“I Did It My Way”: Moving Away from the Tyranny of Turn-by-Turn Pedestrian Navigation

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Motivation

Pedestrian navigation devices: taking away the fun of exploring a place?
Our approach

Simple, low-resolution guidance on-demand
1: Static feedback
2: Dynamic feedback
Benefits

• Encourage immersion in surroundings

• No waypoints: prompt exploratory navigation
Research questions

- Navigation without waypoints - how well does it work?
- Dynamic feedback - is it worthwhile?
Evaluation

• 24 participants, navigate from A to B
• Shortest possible route approx. 1 km

• Observed participants, logged all sensor data
• Looked at navigation success and route variation between systems
Results

- All participants found the destination
- Times and differences not significantly different between feedback types

<table>
<thead>
<tr>
<th>Measure</th>
<th>Dynamic</th>
<th>Static</th>
</tr>
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<tbody>
<tr>
<td>Time taken (minutes)</td>
<td>17:24 (sd: 5:25)</td>
<td>19:02 (sd: 5:36)</td>
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<tr>
<td>Distance walked (km)</td>
<td>1.53 (sd: 0.39)</td>
<td>1.65 (sd: 0.58)</td>
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Routes varied between several paths. Dynamic feedback gave more freedom when navigating?
Participants’ feedback

- Enjoyed using the systems; often surprised at effectiveness
- Some still preferred constant positional knowledge
Conclusions

• Low-resolution directional guidance can be effective for real-world pedestrian navigation

• Users can deal with environmental complexities without significant impact on walking behaviour

• Path choice awareness is appreciated - we used haptics; other modalities possible where appropriate
Thank you

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