ABSTRACT SUBMISSION

Shifting Centralities in Southern Mesopotamia During the 3rd Millennium BCE

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Abstract

This paper revisits the settlement geography of the Mesopotamian alluvial plain during the 3rd millennium BCE in the light of new models for hydrographic transportation networks developed by the SNSF Sinergia project «Hydrography of Mesopotamia» (https://hymes.ch).
Given the over-all demand for access to fresh water in an arid climate and the well-documented river transport of goods in administrative cuneiform records of the 3rd millennium BCE, we propose that waterways and the transport principle, as defined by W. Christaller, dominated the spatial distribution of settlements and settlement hierarchies in southern Mesopotamia. Our hypothesis is tested against diachronic data on settlement occupation and size provided by regional surveys from the 1950s to the 1970s and more recent fieldwork in the alluvial plain, complemented by historical information on governmental, administrative, and religious centers.
To calculate the centrality of settlements and identify gateway communities within the hydrographic transportation network, we use spatial and formal network analysis, e.g., least cost path (LCP), traveling salesman problem (TSP), and network centrality measures.
By comparing chronologically sequenced models, we argue for a reciprocal effect of shifting river courses and settlement systems and an increasing anthropisation of the landscape towards the end of the 3rd millennium BCE.

Keywords

settlement geography, historic hydrography, hydrographic transportation network, centrality, gateway community

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