The impact of the route instruction on incidental learning of environmental features

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INTRODUCTION
Reference to landmarks in route instructions enhances their recall. Is this also true on a larger scale - does it help to recognize regions, remember their names, and their positions in relation to each other if they are mentioned in the route instruction?

METHODS
Participants
60 (24 f, 36 m), mean age 26.02; driver’s license: 56

Experimental procedure
Driving simulator, steered with OpenDS 4.0
Virtual city created with CityEnginge (ESRI City Engine 2018.1)
Training route: 1 km, Test route: 9.5 km

Tests after driving
Landmark recognition task
Sketchmap drawing

RESULTS
1. Landmark recognition task
- set of pictures, 8 landmarks + 14 distractors
- mentioning the landmarks in the route instruction significantly increases their recall (Kruskal-Wallis-ANOVA, p = 0.0002).

2. Sketch map analysis
- Regional layout: 5 contacts between the regions
- Poisson regression: significant differences between Condition 1 and Condition 2 + Condition 3
- highest recognition rate of the contacts between financial district and city center and financial district and residential neighborhood

CONCLUSION
Mentioning salient characteristics of the environment facilitates the recall - and this holds both for landmarks and larger structures like regions. But not only the name, also positional information is being stored, e.g. in which region a certain landmark is, or the positions of the regions in relation to each other.
We found no no benefit from adjectives. Perhaps the features were so salient that they were recognized without verbal emphasis.