

A Critique of Urban Genome Project

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1 General comments

2 Specific comments

3 Discussion

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- [Batty, 2013] one view on urban systems; integrative approaches see [Lobo et al., 2020]
- Link and distinction between theories and models? see [Livet et al., 2010] [Raimbault, 2017]
- Should urban evolution encompass “everything urban”? → examples on the opposite of evolutionary processes?
- On the need for interdisciplinarity and multiple perspectives, totally agree: see [Pumain and Raimbault, 2020]

- On urban ecology, see also industrial symbiosis: analogy or equivalence? [Raimbault et al., 2020]
- On Complex Adaptive Systems approach: indeed morphogenesis models are not evolution models - confusion of concepts in the literature? (as in evolutionary economic geography in general? [Schamp, 2010])
- On Scaling Theories: allometric growth/scaling is linked to scaling but not the same concept - [Chen and Jiang, 2009] [Lang et al., 2019]; issue of non-ergodicity [Pumain, 2012]
- When switching from biological to social evolution, evolution units become more complex, heterogenous, fuzzy.

- Evolution as an analogy or as underlying general processes? → transfer of concepts/theories/models between disciplines - nature of interdisciplinarity
- What exactly is a “socio-cultural entity” is still fuzzy at this stage

Proposing “physical” urban entities is challenging on several points:

- Link form-function? (included in definition of formeme)
- Selected as optimizing spatial organization - but fitness functions in social/urban environments are tied to multiple actors at multiple scales, with multiple objectives
- How to draw the boundary for units (nature, scale, delimitation), how to define the system
- Information essential in complex systems (included in the formeme) [Haken, 2006]
- Why necessarily a “molar unit”? Can it span multiple scales?
- Compatibility with weak/strong emergence? (people interact with higher level entities: state, municipal council) [Bedau et al., 2000]

- Not “teleological”

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