Perception and Behavior in Architectural Space  Part 1

Simulation Model for Pedestrian Movement

The goal of this research was to develop a computer simulation model for pedestrian movement in architectural and urban space. The advantage of the model is the ability to visualize the movement of each pedestrian in a plan as an animation. Therefore, architects and designers can easily find and understand the problems in their design projects. The effectiveness of the simulation model was shown by simulation of the evacuation from an office building and movement of pedestrians in queue spaces.

Way-finding Experiments with Communication in Virtual Mazes

There existed no experimental studies on the relationship of communication with architectural space and walking in way-finding. We used FreeWalk for the experiments of way-finding with verbal communication in a virtual maze. According to the experiments, we have found kinds of way-finding behaviors, state-transition from one behavior to another, kinds of communication words, and characteristics of image maps drawn by subjects.

Visual Search and Pedestrian Movements in a Virtual and Real Subway Station

The goal of this research is to clarify key points of human navigation behavior through virtual spaces by using FreeWalk system. The same experiment was conducted using both a real and a virtual subway station. Subjects wearing an eye camera got off either a real or virtual subway train and tried to find a specified exit. By analyzing and comparing the results of the two experiments, significant characteristics of navigating virtual space were found.

Visual Search and Pedestrian Movements in a Real Maze and Staircases

Experiment in a Maze aims at revealing the relationship between visual search and walking during way-finding. Subjects wore an eye camera and walked two or three times through a maze until the entire path was learned. By analyzing the results of the experiment, changes of coordination of eye-head-body movement were revealed. Moreover, experiments to clarify the characteristics of fixation movements while climbing or descending staircases were conducted at a subway station.

References:
