Using multi-criteria cost surface analysis to explore past regional landscapes: a case study of ritual activity and social interaction in Michigan, AD 1200-1600.

Meghan C.L. Howey

Abstract

Major advances have occurred in the analytical use of GIS in archaeology, particularly in uses of this tool for furthering understandings of past social landscapes. A major focus of these efforts has been visibility studies and archaeologists have paid less attention to how GIS can facilitate the study of another important socio-spatial component, movement. This paper examines the GIS application of multi-criteria cost surface analysis as a robust technique for modeling past movement and applies this approach to the Late Prehistoric period (ca. AD 1200-1600) in Michigan as a case study. This analysis extends understandings of the role of localized connections and tribal territoriality with the spread of maize agriculture in this period and adds further support.
territoriality with the spread of maize agriculture in this period and adds further support to the proposal that earthwork enclosures served as uniquely accessible ritual centers for social, economic and ideological interaction between separate tribal communities within the Late Prehistoric regional organization. By showing this technique can build on and validate models of past social developments, grant real insights into social connections and affiliations, and stimulate new directions for future research, this specific case illustrates the general heuristic value of multi-criteria cost surface analysis for exploring regional landscapes in archaeology.

Keywords
GIS; Cost surface analysis; Movement; Territory; Regional landscapes; Great lakes

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