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Impacts of Drift and Population Bottlenecks on the Cultural Transmission of a Neutral Continuous Trait: An Agent Based Model

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#### ACCEPTED MANUSCRIPT

# Impacts of Drift and Population Bottlenecks on the Cultural Transmission of a Neutral Continuous Trait: An Agent Based Model

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**Abstract:** Although there is increasing interest in the connections between copying error and the generation of variation of continuous cultural traits, the complex interplay between forces of evolutionary drift and copying error in continuous traits remains under-examined. Here, an agent based model is provided that examines the effects of drift and population bottlenecks on the production of variation in a selectively neutral metric attribute under vertical, unbiased, and prestige biased modes of transmission. The provided model has implications for inferring demographic change or restricted forms of knowledge in the production of technologies.

**Key Words:** Cultural transmission, cultural drift, prestige bias, continuous cultural attributes, population bottlenecks, agent-based modeling

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