



Innovation:

The Journal of Knowledge Work, Creativity, and Organizational Advancement

eISSN: 3143-8210 (Online)

doi.org/10.70175/innovationjournal.2026

Volume 1 Issue 1 - September 2026

The Metacognitive Paradox of AI-Assisted Creativity: A Theoretical Extension

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Received March 1, 2026

Accepted for publication July 15, 2026

Published Early Access August 5, 2026

Abstract: *The rapid integration of large language models (LLMs) into organizational workflows raises fundamental questions about the long-term effects of AI assistance on human creative capabilities. This article provides a comprehensive theoretical extension of Sun et al.'s (2025) field experiment, which demonstrated that LLM assistance enhances creative output during use but diminishes subsequent independent creativity—particularly for individuals with lower metacognitive ability. We develop the metacognitive paradox framework to explain this phenomenon: AI tools designed to augment human creativity may inadvertently suppress the very cognitive processes that sustain independent creative capacity. Drawing on metacognition theory, cognitive offloading research, automation and human factors literatures, and the componential model of creativity, we articulate the mechanisms through which LLM assistance affects creative cognition, specify temporal dynamics and boundary conditions, and generate testable propositions for future research. We explicitly compare our framework against alternative theoretical explanations—including cognitive load theory, motivational accounts, and expertise development perspectives—and provide methodological guidance for testing our propositions. Our analysis reveals that the relationship between AI assistance and human creativity is neither uniformly beneficial nor detrimental but contingent upon individual metacognitive capabilities,*

patterns of tool use, task characteristics, and organizational context. We conclude with implications for theory, research methodology, organizational practice, and the ethical dimensions of AI-augmented work.

Keywords: *generative AI, creativity, metacognition, large language models, cognitive offloading, human-AI interaction, automation, field experiment*

doi.org/10.70175/innovationjournal.2026.1.1.1

Suggested Citation:

Westover, Jonathan H. (2026). The Metacognitive Paradox of AI-Assisted Creativity: A Theoretical Extension. *Innovation: The Journal of Knowledge Work, Creativity, and Organizational Advancement*, 1(1). doi.org/10.70175/innovationjournal.2026.1.1.1

The Burden of Knowledge and the Changing Landscape of Innovation: A Critical Analysis of Age and Great Invention

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Received March 20, 2026

Accepted for publication July 20, 2026

Published Early Access August 7, 2026

Abstract: *This article provides a comprehensive critical analysis of Benjamin F. Jones's influential work on age and great invention, which documents a significant secular trend toward older ages at which inventors make breakthrough contributions. Drawing on data from Nobel Prize winners and great inventors across the twentieth century, Jones finds that the mean age at great invention increased by approximately six years over this period, attributing this shift to the expanding "burden of knowledge." This article examines Jones's theoretical framework, empirical methodology, and the broader implications of his findings for innovation policy and economic growth. While acknowledging the paper's substantial contributions, this analysis identifies important limitations—including concerns about measurement validity, alternative causal interpretations, and the generalizability of findings—and engages with contradictory evidence that complicates the burden of knowledge narrative. The article situates Jones's work within broader literatures spanning economics, psychology, and the sociology of science, ultimately arguing that while the burden of knowledge hypothesis offers a compelling partial explanation*

for observed trends, the phenomenon is likely more complex and contingent than the original framework suggests.

Keywords: *innovation, age, burden of knowledge, human capital, economic growth, Nobel Prize, great inventors, technological change, specialization*

doi.org/10.70175/innovationjournal.2026.1.1.2

Suggested Citation:

Westover, Jonathan H. (2026). The Burden of Knowledge and the Changing Landscape of Innovation: A Critical Analysis of Age and Great Invention. *Innovation: The Journal of Knowledge Work, Creativity, and Organizational Advancement*, 1(1). doi.org/10.70175/innovationjournal.2026.1.1.2

Graph Thinking: Network Cognition and Strategic Leadership in AI-Enabled Organizations

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Received April 1, 2026

Accepted for publication August 2, 2026

Published Early Access August 10, 2026

Abstract: *Contemporary organizations function as complex networks, yet leadership cognition remains dominated by linear metaphors that assume sequential causality and hierarchical control. This article introduces Graph Thinking as a multi-dimensional leadership capability comprising cognitive, analytical, and behavioral components that enable leaders to perceive, analyze, and deliberately shape organizational network structures. We position Graph Thinking at the intersection of systems thinking, social network analysis, and ecosystem strategy, arguing that it synthesizes these traditions while extending them to address the specific challenges of artificial intelligence deployment. Drawing on network science and strategic management theory, we develop a multi-level framework specifying how Graph Thinking manifests at individual, organizational, and ecosystem levels, with explicit attention to network dynamics and temporal evolution. Through illustrative thought experiments spanning diverse organizational contexts, we demonstrate how network properties function as diagnostic instruments for strategic decision-making. We argue that AI integration creates conditions that may reward explicit network mapping, while acknowledging this relationship is contingent and politically contested. The article contributes to strategic management literature by specifying measurement approaches for future*

empirical research, addressing power dynamics inherent in network legibility efforts, and providing actionable developmental frameworks. We conclude with boundary conditions, limitations, and directions for empirical validation.

Keywords: *network thinking, strategic leadership, artificial intelligence, organizational networks, graph theory, digital transformation, ecosystem strategy, systems thinking*

doi.org/10.70175/innovationjournal.2026.1.1.3

Suggested Citation:

Westover, Jonathan H. (2026). Graph Thinking: Network Cognition and Strategic Leadership in AI-Enabled Organizations. *Innovation: The Journal of Knowledge Work, Creativity, and Organizational Advancement*, 1(1). doi.org/10.70175/innovationjournal.2026.1.1.3

Epistemic Transformations: Large Language Models and the Reconfiguration of Scholarly Knowledge Production

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Received April 15, 2026

Accepted for publication July 17, 2026

Published Early Access August 11, 2026

Abstract: *The rapid integration of Large Language Models (LLMs) into academic research practices presents significant opportunities and challenges that extend beyond questions of efficiency to fundamental reconfigurations of scholarly knowledge production itself. This article provides a comprehensive, interdisciplinary examination of how these artificial intelligence systems are reshaping research workflows, epistemic practices, and the very categories through which we understand scholarship. Drawing on Science and Technology Studies, philosophy of science, philosophy of mind, research ethics, and scholarship from diverse global contexts, the analysis situates LLM integration within broader debates about technological mediation in knowledge production while attending to how these technologies may transform the foundational concepts of authorship, originality, and expertise. The article examines empirical evidence regarding adoption patterns, critically assesses both benefits and risks—including concerns about epistemic quality, research integrity, equity, and the preservation of scholarly competencies—while engaging systematically with counterarguments and alternative perspectives. Particular*

attention is given to disciplinary variation through detailed case studies, global and linguistic dimensions drawing on non-Anglophone scholarship, and temporal dynamics of adoption. A multi-level framework for responsible integration is proposed, offering operationalized guidance for individual researchers, institutions, publishers, and policymakers, alongside examination of coordinated governance mechanisms. The framework addresses the fundamental tension between leveraging technological capabilities and maintaining the epistemic virtues that underpin trustworthy scholarship, while acknowledging that these very virtues may themselves be undergoing transformation. This analysis contributes to ongoing debates about the future of academic knowledge production by providing theoretically grounded, empirically informed, and practically oriented guidance for navigating this transformative technological moment.

Keywords: *artificial intelligence, large language models, scholarly communication, research ethics, academic writing, knowledge production, research integrity, epistemic cultures, epistemic justice, technological mediation*

doi.org/10.70175/innovationjournal.2026.1.1.4

Suggested Citation:

Westover, Jonathan H. (2026). Epistemic Transformations: Large Language Models and the Reconfiguration of Scholarly Knowledge Production. *Innovation: The Journal of Knowledge Work, Creativity, and Organizational Advancement*, 1(1). doi.org/10.70175/innovationjournal.2026.1.1.4