowing depends.

In sum, the rise of artificial intelligence presents both an opportunity and a challenge for epistemology. While it has the potential to democratize access to knowledge, it also risks undermining the intellectual virtues that sustain meaningful inquiry. Addressing this tension requires a deliberate effort to preserve the knower's role as an active, responsible, and virtuous participant in the pursuit of knowledge. Only by doing so can we ensure that the age of AI remains not just an age of information, but an age of understanding.

Conclusion

This paper has examined the growing phenomenon of algorithmic epistemic dependence and its implications for intellectual virtue in the age of artificial intelligence. The study has argued that the challenge posed by AI is not merely technological but deeply philosophical. It concerns the transformation of the human knower; how knowledge is acquired, who is responsible for it, and whether the processes that produce it remain epistemically virtuous.

At the heart of the analysis lies a critical tension: while AI significantly enhances efficiency, accessibility, and the scope of inquiry, it simultaneously risks eroding the intellectual habits that sustain responsible knowledge production. The increasing tendency to outsource core epistemic activities, such as idea generation, literature synthesis, and even validation to AI systems, reflects a shift from active engagement to passive reliance. Furthermore, the paper has

²¹ Lawrence Ogbu Ugwuanyi, "Advancing (Human) Wellbeing through AI: The Nigerian Government Imperative," *APPON Philosophical Quarterly* 4, no. 1 (2025): 178.

highlighted the problem of epistemic circularity, particularly in cases where AI systems are used both to generate and to evaluate academic content. This self-referential dynamic challenges traditional notions of epistemic authority and integrity.

Be that as it may, this paper does not advocate rejecting AI. Rather, it calls for a reorientation of its role within epistemic practices. AI should be understood not as a replacement for human cognition, but as a tool that, when used appropriately, can enhance intellectual inquiry. The key lies in preserving the centrality of the human agent as an active participant in the process of knowing. This requires a deliberate commitment to cultivating epistemic virtues such as critical thinking, intellectual humility, diligence, and reflective awareness in AI-mediated environments. Importantly, the paper has also suggested that virtue epistemology must evolve to address the realities of the AI era. The emergence of AI-mediated epistemic practices calls for the development of new forms of intellectual virtue; virtues that are responsive to the challenges of interacting with non-epistemic agents. These include critical vigilance toward algorithmic outputs, responsibility in the use of technological tools, and an awareness of the limits of machine-generated knowledge. The age of AI compels a rethinking of what it means to know and to be a knower. The preservation of epistemic virtue in this new landscape is not guaranteed; it must be actively pursued. Only by maintaining a balance between technological innovation and human intellectual responsibility can we ensure that the pursuit of knowledge remains both meaningful and virtuous.

BIBLIOGRAPHY

- Aristotle. *Nicomachean Ethics*. Translated by Terence Irwin. 2nd ed. Indianapolis: Hackett Publishing Company, 1999. Originally published ca. 350 BCE.
- Bostrom, Nick. *Superintelligence: Paths, Dangers, Strategies*. Oxford: Oxford University Press, 2014.
- Fink, Alex. "Humanity in the Loop: Preserving Truth and Work in the AI Era." *CloudTweaks*, November 12, 2025. <https://cloudtweaks.com/2025/11/truth-and-work-ai-era/>
- Floridi, Luciano. *The Logic of Information: A Theory of Philosophy as Conceptual Design*. Oxford: Oxford University Press, 2019.
- Frické, Martin. "Big Data and Its Epistemology." *Journal of the Association for Information Science and Technology* 66, no. 4 (2015): 651–61.
- Goldman, Alvin I. *Knowledge in a Social World*. Oxford: Oxford University Press, 1999.
- Habermas, Jürgen. *The Theory of Communicative Action*. Boston: Beacon Press, 1984.
- Kidd, Ian James, José Medina, and Gaile Pohlhaus Jr., eds. *The Routledge Handbook of Epistemic Injustice*. New York: Routledge, 2017.
- Mittelstadt, Brent Daniel, Patrick Allo, Mariarosaria Taddeo, Sandra Wachter, and Luciano Floridi. "The Ethics of Algorithms: Mapping the Debate." *Big Data & Society* 3, no. 2 (2016). <https://doi.org/10.1177/2053951716679679>
- Russell, Stuart, and Peter Norvig. *Artificial Intelligence: A Modern Approach*. 4th

- ed. Hoboken, NJ: Pearson, 2021.
- Schuurman, Derek C. "Virtue and Artificial Intelligence." *Perspectives on Science and Christian Faith* 75, no. 3 (2023): 155–161.
- Strahovnik, Mateja Centa, and Vojko Strahovnik. "Talking and Thinking with AI: How AI Chatbots Restructure Epistemic Identity and Virtue." *AI and Ethics* (2023). <https://doi.org/10.1007/s43681-023-00348-8>.
- Ugwuanyi, Lawrence Ogbu. "Advancing (Human) Wellbeing Through AI: The Nigerian Government Imperative." *APPON Philosophical Quarterly* 4, no. 1 (2025): 173–183.
- Zagzebski, Linda Trinkaus. *Virtues of the Mind: An Inquiry into the Nature of Virtue and the Ethical Foundations of Knowledge*. Cambridge: Cambridge University Press, 1996.

