

Editorial: Sentiments, spatial perceptions and wayfinding

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This fifth issue of the 2021 Volume of ASR addresses the multifaceted ways in which the built environment is perceived and navigated.

The first paper “Deep learning-based natural language sentiment classification model for recognizing users’ sentiments toward residential space” by Sun-Woo Chang, Won-Hyeok Dong, Deuk-Young Rhee and Han-Jong Jun is a fascinating application of machine learning techniques to classify sentiments expressed by tenants of urban housing, based on almost 6,000 reviews posted on on-line real estate brokerage platforms. The trained algorithm affords insights into which housing attributes and locations are more positively appreciated by tenants. This has the potential to influence the location, form and design of future housing developments and to improve the management and refine rental values of existing developments.

The second paper “An Investigation of a field function description of spatial perception from the viewpoint of Raumplan” by Xiangfeng Li, Kaihuai Deng, Fang’ai Chi, Yinxiong Wang, Yue Huang and Changhai Peng attempts to provide a theoretical framework through which spatial perception can be quantified. In this the authors propose the use of field functions as an alternative to space syntax theory that is conventionally employed to this effect. This they argue, through a series of thought experiments, goes beyond the analysis of spatial connectivity, to also provide a basis for quantifying the qualities of a spatial layout. More specifically, the authors conclude that: (1) the key to the sensation of space is whether there is a sense of being marked through defined boundaries; (2) the boundary is necessary but not sufficient for the generation of spatial perception; and (3) the spatial scale must be comparable to the scale of the observer to create spatial perception.

The third paper “How do atria affect navigation in multi-level museum environments?” by Athina Lazaridou and Sophia Psarra studies the extent to which atria can help visitors to multi-level museums navigate their way through these complex spatial layouts. This they assess by observing the paths that study participants take as they navigate through virtual models, one with the atria and another in which views through it have been blocked off. Through this virtual experiment they found that users visiting the exact model turned their heads around fewer times than users visiting the modified model, suggesting that atria play a significant role in assisting navigation.

This issue closes with a final systematic review paper by Hassan Iftikhar, Parth Shah and Yan Luximon entitled “Human wayfinding behaviour and metrics in complex environments: a systematic literature review”. Through four databases, the authors identified more than 4,000 candidate articles, which were reduced through inclusion criteria to 27, with a particular focus on urban campuses such as universities and hospitals where difficulties in wayfinding can waste time and cause stress and frustration. Contributory factors include individual and cultural differences, layout unfamiliarity and ineffective environmental information for wayfinding. However, this can be combatted through digital aids, such as augmented and virtual reality, using smartphones; this being particularly well suited to younger adults. The authors conclude that such technologies and the evaluation of their effectiveness is an area in need of further development.

Finally, and by way of introducing myself to the readership of ASR, I would like to take this opportunity to bring your attention to a new climate analysis web app that I have co-developed, called PyClim

(<https://share.streamlit.io/darrenrobinson/pyclimwebapp/main/app.py>). This tool enables users to graphically interrogate energy plus weather (.epw) files. The source code for this is openly accessible through my GitHub repository. I'm hoping that the app and its underlying code will be a useful resource for future architectural science researchers, students and practitioners.