

Interactive comment on “Hazard impact on settlements: the role of urban and structural morphology” by M. Bostenaru Dan and I. Armas

M. Bostenaru Dan and I. Armas

csipike@web.de

Received and published: 22 June 2015

We thank the reviewer for his/her overall analytical observations that have helped the authors to further clarify some of the arguments presented and rewrite some of the statements in order to produce a more cohesive article.

In this paper, the authors attempted to present an alternative mapping methodology in order to analyze and visualize the impacts of hazards in general, not only of earthquakes. However, because the site considered is mainly affected by earthquakes the focus of the paper moved from hazards in general to earthquakes and we appreciate the reviewer's observation and will amend the title of the article to Earthquake impact on settlements: the role of urban and structural morphology

C1055

After carefully reviewing the entire article it has become clear that certain statements were overlooked.

Also, the authors agree that they tend to use long sentences which might seem unclear at times.

Therefore the following statements were reconsidered:

We have removed “highly” original. In fact, the paper puts together into a common methodology (workflow as in Fig. 1) concepts developed in parallel with the well-known disaster methodology.

- Page 3291, line 6. This may be the case, but we quoted the text found in the Salewski's article.: Dr. Strangelove, I Presume – On the relation between scenarios and paranoia, in: Tickle your Catastrophe!, edited by: Le Roy, F., Wynants, N., Hoens, D., and Vanderbeeken, R., Academia Press, Gent, 187–196, 2011

- Page 3292, lines 16-17. Organic cities are fractal derived, not planned. This statement was reformulated accordingly.

- Section 1. The paper is about developing ways of possible hazard impacts (here exemplified with data and results from an earthquake area). The focus is on how earthquake damage is visualized on maps and not on the vulnerability assessment. In the new version of the paper we simplified and better structured the text. We appreciate the reviewer's input as English is not our native language.

- Pages 3292, lines 13-14. The description comes from how building elements are classified in the World Housing Encyclopedia. Thank you for pointing out to us this issue. We will simplify the text accordantly to your observation.

- Page 3310, line 10. Your suggestion is greatly appreciated and has helped us to include a clearer explanation on tension lines

Tension lines are lines which order landscape elements in visual perception. They may

C1056

be roads, or the boundary of a forest, or a mountain line. In a city they may be the flow of cornices, or tree alignments. "node, landmark, zone, boundary and path", which are the names given by Lynch to the elements of the image of the city. Therefore, they are more important for the scope of this paper, which relates to mapping. A number of images from the Canadian Centre for Architecture depicting ruins after disasters are available. Maybe it would have been useful to include an example. These images are photographs, mostly from 19th century disasters, including also earthquakes such as San Francisco 1906. Kevin Lynch's elements can be recognized on these images for example using tension lines to recognize a node or a boundary. Again, more tension lines delineate a zone. At the intersection of tension lines are nodes.

- Page 3304, lines 16-17.

We thank the reviewer for his/her comments, certainly the Deleuze's approach was not appropriately introduced in the initial article. We have included a more detailed explanation. Deleuze differentiates between smooth and striated space. Deleuze uses several metaphors to exemplify it: the nomad and the sedentary, the textile metaphor (felt and woven) etc. Sometimes in reconstruction is used a different pattern. A well known example is Lisbon 1755 when instead of the Middle Ages street pattern the Baixa was created, with rectangular streets. A counter-example is London post 1666 fire, where the old street pattern had been kept. Also other reconstructions considered smoothing and striation, such as Le Corbusier's plan for Paris. In case of Bucharest, restructuring after major earthquakes was done by creating more green spaces (articles in the journal *Arhitectura* from the 1940s, e.g., A. Cerkez: După cutremur. *Arhitectura* VI; 3-4, p. 15-16, 1940).

We have analyzed several references and can quote them:

Danielle Wiley (2010) *A Walk About Rome: Tactics for Mapping the Urban Periphery*, *Architectural Theory Review*, 15:1, 9-29, DOI: 10.1080/13264821003629220

Charles Travis (2013) *From the ruins of time and space, City: analysis of urban trends*, C1057

culture, theory, policy, action, 17:2, 209-233, DOI: 10.1080/13604813.2012.754191

Charles Travis (2014) *Transcending the cube: translating GIScience time and space perspectives in a humanities GIS*, *International Journal of Geographical Information Science*, 28:5, 1149-1164, DOI: 10.1080/13658816.2013.829232

Adriana de Souza e Silva & Larissa Hjorth: *Playful Urban Spaces. A Historical Approach to Mobile Games, Simulation & Gaming*, Volume 40 Number 5, October 2009 602-625, 10.1177/1046878109333723

Alexander John Bridger (2014) *Visualising Manchester: Exploring New Ways to Study Urban Environments with Reference to Situationist Theory, the Dérive, and Qualitative Research*, *Qualitative Research in Psychology*, 11:1, 78-97, <http://dx.doi.org/10.1080/14780887.2012.719071>

Kris Darby (2013). *Framing the Drift and Drifting the Frame: Walking with Wrights & Sites*. *New Theatre Quarterly*, 29, pp 48-60 doi:10.1017/S0266464X13000055

KEITH BASSETT (2004) *Walking as an Aesthetic Practice and a Critical Tool: Some Psychogeographic Experiments*, *Journal of Geography in Higher Education*, 28:3, 397-410, DOI: 10.1080/0309826042000286965

Elisabetta Tesser (2012) *Gente di Roma: an exercise of dérive by Ettore Scola*, *Current Issues in Tourism*, 15:6, 577-590, DOI: 10.1080/13683500.2011.644266

Phil Smith (2013) *Walking-Based Arts: A Resource for the Guided Tour?*, *Scandinavian Journal of Hospitality and Tourism*, 13:2, 103-114, DOI:10.1080/15022250.2013.796223

The connection between Kevin Lynch and Guy Debord is given in the paper by the numerous references to Bostenaru and Dill (2014) (reference Bostenaru Dan, M. and Dill, A.: *Spatial street network and urban routes around the modernist boulevard in Bucharest*, in: *Planning and Designing Sustainable and Resilient Landscapes*, 5 edited by: Bostenaru Dan, M., Armas, I., and Goretti, A., Springer Netherlands, Dordrecht,

187–217, 2014., page 3310, lines 3-6). In that paper was considered the same study site and how it can be explored by walking. Walking plays a role also in Rapid Visual Screening for earthquake vulnerability, also in digital representation (subject of this paper) as the referred mobile apps show, and it has been recently connected by the DESURBS project again to disaster security research through some developed mobile apps (the DESURBS research being investigated in the paper). Lynch was never linked to Debord to our knowledge, but the above named papers connect the method of derive (drift) to boundaries (an element at Lynch) and their identification, as well as to identity creation, which is a key concept in the heritage habitat we aim to discover in this Lynch analysis of a central protected zone.

In this paper we focused on the necessity to zoom at the building level by not considering it only statistics item as in usually GIS-based methods, but visualizing it in both the structural assessment (the macro-elements method) and in the images of disasters (through perception). This is possible using the other tools mentioned in the paper.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 3287, 2015.