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Abstract:	<p>This dissertation offers a new theoretical and methodological framework for understanding segregation in spatio-temporal terms as a separation of activity spaces, the spaces people move through as they go about their daily activities. The framework is a set of indexes with which multiple dimensions of activity-space segregation can be measured and compared across cities. The indexes are designed to capture socially relevant information about differences in the places people frequent, the people with whom they come into contact, and the nature of their movement. In designing the indexes, the dissertation extends the existing areal unit indexes of residential segregation, draws on an early formulation of White's spatial proximity index, and identifies existing measures of individual activity space from the geography and ecology literature. For each index, the dissertation develops an estimator that may be used to draw inferences from sample data, and it evaluates the performance of the estimator at different sample sizes and under different geographic and demographic conditions. To do this, it relies on a combination of high resolution activity-space trajectories collected from volunteers all over the world through a mobile phone application, and simulated trajectories of the full populations of two U.S. cities. The dissertation concludes that the proposed areal unit measures of activity-space segregation may be estimated with minimal bias using coarse trajectory data but require large samples of people and the implementation of a bootstrap bias correction technique. The proposed extension of White's spatial proximity index, on the other hand, may be estimated without bias using coarse trajectory data from relatively small samples of people. The proposed measures of individual activity spaces require high resolution trajectory data, but may be estimated without bias using relatively small samples of people.</p>
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