

**Correction to:**  
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**CORRECTION**

The following abstract was inadvertently omitted from the published version of the paleoabstracts for the Paleoanthropology Meetings in 2022 (<https://doi.org/10.48738/2022.iss1.109>).

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## **Passive Loss or Adaptive Simplification? An Optimal Transmission Framework for Investigating Lithic Technological Change**

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The optimal transmission framework is a new approach to integrating the tenets of human behavioral ecology and cultural evolutionary theory to investigate agency and optimality in the social transmission of lithic technologies. While advancement in technologies during the Pleistocene is largely rationalized as part of optimized behavioral adaptation (Rezek et al. 2018), loss in the record is often framed as a passive stochastic consequence (Lycett and Norton 2010). Yet, these changes are directional evolutionary transformations and both selective and stochastic processes should be equally considered. While the cultural transmission process is often overlooked in discussions of optimality (Pargeter et al. 2019), we view it as a critical area for the application of adaptive reasoning to further understand the mechanisms responsible for change in lithic technologies. The proposed framework utilizes cost-benefit models, a technology investment model based on the marginal value theorem, and fitness landscapes to explore time and risk management associated with the complexity of socially transmitted lithic production systems. This optimal transmission framework is contrasted with a null demographic model derived from traditional explanations for changes in lithic technologies. To highlight how optimal considerations of transmissibility may have affected the long-term evolution of lithic technologies, we apply this framework to archaeological case studies investigating the loss of lithic complexity across the Movius Line (*sensu lato*) and the retention of simplistic technology in an otherwise complex behavioral system during the peopling of Sahul. We propose that the purportedly simple lithic production in these cases can be seen as the result of risk minimization and time management strategies related to the social transmission process. Despite current empirical limitations, we believe that this framework provides theoretically informed and empirically testable hypotheses that we hope will encourage further research.

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