STUDY OF YOUTH NAVIGATION STRATEGIES: BUILDING ROUTES ON THE MEGAPOLIS VIRTUAL MAP

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Introduction

Setting themselves the task of creating a comfortable and convenient urban space, modern psychologists study such phenomena as «spatial consciousness», «spatial mapping», «spatial abilities», «navigation strategies», «environmental knowledge», «pathfinding», etc. key concepts of the cognitive direction of the psychology of the subject-spatial environment. The concept of «navigation strategy» is one of the central constructs in modern cognitive psychology. This approach is considered by experts as a process of human orientation in the environment based on existing ideas about space, individual experience, and external landmarks, including virtual services.

Methodology

To identify the features of building routes in the environment of a large metropolis by youth, a laboratory experiment was organized and conducted using the Tobii Pro Spectrum eye tracker. The study involved 30 people aged from 19 to 26, where 40% were men and 60% - women, with different experience of real urban environment interacting. An electronic map of a large Russian metropolis (Yekaterinburg) was shown to the respondents. They were asked to offer a walking path - from the starting point of the route to the end point (along 5 pre-designed routes).

Results and conclusion

• An analysis of the youth navigation strategies in an urban environment when interacting with an electronic map showed the following results: the walking routes built on a city electronic map are not optimized in length but simplified. Thus, the increase in the proposed routes compared to their optimal length is on average from 200 meters to 1 kilometer. Details are shown in the table

In addition, characteristic trends were identified in the navigation strategies of young people when interacting with the electronic map of the city:

1. The discreteness of iconic objects in the space of the city - significant objects of the urban environment of the metropolis in the system of orientation of young people exist separately from each other, without uniting into an integral system.
2. Routes for walking are not optimized by pedestrians, but are simplified with reference to traffic routes. When constructing routes, the possibilities of diagonal movement on foot in places accessible for this are not taken into account.
3. As a rule, routes are built along the main highways of the metropolis without taking into account the possibility of walking along secondary streets, driveways, squares, embankments and other paths.
4. Orientation to a parallel-perpendicular street structure - even in the case of diagonal streets, building a route tends to choose a trajectory with clear turns.

Key indicators of the chosen routes

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Route 1</th>
<th>Route 2</th>
<th>Route 3</th>
<th>Route 4</th>
<th>Route 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum length of an individual route</td>
<td>3.52 km</td>
<td>3.78 km</td>
<td>3.17 km</td>
<td>4.05 km</td>
<td>5.17 km</td>
</tr>
<tr>
<td>Maximum length of an individual route</td>
<td>3.62 km</td>
<td>3.78 km</td>
<td>3.59 km</td>
<td>5.61 km</td>
<td>6.14 km</td>
</tr>
<tr>
<td>The average length of individual routes</td>
<td>3.55 km</td>
<td>3.12 km</td>
<td>3.26 km</td>
<td>5.93 km</td>
<td>5.14 km</td>
</tr>
<tr>
<td>Standard deviation of the length of routes</td>
<td>0.02 km</td>
<td>0.29 km</td>
<td>0.19 km</td>
<td>0.35 km</td>
<td>0.61 km</td>
</tr>
<tr>
<td>Average deviation of individual routes</td>
<td>0.35 km</td>
<td>0.30 km</td>
<td>0.22 km</td>
<td>0.85 km</td>
<td>1.09 km</td>
</tr>
</tbody>
</table>

- The gender and experience of living in a metropolis environment are not of decisive importance for choosing the trajectory between the start and end points of the route, as well as for its length and optimization when laying the route on the city electronic map.