The role of emotions in mental maps

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Emotions in mental map

"everything what *[sic]* I included makes *[sic]* positive emotions..."

Excerpt from interview

Content

Mental mapping

"**Visual speaking** through places what *[sic]* **words** alone **cannot articulate**"

Gieseking (2013)

Emotions

Empirically attributed current core affect state, which is usually **related** to **conscious mind**

Gaquard & Griffin (2018)

1 Research identification

Main objective

To explore the influence of emotion in mental maps that are created **before** and **after** living in a place (Vienna)

WIEN

VIENNA

1 TU Wien
2 St. Charles' Church | *Karlskirche*
3 Musikverein
4 Vienna State Opera | *Wiener Staatsoper*
5 Art History Museum | *Kunsthistorisches Museum*
6 MuseumsQuartier Vienna | *Museumsquartier Wien*
7 Natural History Museum | *Naturhistorisches Museum Wien*
8 Volksgarten
9 City Hall | *Wiener Rathaus*
10 Burgtheater
11 Imperial Palace | *Hofburg*
12 Albertina
13 St. Stephen's Cathedral | *Stephansdom*
14 Danube Canal | *Donaukanal*
15 Urania
16 Stadtpark
17 Belvedere

Map created by N. Kurumbayeva (2020),
modified by J. Cron and M. Gambashidze (2021)

2 Research design

mixed design

Case study
design

Longitudinal
design

Comparative
design

Cross-sectional
design

Methods used

Questionnaire

Case study activity
('Vienna city walk')

Mental mapping

Interviews

First user study - online / before visiting the place

Questionnaire

PANAS
Mood Scale

Vienna City Walk
(presentation)

PANAS
Mood Scale

Mental
Mapping

Questionnaire

Second user study - on site / after moving to the place and living there

Questionnaire

PANAS
Mood Scale

Vienna City Walk
(tour)

PANAS
Mood Scale

Mental
Mapping

Questionnaire

Interviews

User studies in numbers

24 participants

1 virtual (1st user study) & 7 on-site (2nd user study) walks

50 sets of questionnaire & interviews

48 mental maps

1170 records & 700 unique map elements
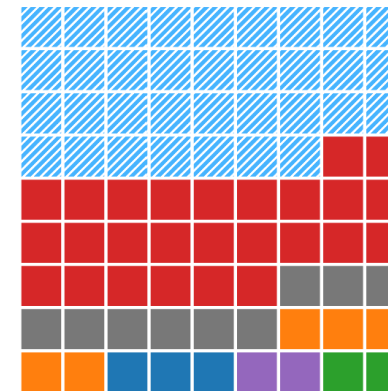
Hundreds of papers =)

3 Findings

Understand mental maps of a city drawn by the participants and their emotions

before visiting
the place

RO1
First user study

Associations

First user study

1st user study

- 🟠 landmarks & buildings
- 🔴 art & culture
- 🟣 urban environment
- 🟢 parks & nature
- 🔵 river & surroundings
- ⚫ other

▨ adjectives

Primary associations related to Vienna (left)
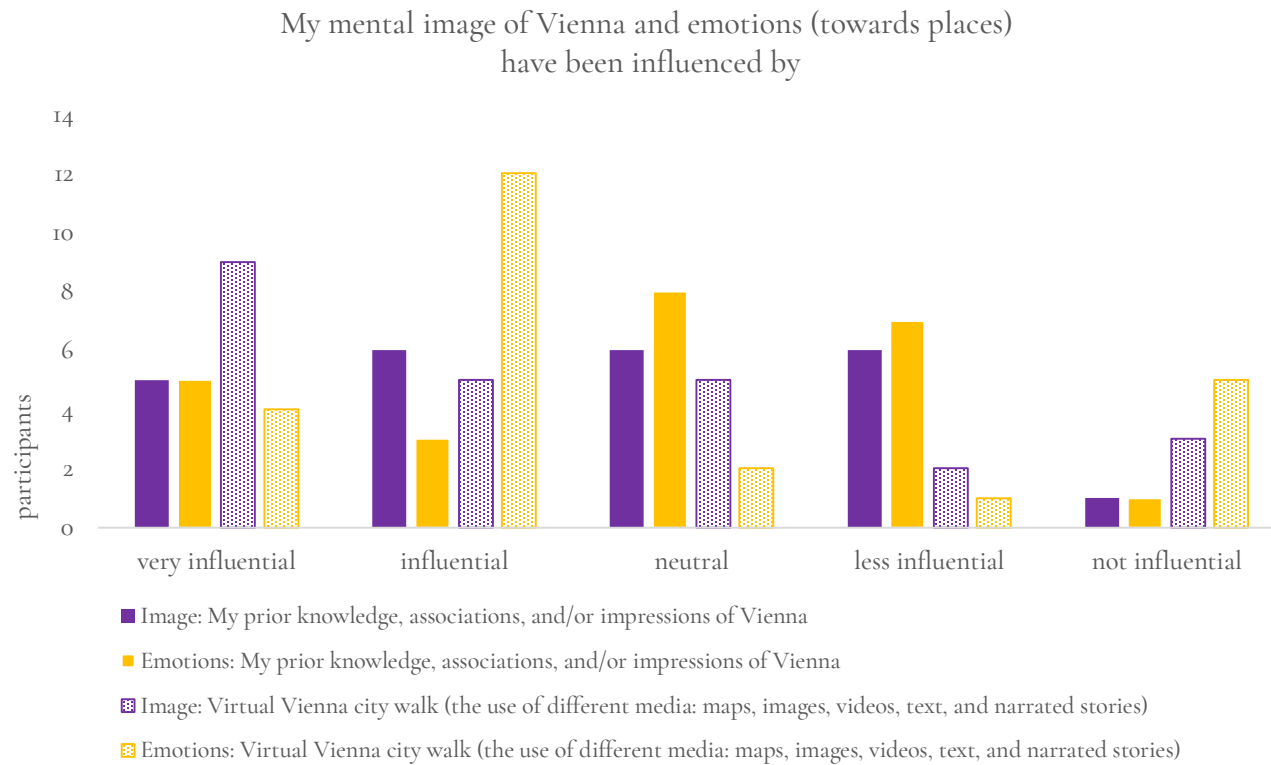*and their distribution by category (right)*
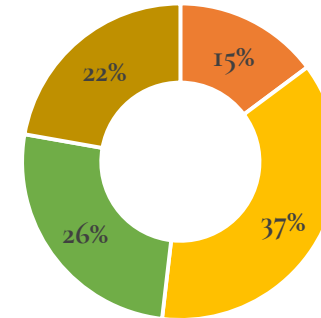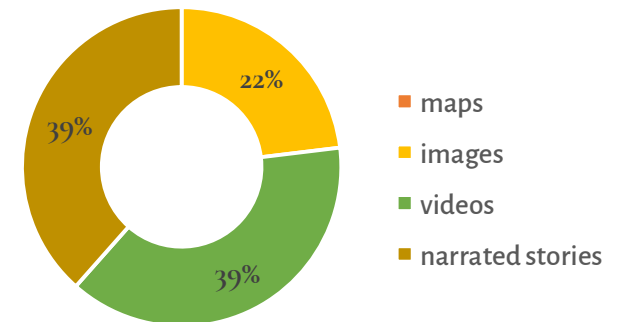
Experiences

First user study

My mental image of Vienna and emotions (towards places) have been influenced by

- Image: My prior knowledge, associations, and/or impressions of Vienna
- Emotions: My prior knowledge, associations, and/or impressions of Vienna
- Image: Virtual Vienna city walk (the use of different media: maps, images, videos, text, and narrated stories)
- Emotions: Virtual Vienna city walk (the use of different media: maps, images, videos, text, and narrated stories)

Image of Vienna was influenced by

- 15%
- 37%
- 26%
- 22%

Emotions towards places were influenced by

- 22%
- 39%
- 39%

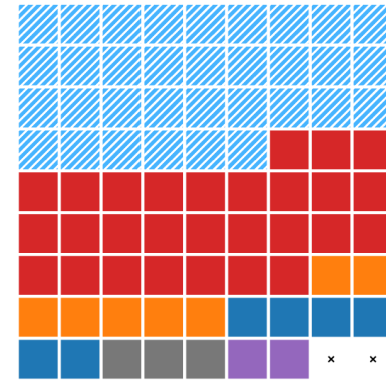- maps
- images
- videos
- narrated stories

Understand mental maps of a city drawn by the participants and their emotions

after exploring and living in that place

RO2
Second user study

Associations

Second user study

Recent associations related to Vienna (left)
and their distribution by category (right)

Experiences

Second user study

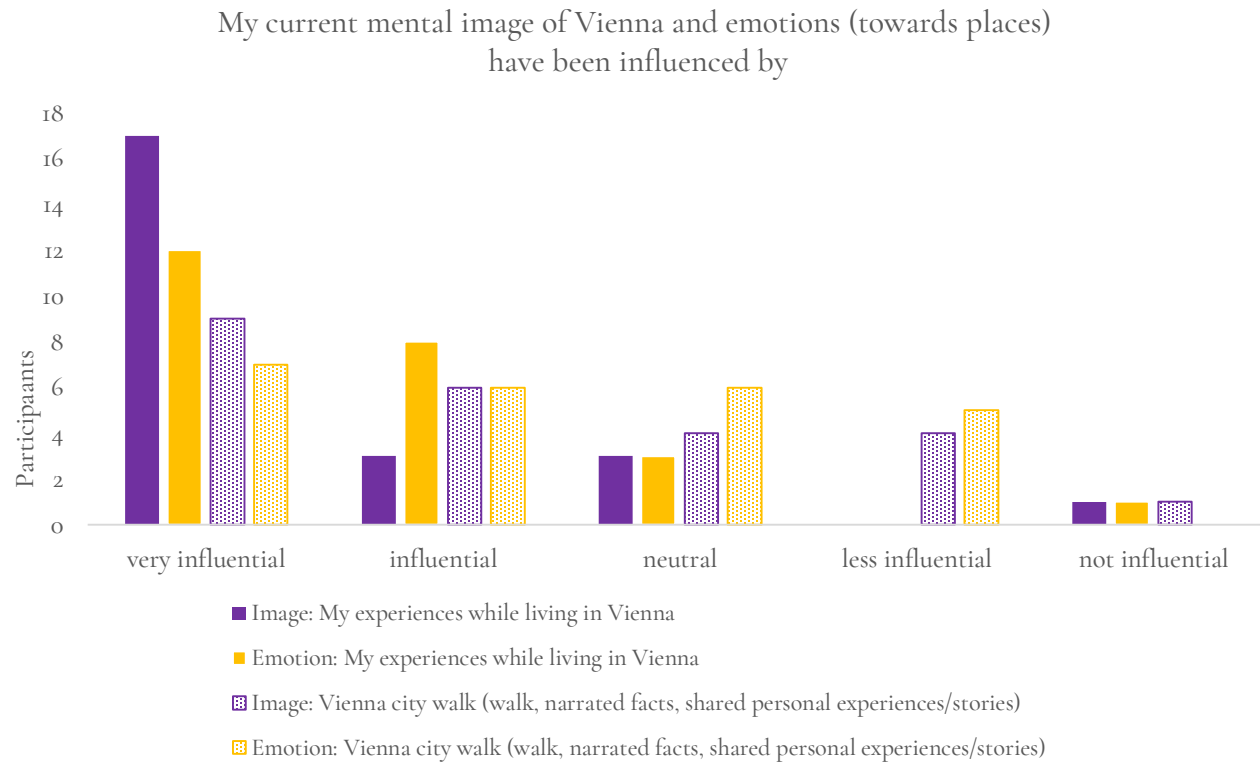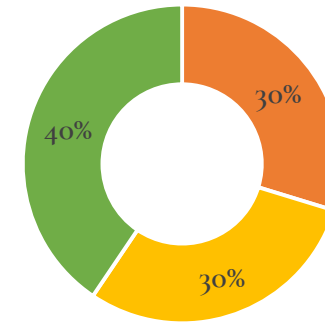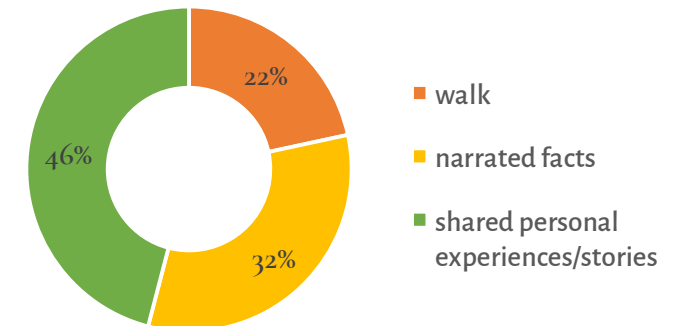My current mental image of Vienna and emotions (towards places) have been influenced by

Participaants (y-axis: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18)

x-axis: very influential, influential, neutral, less influential, not influential

- ■ Image: My experiences while living in Vienna
- ■ Emotion: My experiences while living in Vienna
- ▦ Image: Vienna city walk (walk, narrated facts, shared personal experiences/stories)
- ▦ Emotion: Vienna city walk (walk, narrated facts, shared personal experiences/stories)

Image of Vienna
was influenced by

40% 30% 30%

Emotions towards places
were influenced by

46% 22% 32%

- ■ walk
- ■ narrated facts
- ■ shared personal experiences/stories

20
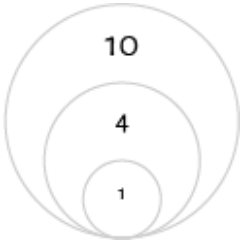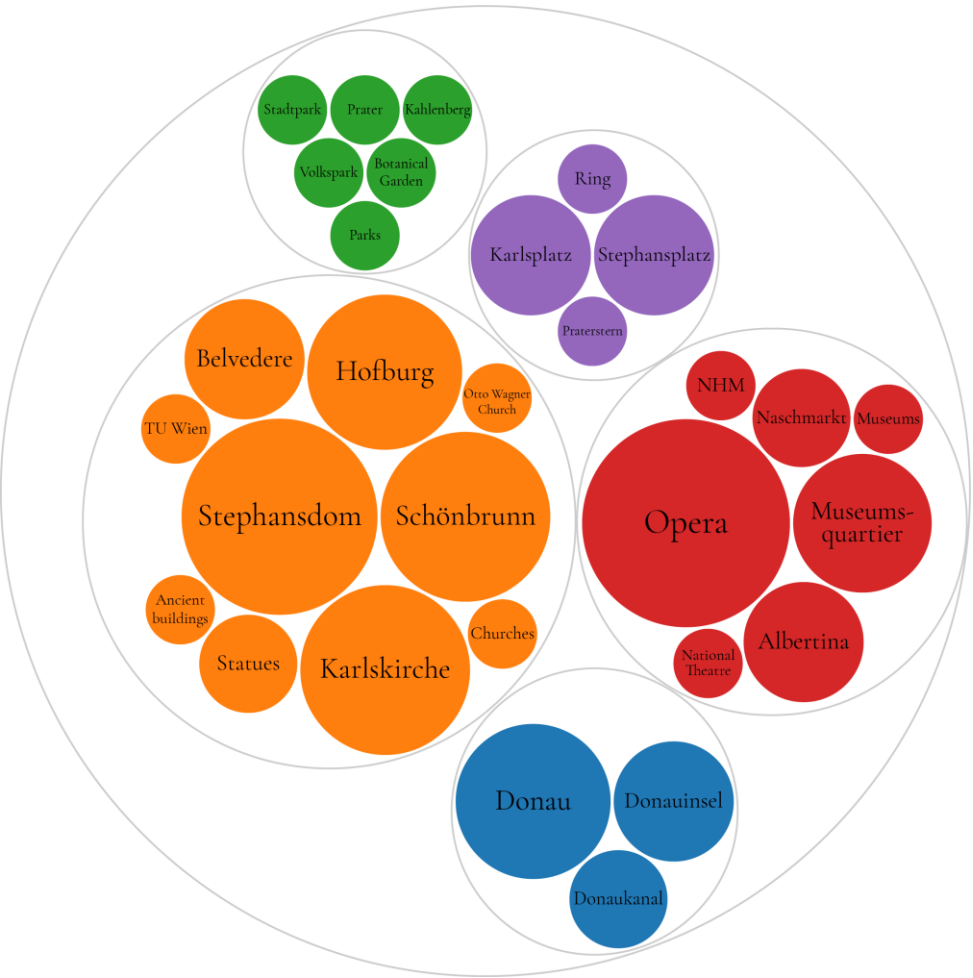
Explore the relationship between **emotions** and **places** and its influence on shaping of **mental image** of the city
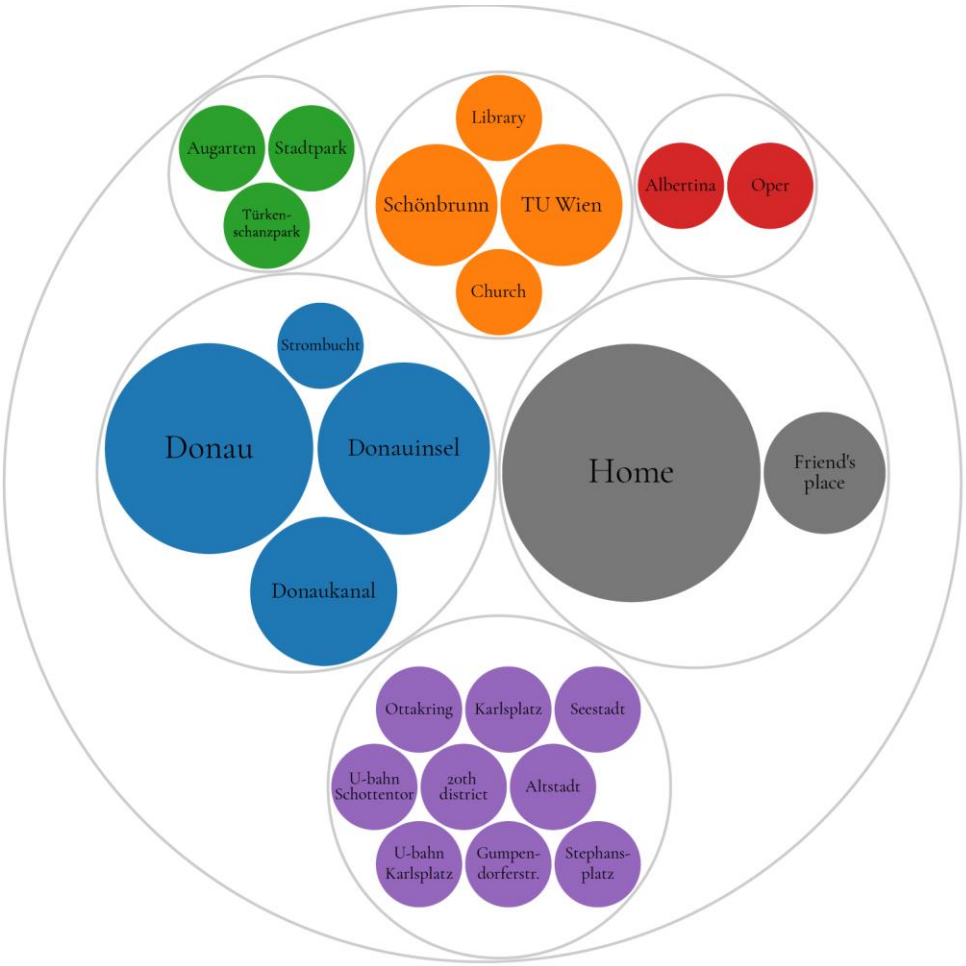
RO3
First & Second user studies

Second user study

Associated landmarks & places

Emotional landmarks & places

landmarks & buildings
art & culture
urban environment
parks & nature
river & surroundings
other

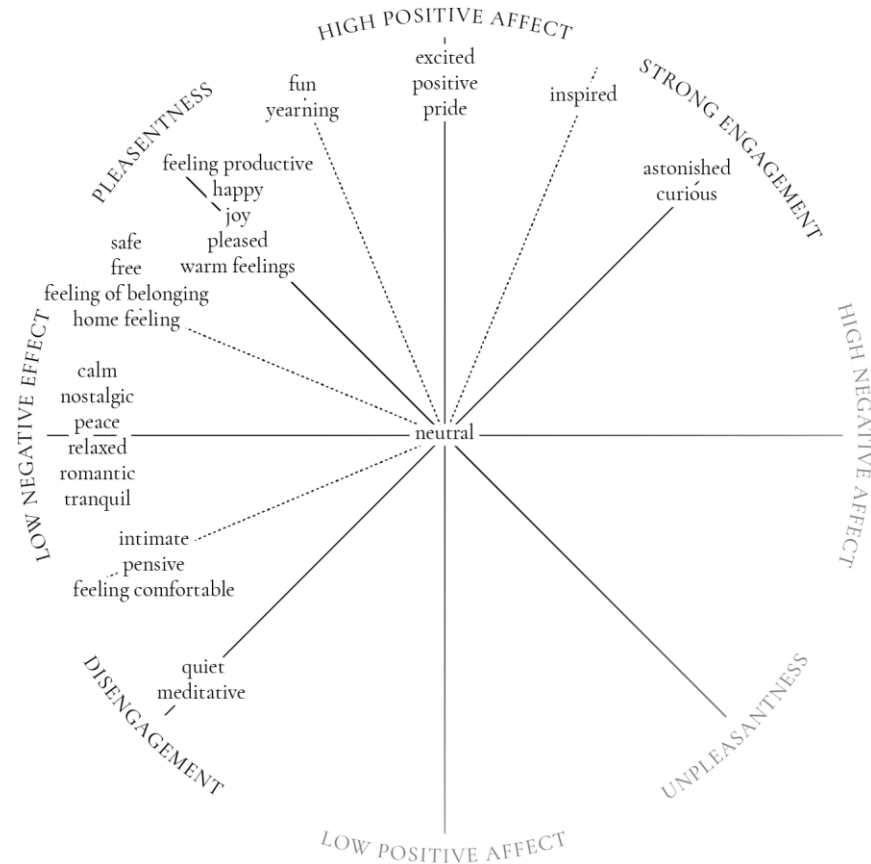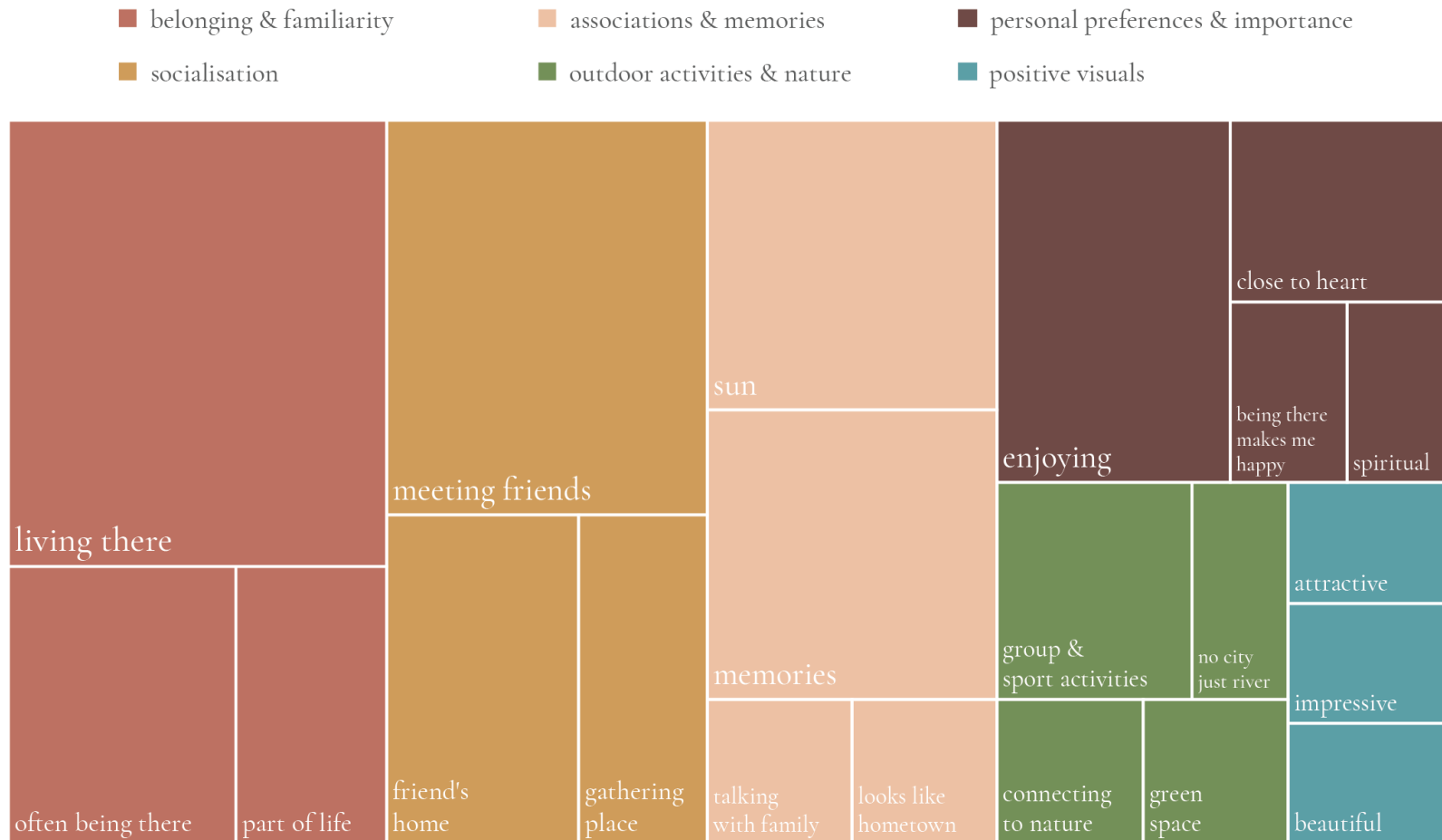*Emotions which connect people to the places (left);*
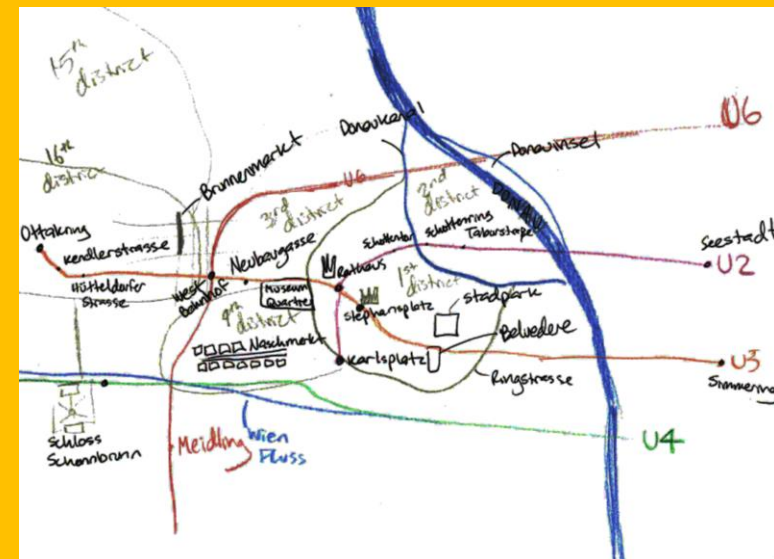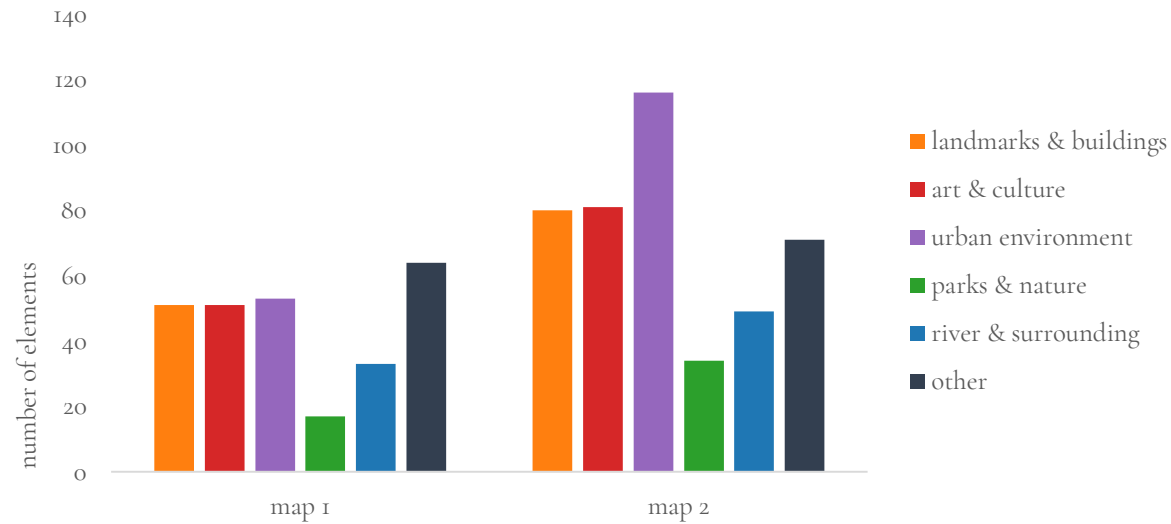*words describing emotions placed on the two-dimensional structure of emotions (right)*

# Why do respondents associate their emotions to particular landmarks and places?

- ■ belonging & familiarity
- ■ associations & memories
- ■ personal preferences & importance
- ■ socialisation
- ■ outdoor activities & nature
- ■ positive visuals

living there

often being there

part of life

meeting friends

friend's home

gathering place

sun

memories

talking with family

looks like hometown

enjoying

close to heart

being there makes me happy

spiritual

group & sport activities

no city just river

connecting to nature

green space

attractive

impressive

beautiful

Map elements

Categories of mental maps by the number of elements

Legend:
- landmarks & buildings
- art & culture
- urban environment
- parks & nature
- river & surrounding
- other

Visualisation

Visualisation per category

- landmarks & buildings
- art & culture
- urban environment
- parks & nature
- river & surrounding
- other

number of elements

350
300
250
200
150
100
50
0

g   p   t   g   p   t

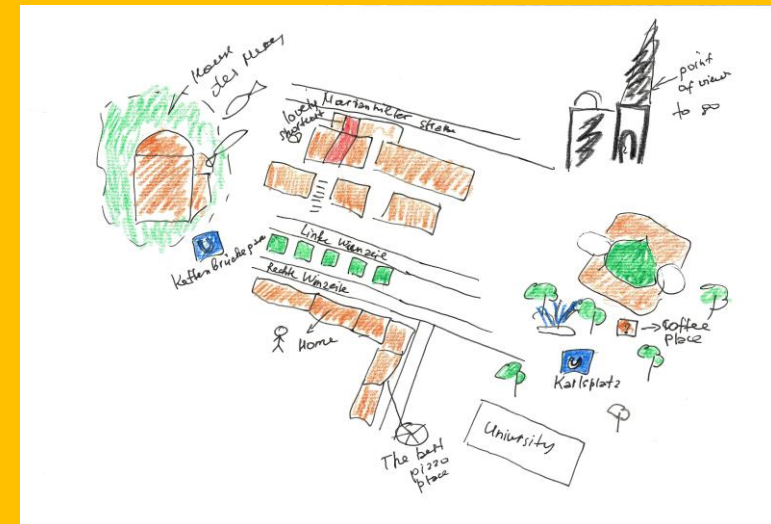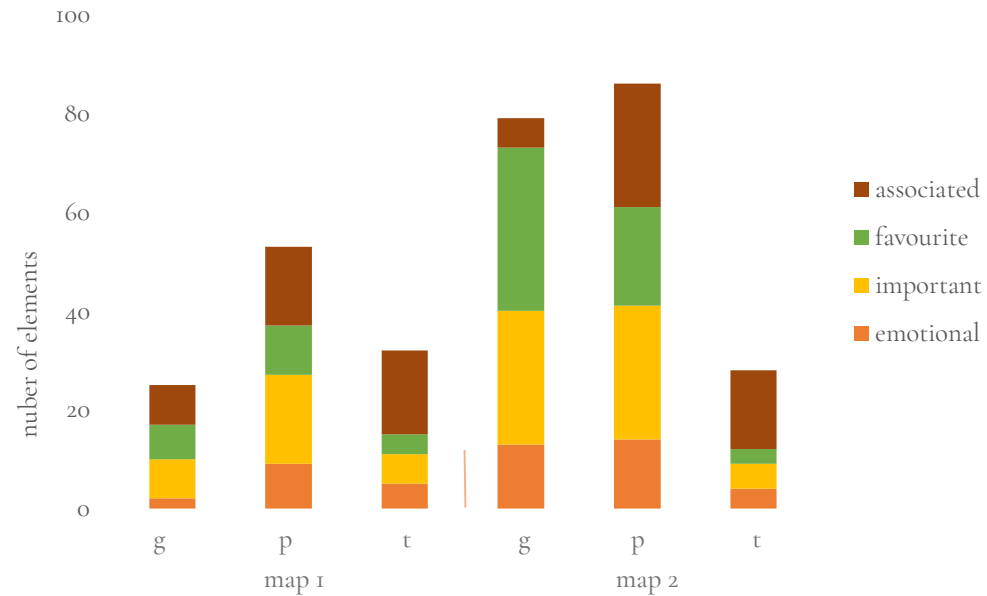map 1   map 2
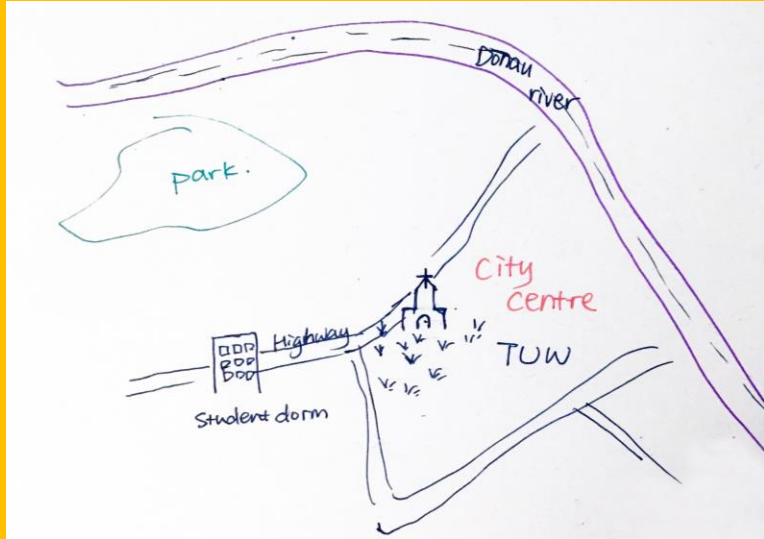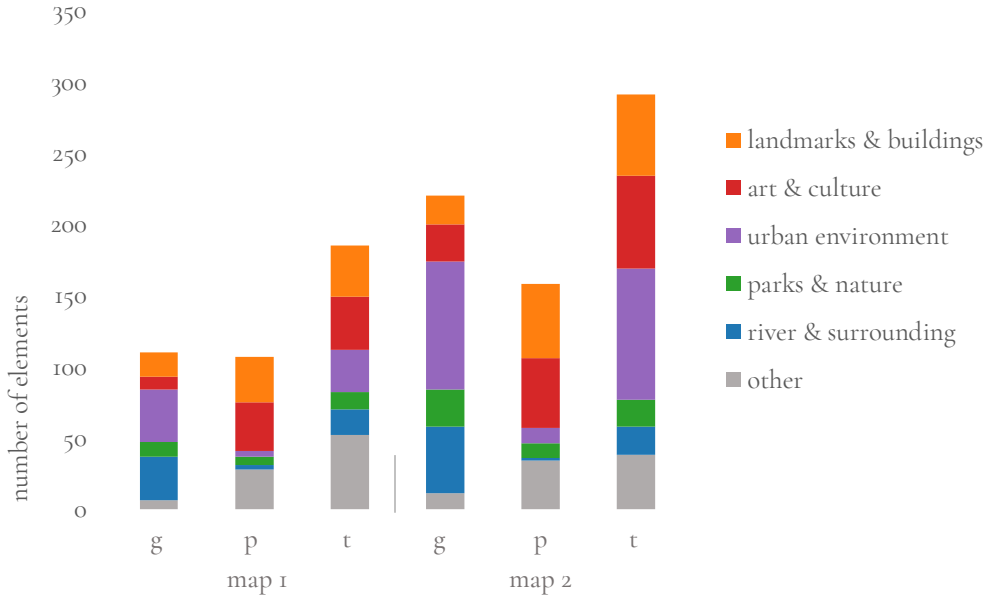
Personal relevance

Presence of the landmarks and places of personal relevance
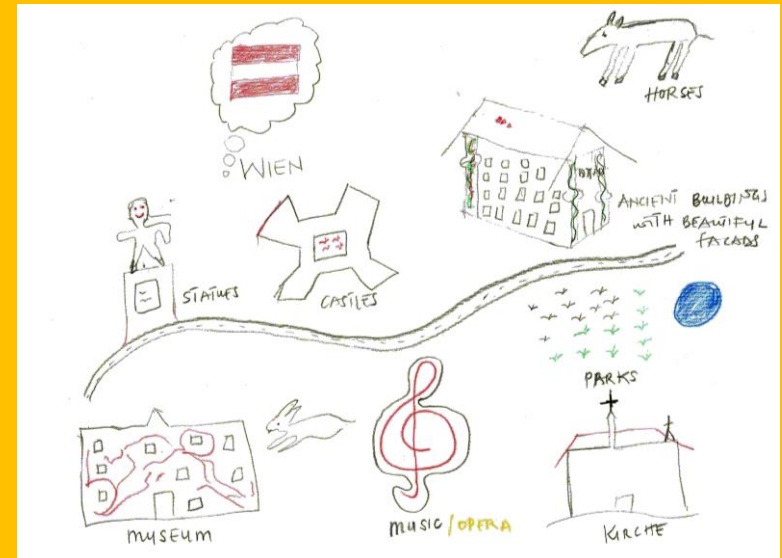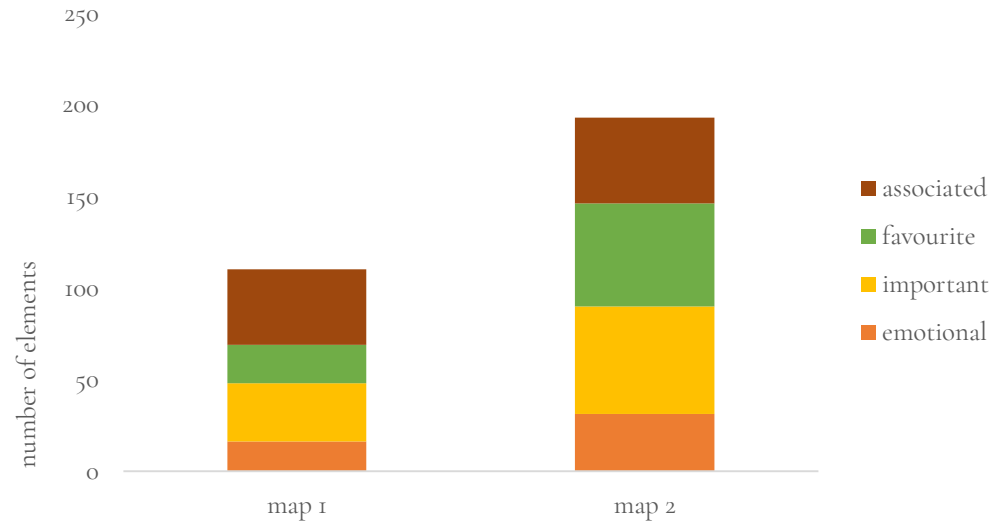
Visualisation landmarks & places of personal relevance

Visualisation of landmarks and places of personal relevance

4 Conclusion

Mental maps & related emotions

before visiting
the place

are defined by
associations & **experiences**
(first-hand, recent, cognitive experiences)

RQ
1

after exploring & living
in that place

are defined by
associations & **experiences**
(living, recent, cognitive experiences, current surroundings)

RQ
2

30

The mental image of the city is affected by the
urban elements that have strong perceptual importance.

They evoke a strong and easily identifiable
image of the city enriched with
**remembered experiences** of and **emotional attachments** to places.
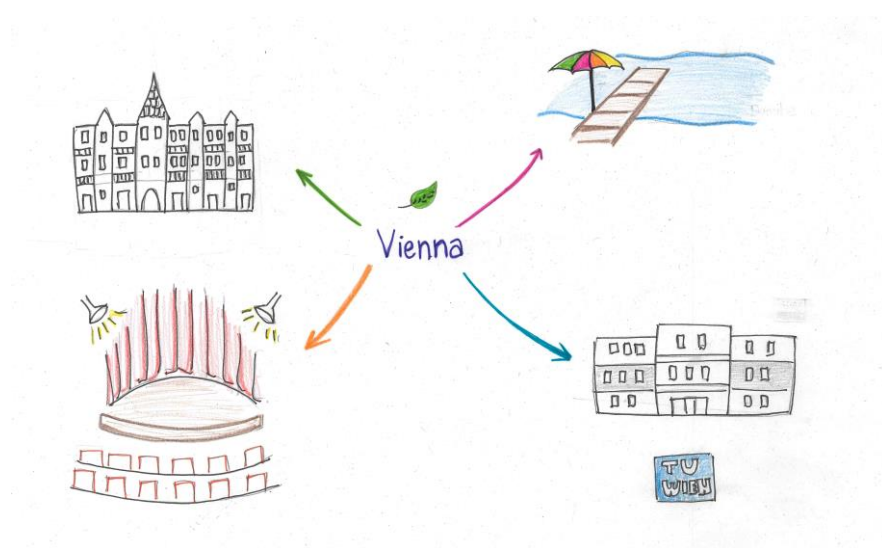
Mental maps of the city illustrate those elements that have
personal relevance for a map-maker;

i.e. they mainly show
associated, **favourite**, **important**, and **emotional**
landmarks and places.
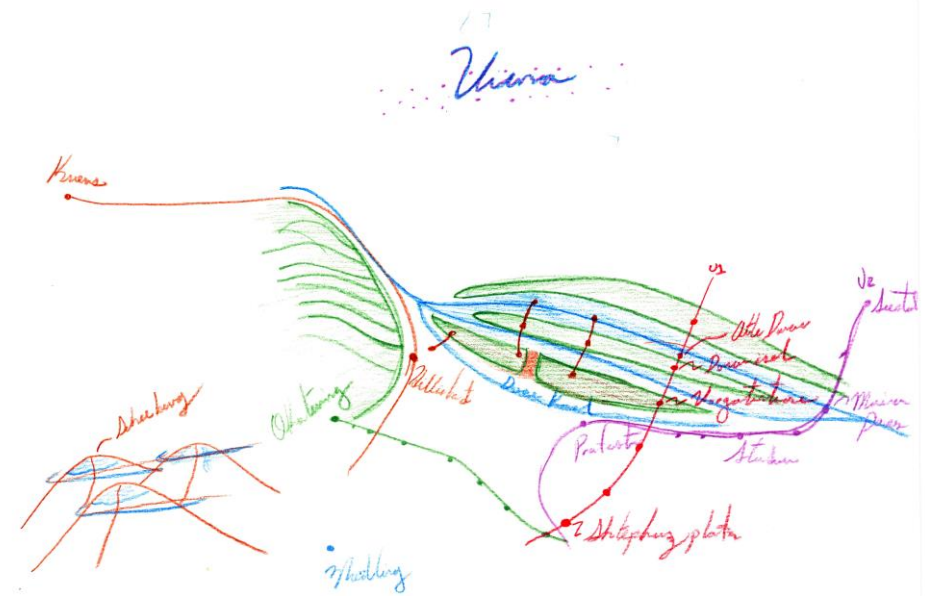
Having similar recent experiences (such as the 'Vienna city walk'),
does not ensure a similar visual outcome;

mental maps may significantly **differ**
from time to time and person to person.
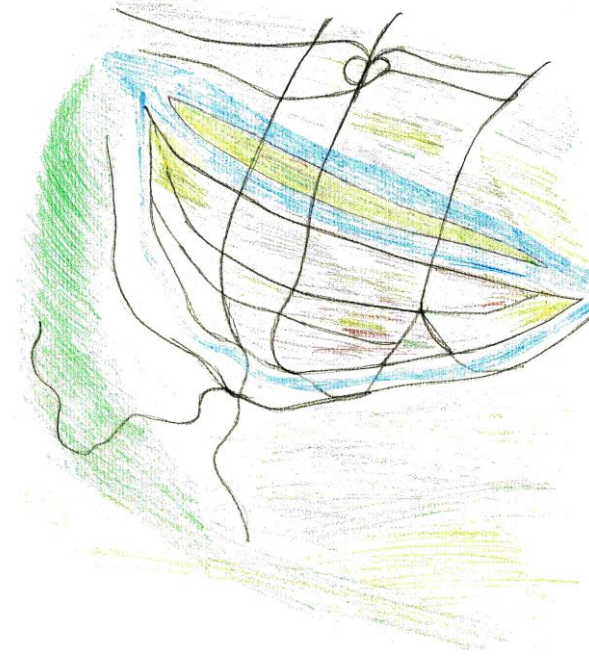
Emotions not only affect the mental mapping process,
but they are also integrated elements of it.

Emotions shape and **enrich mental maps** with more subjective
meanings of the space defined by personal experiences.

RQ
3b
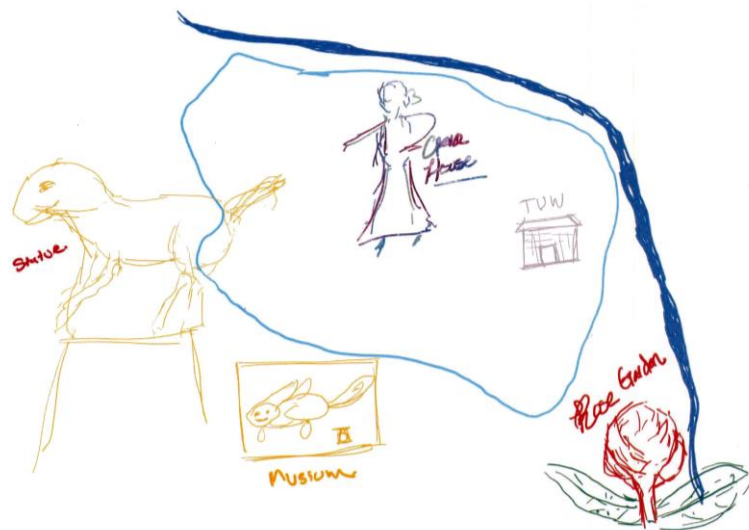
5 outlook

- Enriching understanding of mental maps and their importance as a research method

- Further research in perception of place & spatial thinking by using mental mapping method

- Systematical studies of images of different cities

Different landmarks,
cities & seasons

Larger & heterogenous
target gtoups

Improved methods of
researching mental maps

UNIVERSITY OF TWENTE.

ITC

TECHNISCHE UNIVERSITÄT DRESDEN

Technical University of Munich **TUM**

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Thank you