Provision of personalized landmarks for the elderly

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Kornhausstrasse 7

9000 Sankt Gallen, Schweiz

Auf Kornhausstrasse nach Südosten Richtung St. Leonhard-Strasse

21 m

Rechts abbiegen auf St. Leonhard-Strasse

77 m

Rechts abbiegen auf Gutenbergstrasse

33 m

Gutenbergstrasse

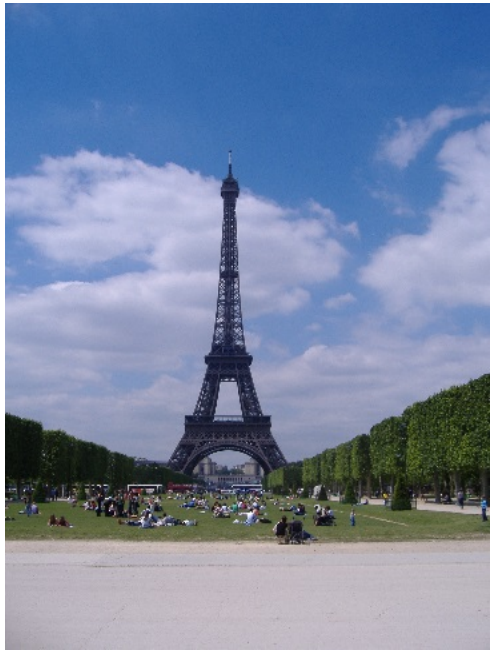
9000 Sankt Gallen, Schweiz

https://www.google.de/maps

http://m.bahnhofplatz.stadt.sg.ch/index.php?apid=691589&jsr=1

What is a landmark?

- Object which serves as external reference point
- Anything that stands out from the background may serve as a landmark
- E.g. buildings, signs, stores, or mountains
- They can be recognized through contrasts of cleanliness, age, cultural status, or use



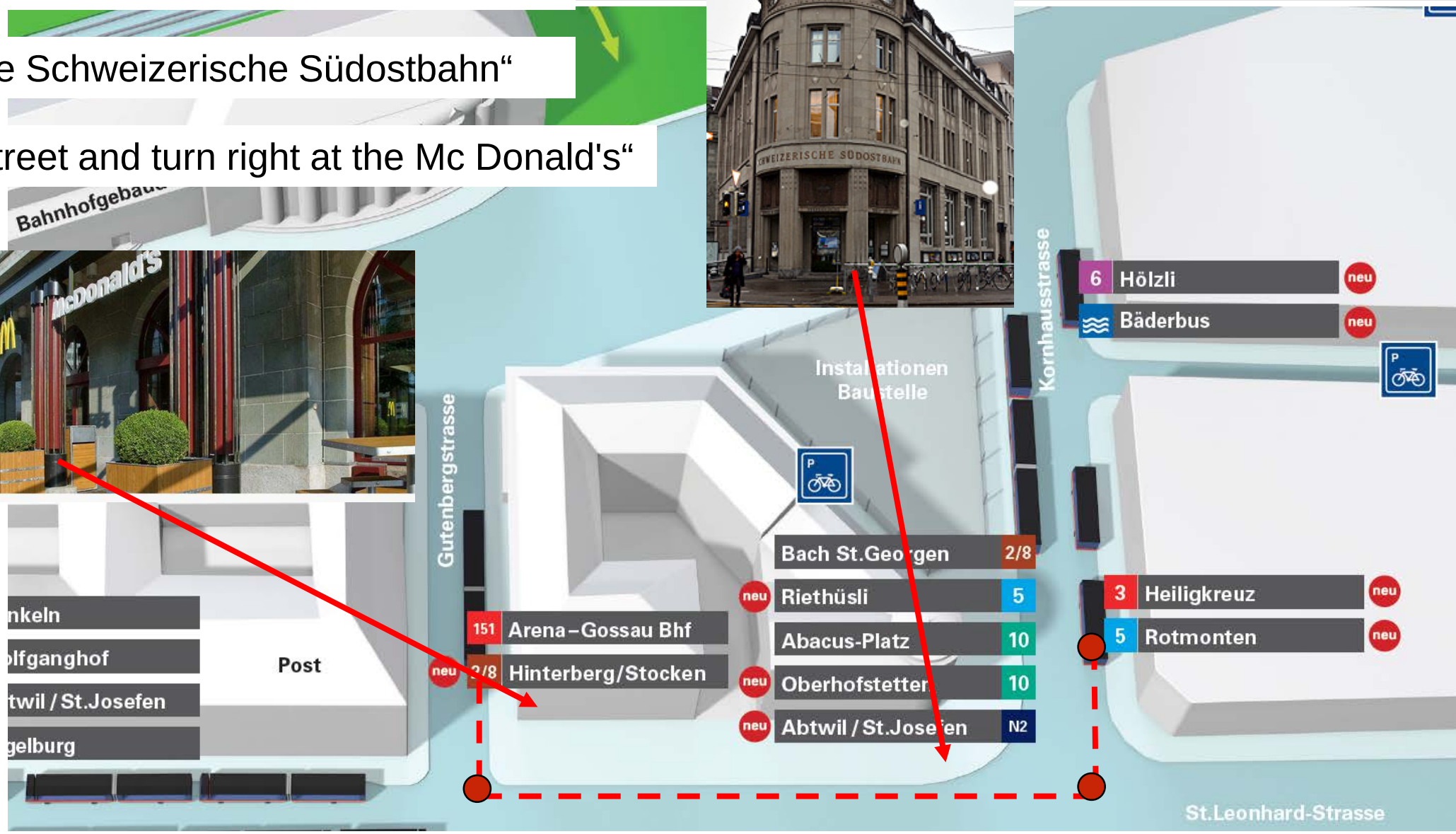
http://www.bahnonline.ch/wp/wp-content/uploads/2015/03/Verwaltungsgebaeude-SOB-Bahnhofplatz-1a-St-Gallen-84064_01.jpg

http://www.mcdsg.ch/fileadmin/_processed_/csm_restaurant-sg_1_8bcfc785d4.jpg

„Turn towards the Schweizerische Südostbahn“

„Turn right at the Schweizerische Südostbahn“

„Go down the street and turn right at the Mc Donald's“



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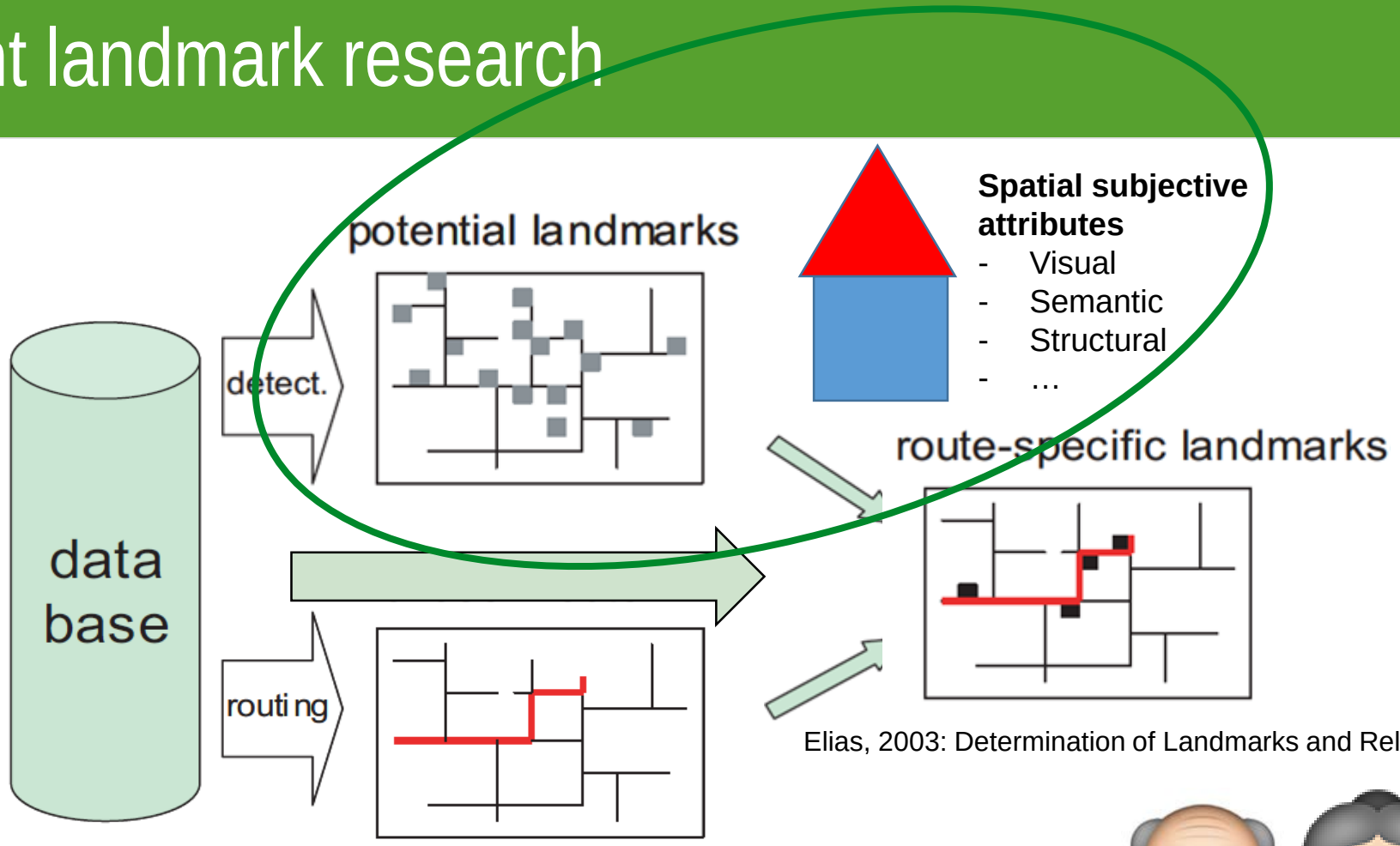
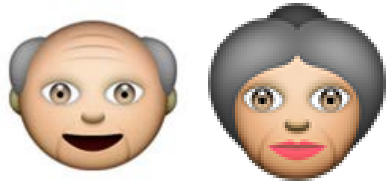
Current landmark research



Elias, 2003: Determination of Landmarks and Reliability Criteria for Landmarks



- No considerations of **the personal dimension of landmarks**
- No investigation of the **integration of personal landmark information** directly **in the routing algorithms**

Why do we need personalized landmarks?

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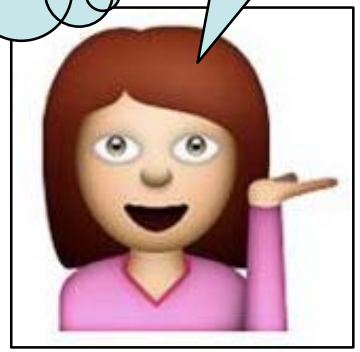
http://www.maclife.de/media/maclife/styles/tec_frontend_fullscreen/public/images/editors/2015_09/image-62924--89465.jpg?itok=okkjQn3F

„go down the street and turn right at the Apple Store“



http://0.tqn.com/d/webtrends/1/S/6/Y/-/-/infodesk.jpg

http://www.appgefahren.de/app/uploads/2013/02/Apple-Shop.jpg

http://www.martinsapples.com/media/images/retailhome.jpg

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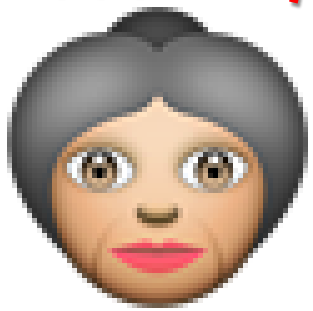
http://emojisaurus.com/images/emoji/older_man.png



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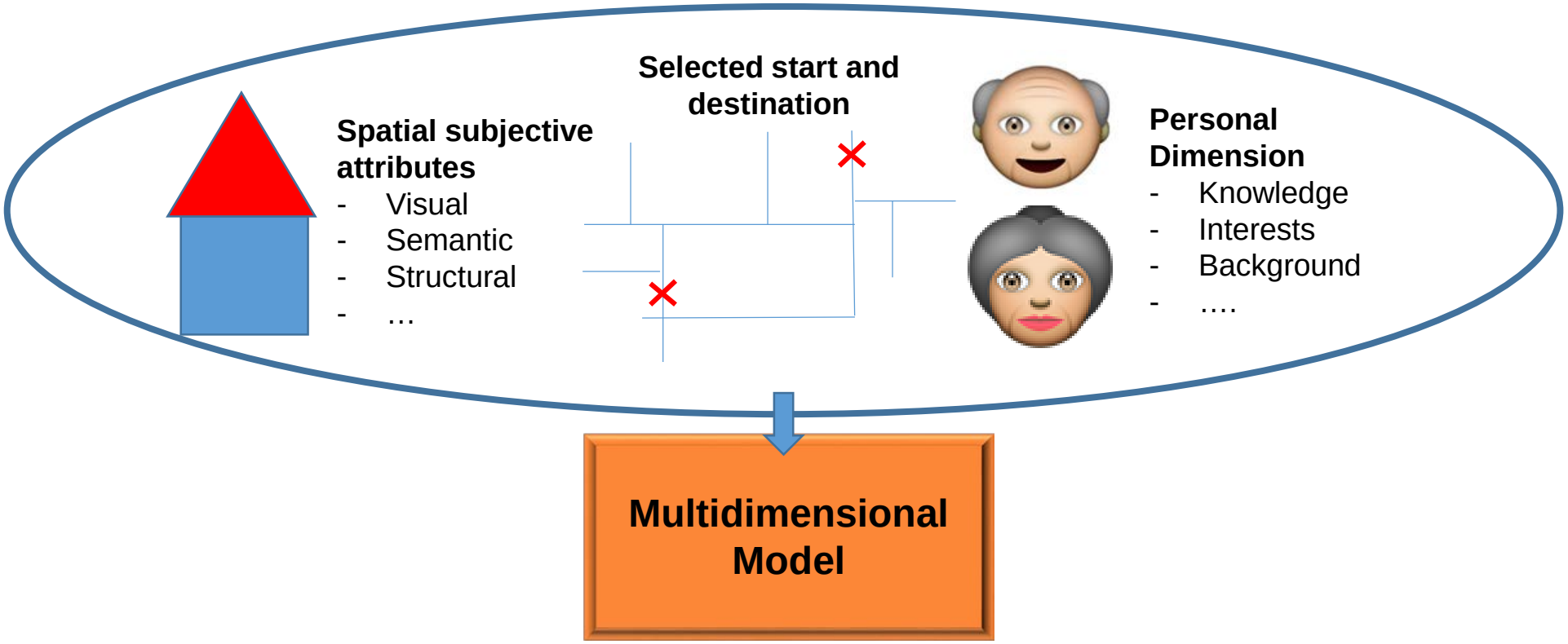
Personalized landmarks could be very helpful for the elderly to navigate through space especially if they were tailored exactly to their needs.

How can we provide personalized landmarks?



How can we provide personalized landmarks?

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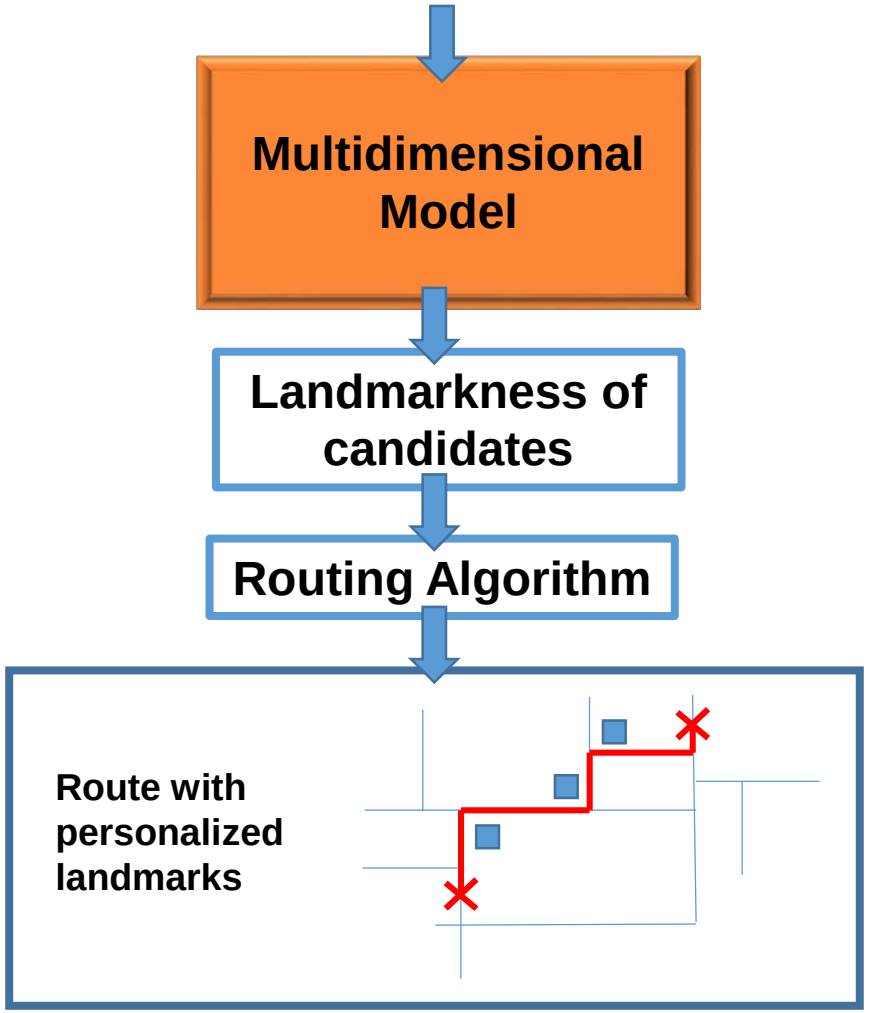

Which attributes are important for the personal dimension?

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- Personal dimension
  - User's background (Gender, age, place of birth, education)
  - User's interests (e.g. arts, theater, ….)
  - User's goals (reaching a familiar destination, reaching a novel destination, exploratory travel)
  - User's knowledge

User's knowledge

Knowledge

Familiarity has an influence on the preferences of certain types of landmarks (Quesnot & Roche, 2015)

Degree of Familiarity

Degree of Personalization

„My home“

„the city museum“

„The corn cob“

https://de.wikipedia.org/wiki/Augsburger_Hotelturm#/media/File:Augsburg_Dorint-Novotel-Hotelturm_Maiskolben.jpg

User‘s knowledge

→ in general **older adults** have **lower spatial abilities** (Ziefle and Bay, 2006)

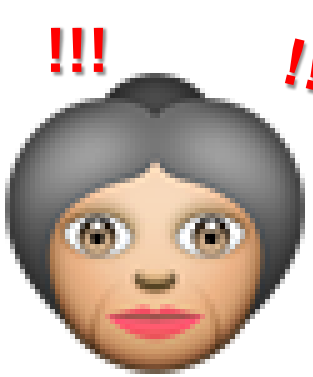
→ Elderly people commonly have greater **difficulty retracing routes and memorizing maps** (Goodman et al., 2005)

→ Elderly people have more problems in **utilizing allocentric cognitive maps** for navigating three-dimensional environments (Wiener et al., 2013)

→ People with **dementia**: long-term memory is often less affected → older memories are often more firmly established and are more likely to be recalled than newer memories (Alzheimer’s Society, 2016)

„My former school“

http://emojisaurus.com/images/emoji/older_man.png



http://emojisaurus.com/images/emoji/older_woman.png

„My parent’s home“

→ *A need for personalized landmarks for elderly people?*

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Thank you for your Attention!