Resilient cities: meaning, models, and metaphor for integrating the ecological, socio-economic, and planning realms.

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Resilient cities: meaning, models, and metaphor for integrating the ecological, socio-economic, and planning realms

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Abstract

Urban designers, ecologists, and social scientists have called for closer links among their disciplines. We examine a promising new tool for promoting this linkage—the metaphor of cities of resilience. To put this tool to best use, we indicate how metaphor fits with other conceptual tools in science. We then present the two opposing definitions of resilience from ecology, and give reasons why one is more appropriate for linking with design. Additional specific tools and insights that are emerging from, or being increasingly used in, ecology can further support the linkage with urban design. These include recognizing the role of spatial heterogeneity in both ecological and social functioning of urban areas, the integrating power of watersheds, social and ecological patch dynamics of cities, the utility of spatial mosaic models to capture function, the use of an integrated human ecosystem modeling framework, and the consequent
perspective of metropolitan areas as integrated ecological-social systems. Three additional tools are related to the adaptability of people and human institutions. First is the recognition of a “learning loop” in metropolitan ecosystems in which people respond to and affect ecological change, the use of urban design as experiments whose ecological and social outcomes can be measured, and finally the potency of a dialog between professionals and citizens, communities, and institutions, to support both research and design. The metaphor of resilience, and its technical specifications, draw these diverse strands for linking ecology and planning together.

Keywords
Ecosystem; Ecological resilience; Integration; Paradigm; Urban design; Urban ecology; Urban planning

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