Ability and intelligibility:

Wayfinding and environmental cognition in the designed environment

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Abstract

There seems to be a growing consensus in the literature that topological variables, both in the environment and in sketch maps, are reliable indicators of wayfinding performance. Additionally, there are other suggestions regarding the use of topological variables to characterize and measure overall environments. In this regard, it has been reported that topologically derived configurational measures may provide a better sense of the ease or difficulty that each environment may present to an immersed and moving subject within it. A clarification of such claims is an important focus of this paper.

Regarding the externalization of cognitive understanding, the technique of sketch mapping has a long tradition. However, there are many ways by which these maps have been analysed. The inclusion of Space Syntax methods provides a new dimension. A comparison of Space Syntax with some other tools of sketch map analysis is a secondary focus here.

These and other similar issues are explored through an experiment conducted in two complex hospital buildings in the US, where ninety-six volunteers, completely unfamiliar with the two environments, participated. They explored the setting, completed wayfinding tasks, pointed to unseen destinations, estimated distances between them and drew sketch maps from memory. The environment was analyzed through existing Space Syntax methods and some additional theoretically derived techniques. Two datasets were eventually produced: one by person and the other by corridor. The first one included sketch map variables, wayfinding performance indicators and cognitive tasks. The dataset by corridor included two kinds of data: independent values of the corridors themselves that was derived from Space Syntax analysis and wayfinding use of those corridors.

An important conclusion from the analysis is that intelligibility of settings is an important measure that is predictive of wayfinding and environmental cognition within environments. However, geometric and metric relations cannot be ignored and there may be certain instances when those factors may become overwhelming.