

Point Me In The Right Direction

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1 As The Crow Flies

Cyclists using navigation devices become a more common sight these days in urban areas. Some new devices like Beeline¹ and SmartHalo² feature a novel navigation method that simply shows the direction and distance to the goal location, instead of providing turn-by-turn guidance. While these devices may be primarily following a trend, there are potential links to scientific findings on cognitive principles [1, 2, 3, 4]. Nevertheless, the cognitive significance of navigating towards a goal direction rather than following detailed route plans is still poorly understood and requires further research.

To shed further light on this topic we aim to address the extent to which people benefit from knowing the direction of the goal location when planning a route, and whether they express this knowledge verbally or primarily through gestures. Intuitively, a question like "Can you point me in the right direction?" seems entirely natural and possibly quite frequent. But to what extent does this actually support long distance navigation and route planning? Under what circumstances is it appropriate and useful to just point into the right direction without providing further details, and how does this complement turn-by-turn directions? Understanding how we use this concept in spoken route descriptions will help us understand how to use and improve *as the crow flies* navigation.

Following Hölscher, Tenbrink and Wiener [3] there may be differences between prospective and situated planning in familiar environments. When planning ahead, navigators may rely more on the remembered major nodes of the street network, whereas *as the crow flies* navigation may play a major role during actual navigation. We envision an empirical study in which route instructions are collected from participants both indoors and outdoors. Participants would describe routes to destinations at various distances and either visible from the current location or not in sight. We will evaluate gestures and route descriptions to identify factors that induce or prevent verbal and gestural pointing actions.

1.1 Discussion Questions

1. Intuitively, how do pointing gestures and verbal descriptions complement each other in route descriptions? Would the use of pointing gestures impact the use/richness of verbal description?
2. Are there any further studies that can already shed light on this issues?
3. Under what circumstances would you use this navigation method?

References

- 1 Robert Albrecht, Riitta Väänänen, and Tapio Lokki. Guided by music: Pedestrian and cyclist navigation with route and beacon guidance. *Personal Ubiquitous Comput.*, 20(1):121–145, February 2016.
- 2 R. Conroy Dalton. The secret is to follow your nose: Route path selection and angularity. *Environment and Behavior*, 35(1):107–131, 2003.
- 3 Christoph Hölscher, Thora Tenbrink, and Jan M. Wiener. Would you follow your own route description? cognitive strategies in urban route planning. *Cognition*, 121(2):228 – 247, 2011.
- 4 Martin Pielot, Benjamin Poppinga, Wilko Heuten, and Susanne Boll. Tacticycle: Supporting exploratory bicycle trips. *MobileHCI '12*, pages 369–378, New York, NY, USA, 2012. ACM.

¹ <https://beeline.co>

² <https://www.smarthalo.bike>