



Health geography

Towards a dynamic understanding of health and place through geotechnologies

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Research history

There is a long-standing interest in how people's health is shaped through the environment over and above individual-level factors such as genetic predisposition, lifestyles, and socio-demographics (Figure 1). These environmental exposures may trigger, reduce, or amplify the risk of suffering from illness.

It is traditionally assumed that the natural, built, and social environmental setting of the residential location and the surroundings within which people actually reside affect their health. The largely cross-sectional evidence on health-place associations is partly conflicting and challenged by the way how the geographic context is delineated, how the environmental exposure assessment was conducted, etc.



Figure 1: Health-environment interplay



Figure 2: Dynamic exposure assessments

Contribution to the urban geography section

A set of new hypotheses emerge as a consequence of rethinking space-time exposures. Such mobility-based (longitudinal) research designs put a strong emphasis on exposure duration, exposure sequences, and exposure accumulation (Figure 3). Hypotheses such as these cannot be addressed with traditional neighborhood-based research designs.

Research aim

My research questions such static and home-based environmental exposure assessments as they misleadingly assume that people do not move in space-time throughout a day (Figure 2A) and over their residential life course (Figure 2B).

I argue for a dynamic conceptualization of environmental exposures when exploring environment-health relations.

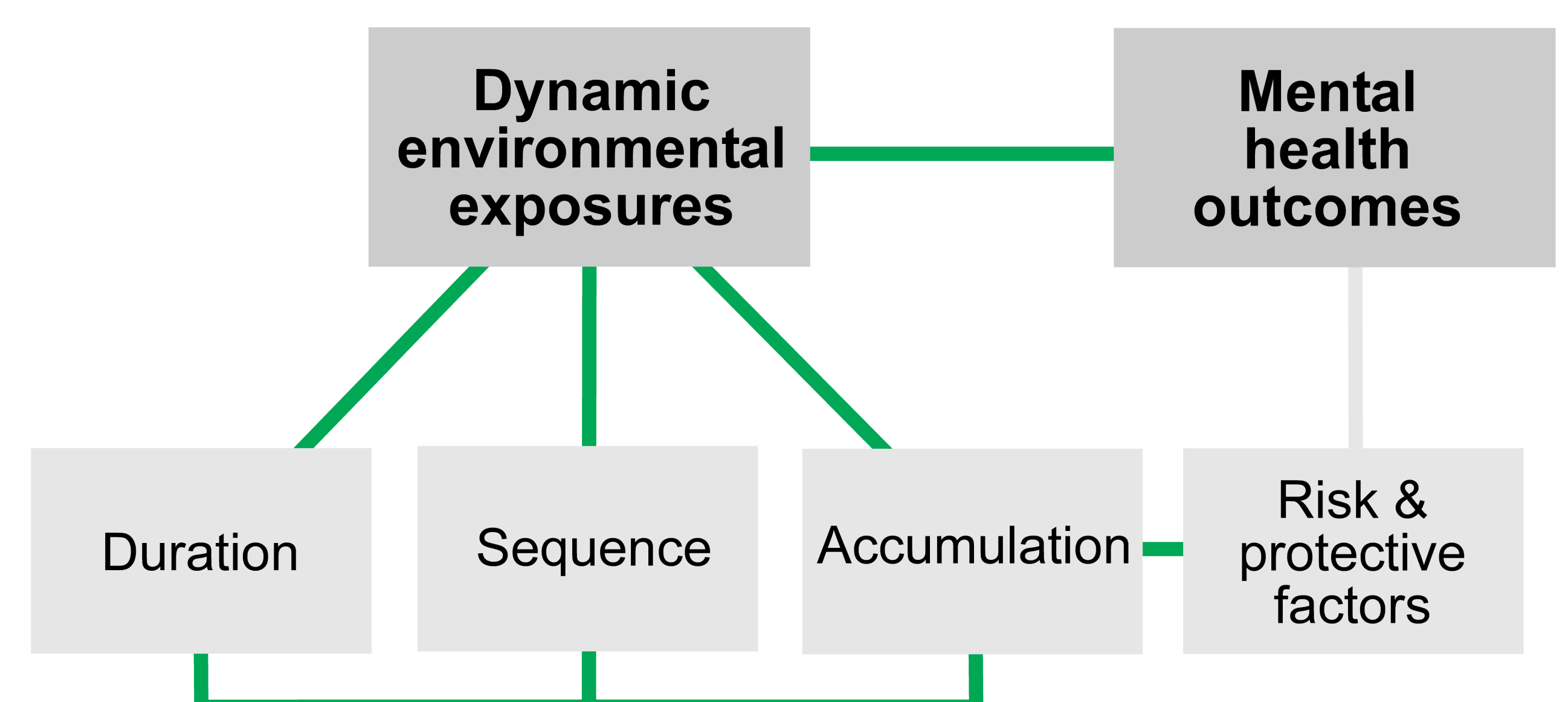


Figure 3: Mechanisms that explain dynamic environment–health associations

As the realization of dynamic environment-health research is a non-trivial task, it calls for the application of innovative methods (Figure 4). The methodological toolbox includes GIS, tracking technologies, machine learning models, and large national cohort studies through register linkages. Such research tasks can only be achieved through transdisciplinary efforts.



Figure 4: Geospatial toolbox

