

City is only noise

Creative Data Mining, FS 2016

Marco Jacomella

Problem

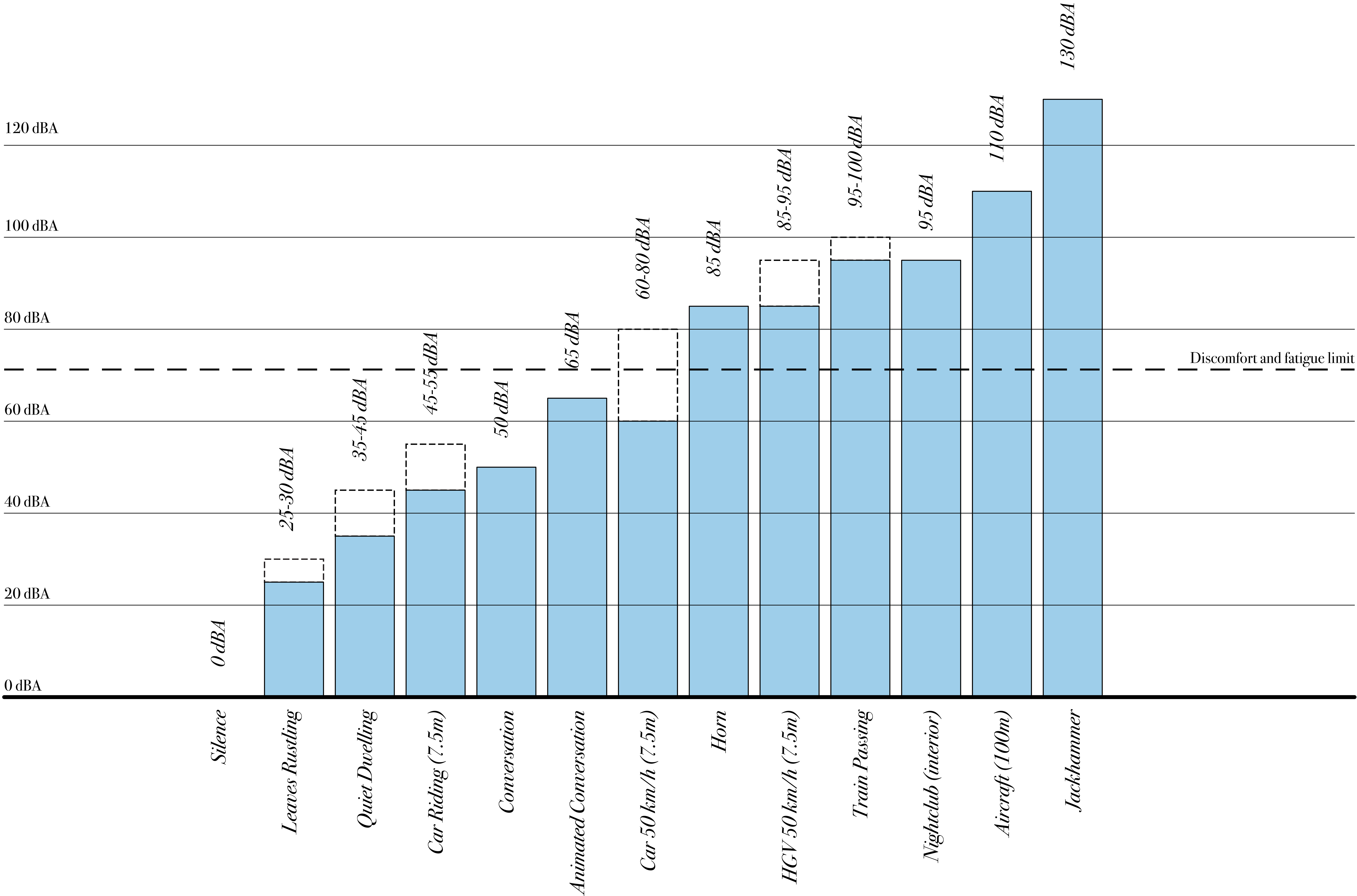
“Noise has various health, economic and social effects, the occurrence and intensity of which increase as the sound level rises.”

Noise pollution in Switzerland,
Federal Office for the Environment FOEN Bern, 2009

Questions

- Which effect has noise on spatial perception?
- How much noise influence personal perception?
- How does noise impact the liveablity of a city?

What is noise?



Survey 21st April, 2/3 P.M.

Hearing Impairment

70 dBA

Alarmwert ESII

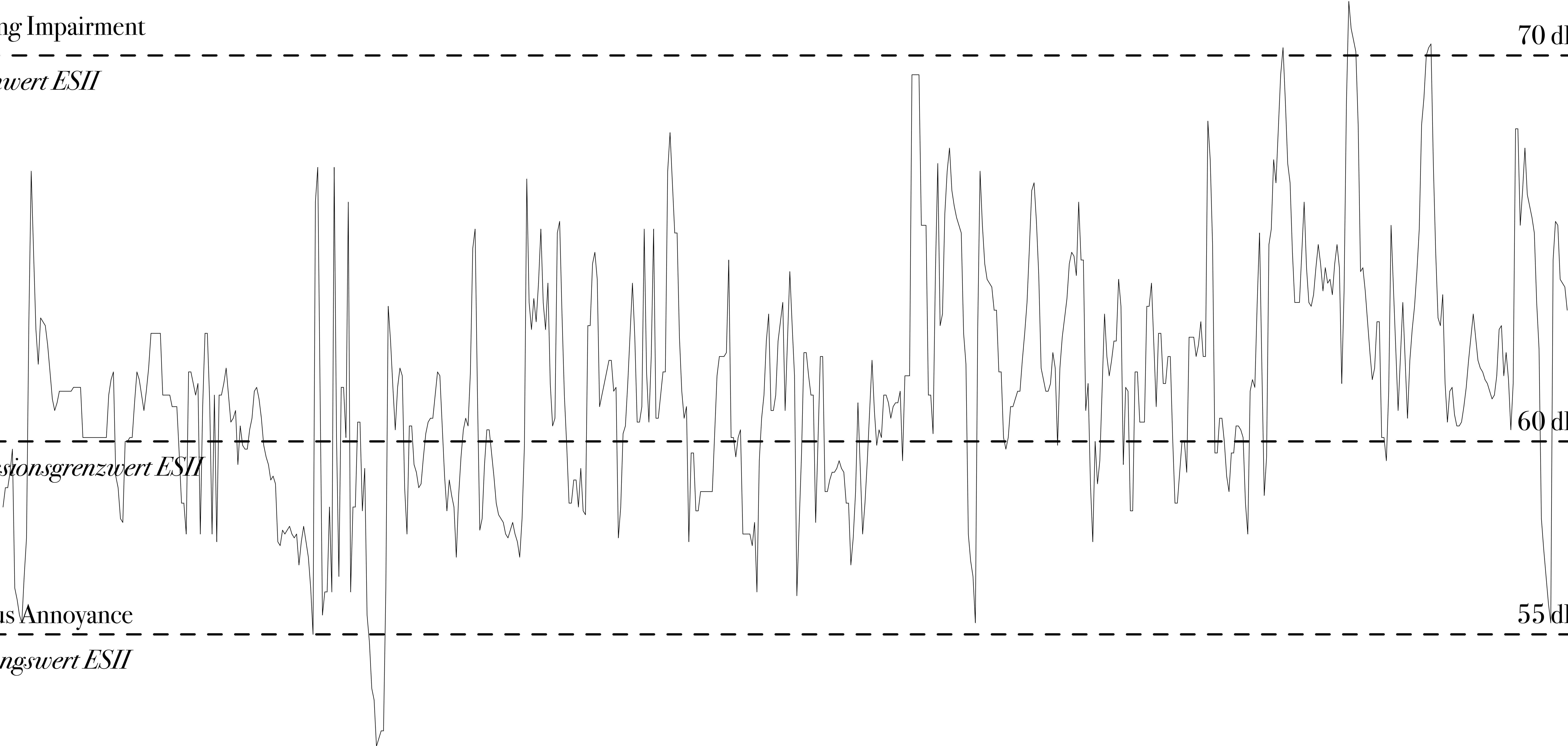
Immissionsgrenzwert ESII

60 dBA

Serious Annoyance

55 dBA

Planungswert ESII



25 Surveys. Average

Hearing Impairment

70 dBA

Alarmwert ESII

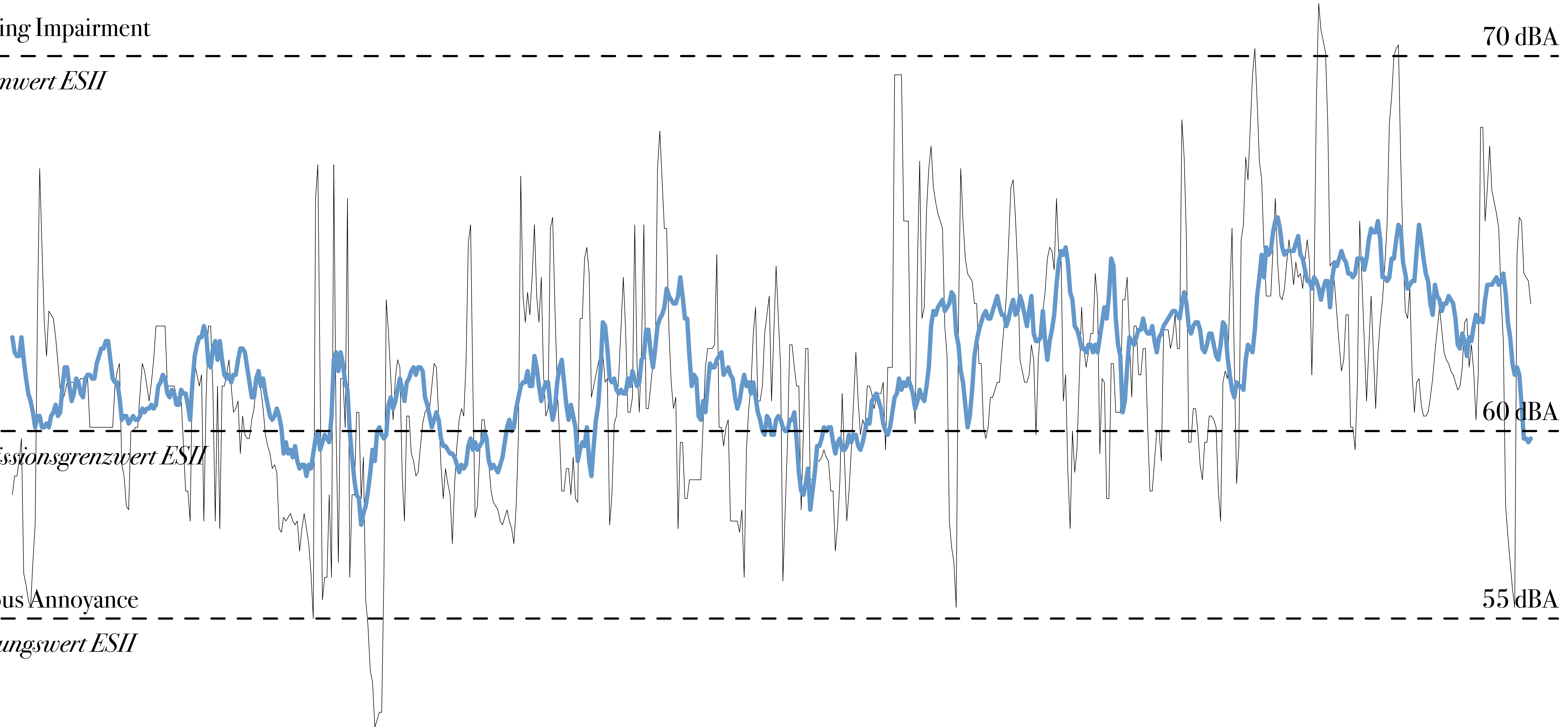
Immissionsgrenzwert ESII

60 dBA

Serious Annoyance

55 dBA

Planungswert ESII



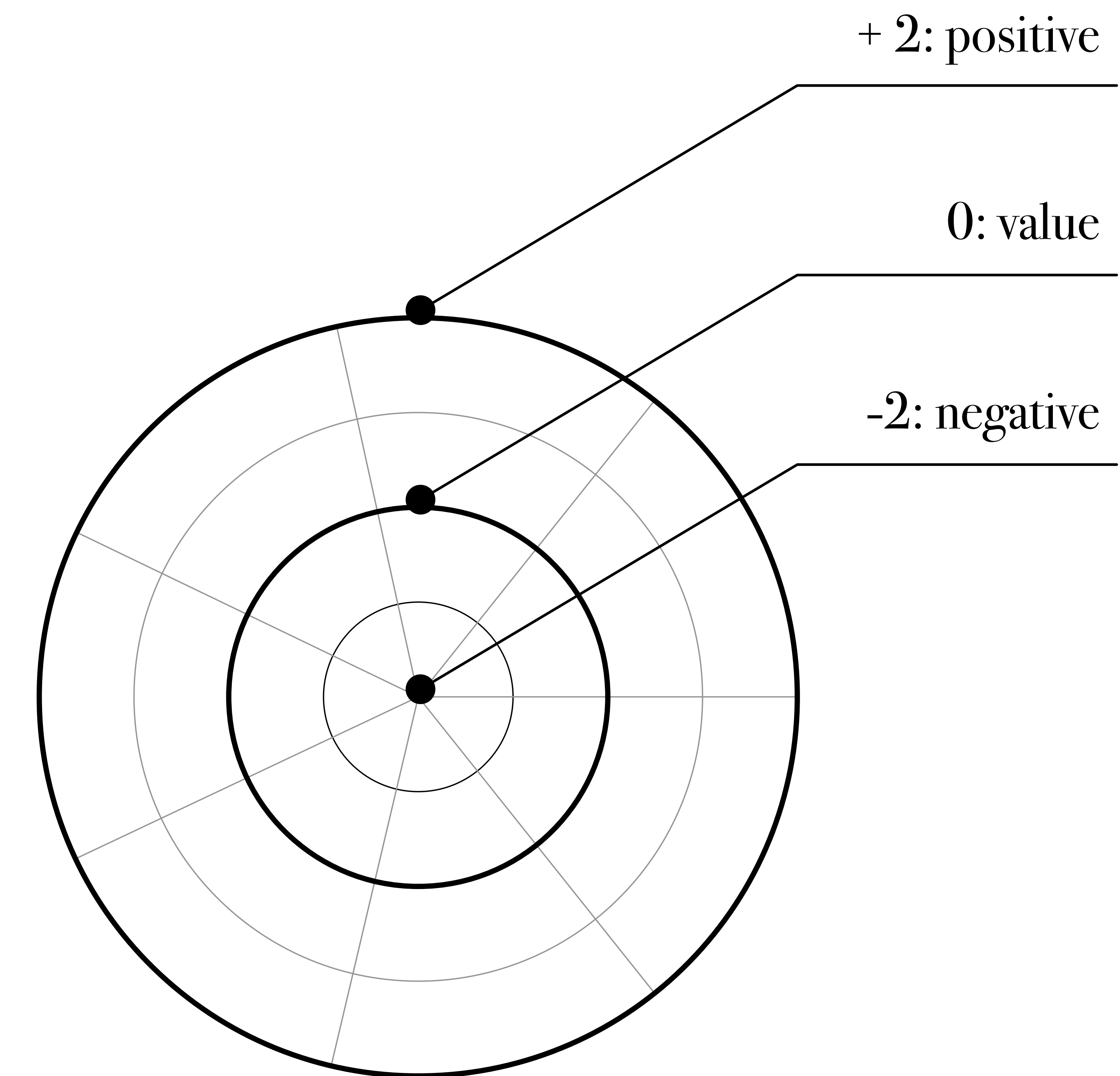
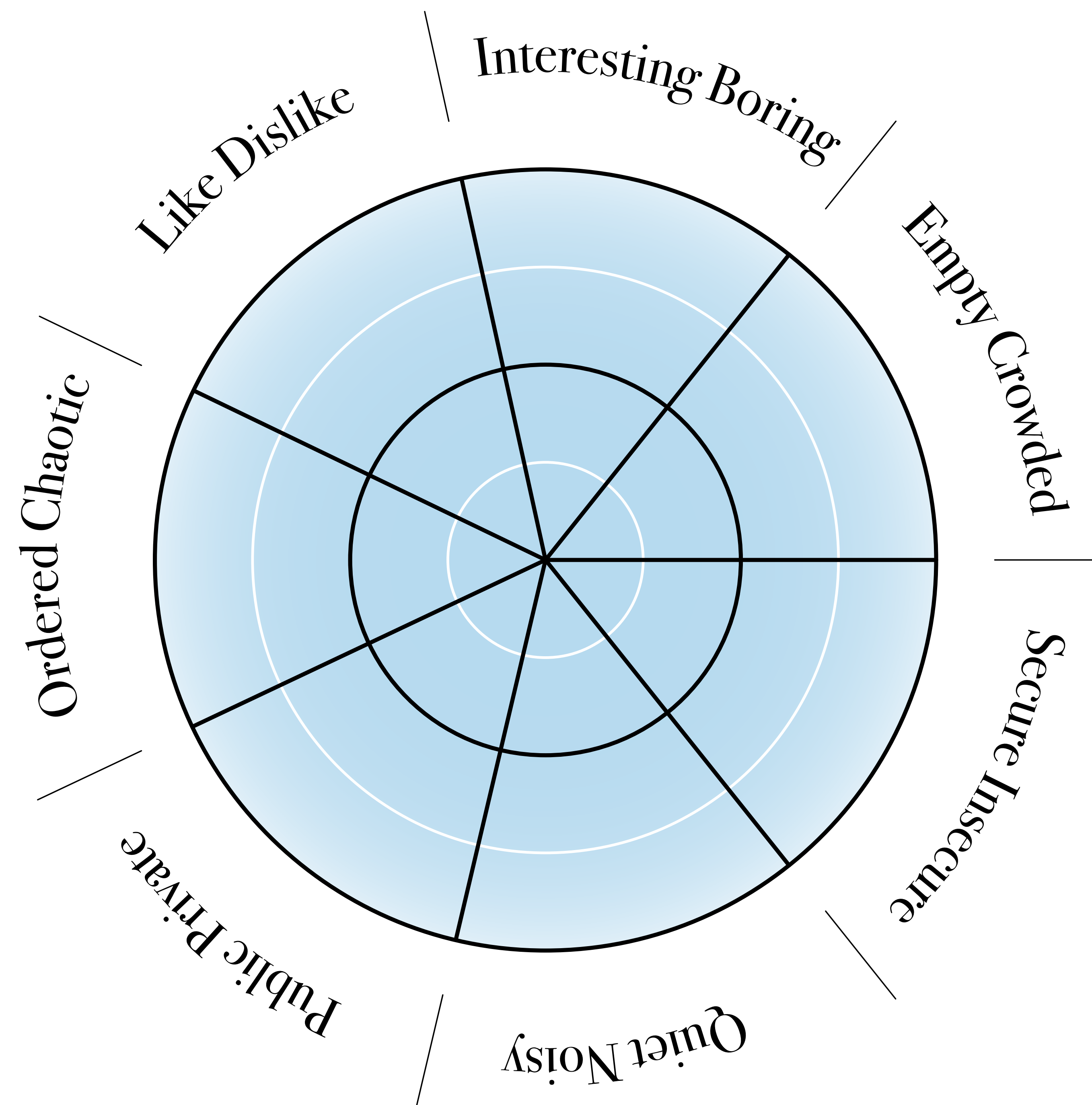
A subjective reading

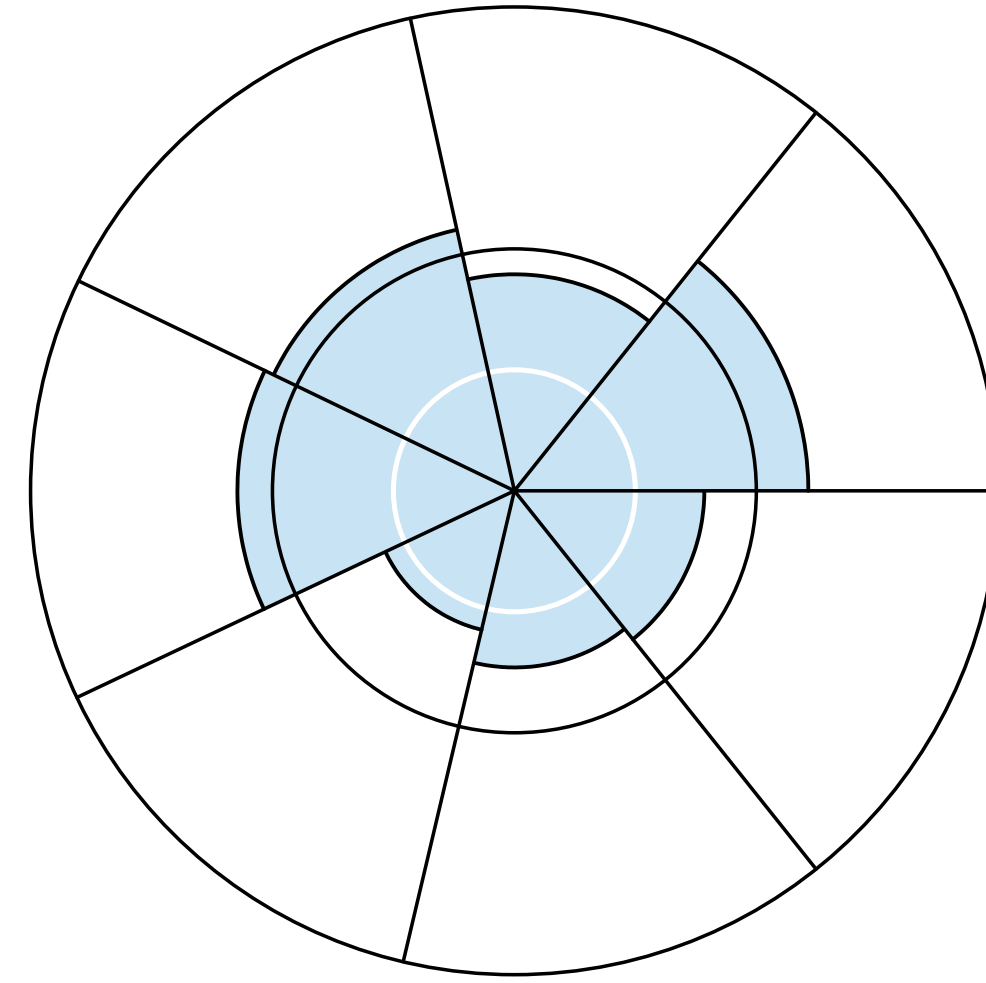
Beautiful	Ugly
Empty	Crowded
Familiar	Unfamiliar
Interesting	Boring
Light	Dark
Like	Dislike
Open	Enclosed
Ordered	Chaotic
Public	Private
Quiet	Noisy
Secure	Insecure
Spacious	Narrow

A subjective reading related to noise

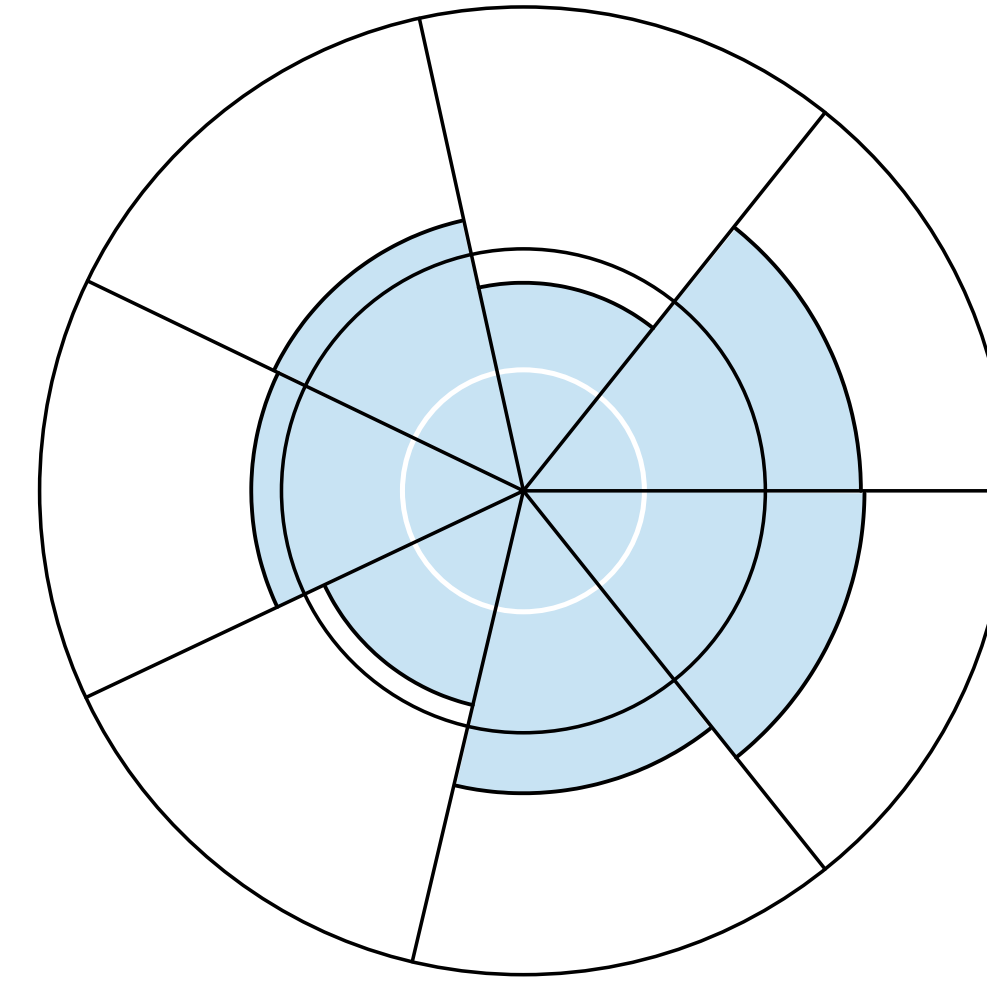
Beautiful	Ugly
Empty	Crowded
Familiar	Unfamiliar
Interesting	Boring
Light	Dark
Like	Dislike
Open	Enclosed
Ordered	Chaotic
Public	Private
Quiet	Noisy
Secure	Insecure
Spacious	Narrow

Data interpretation: radar chart

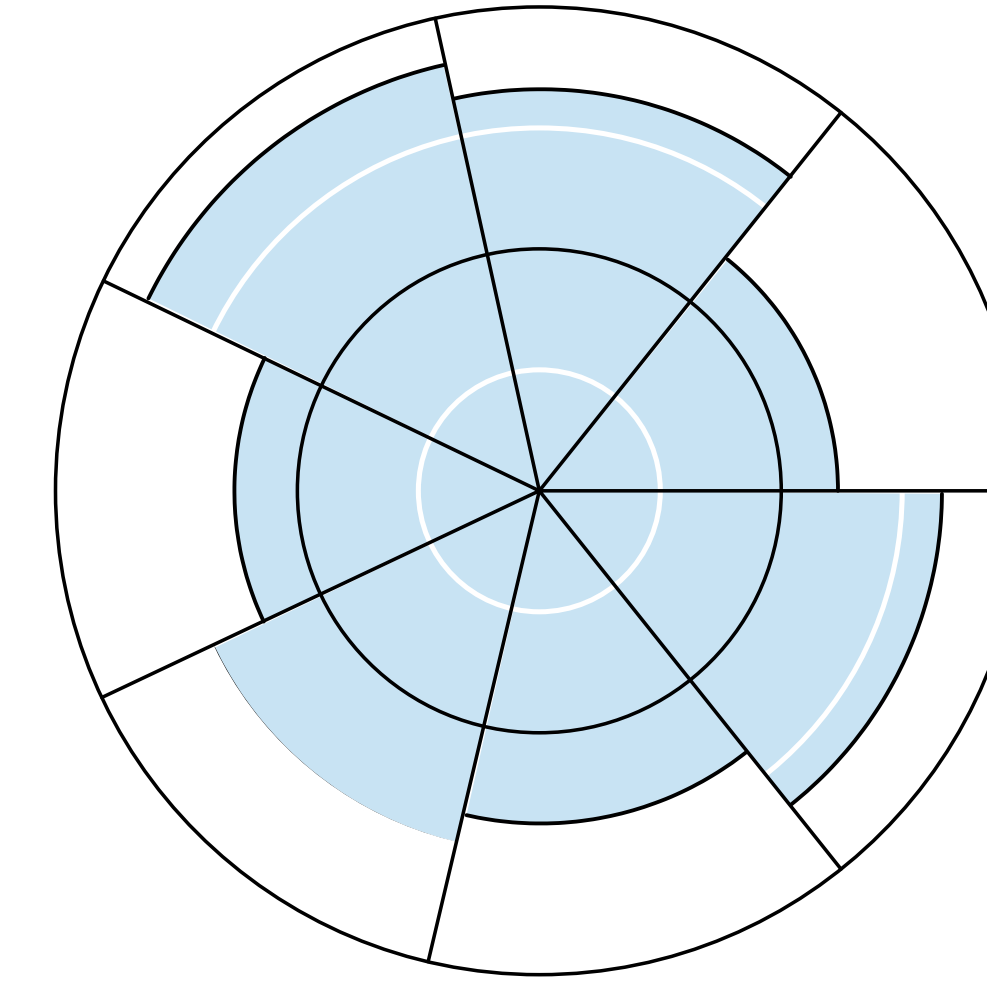




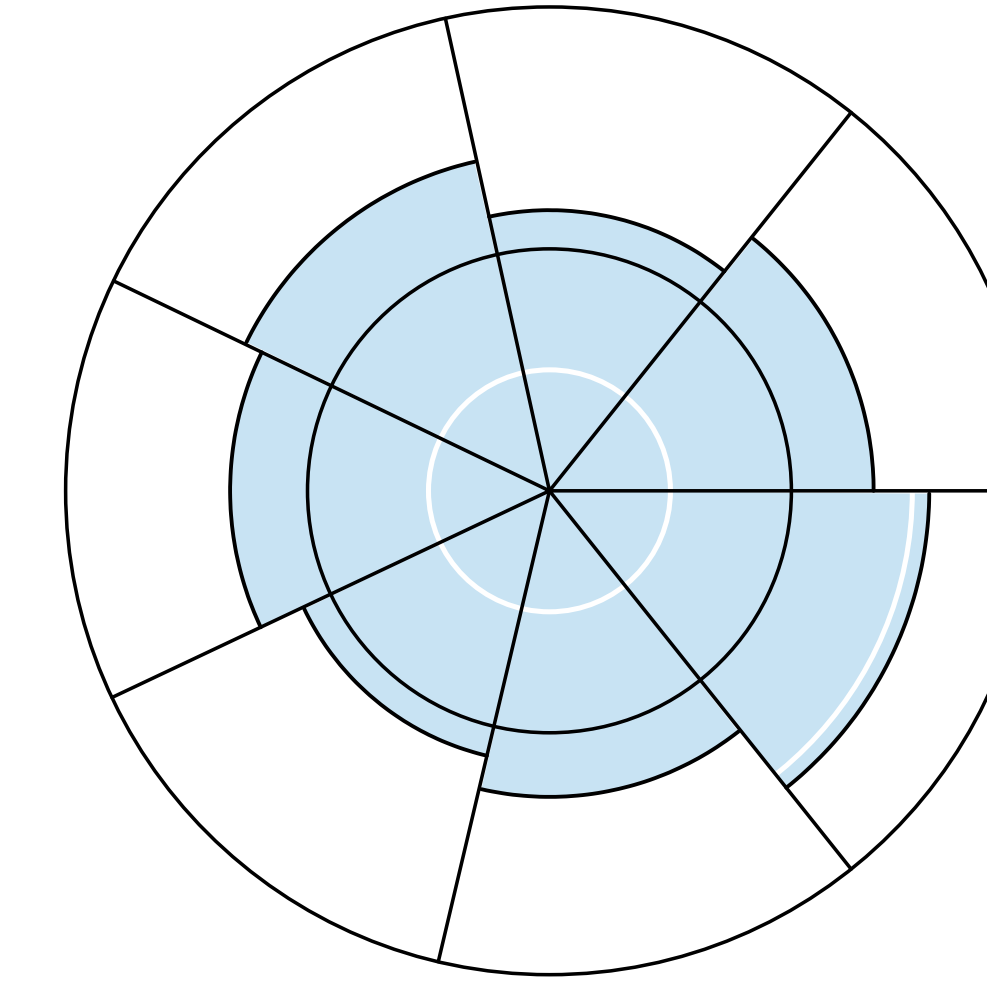
Point 1



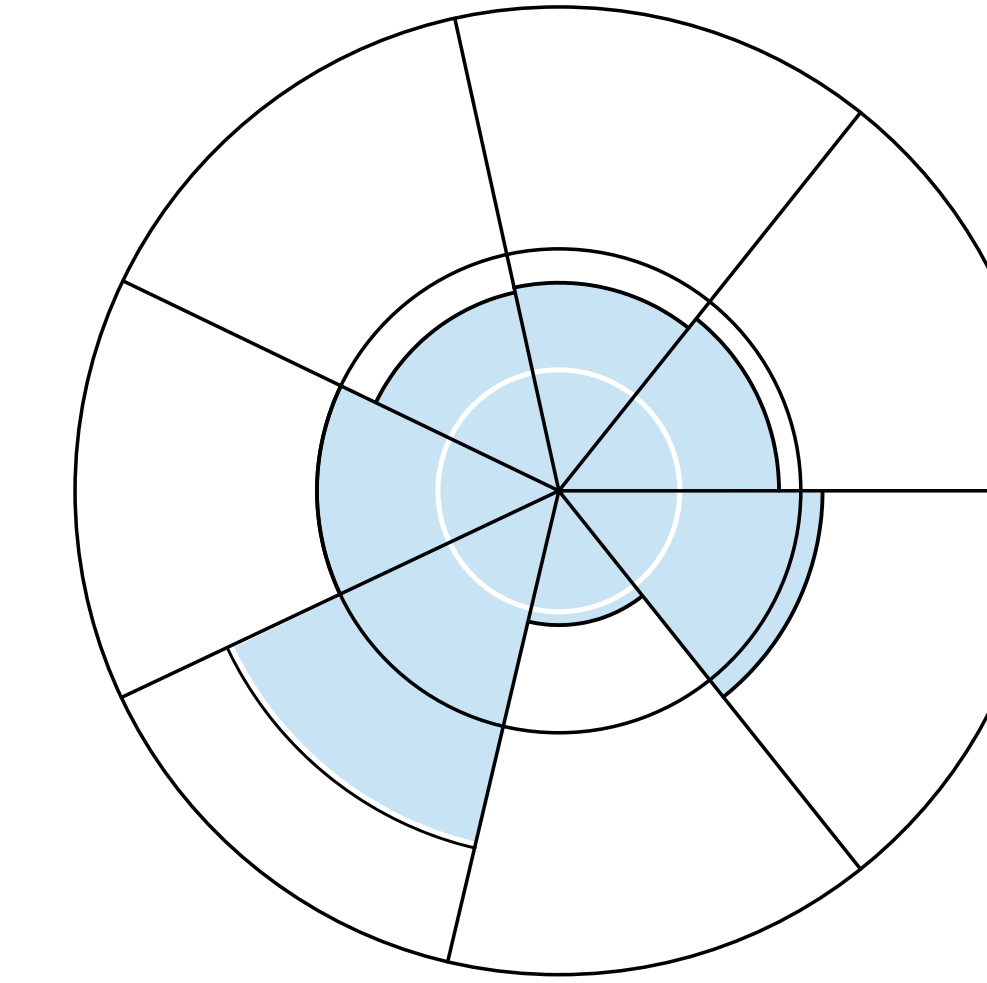
Point 2



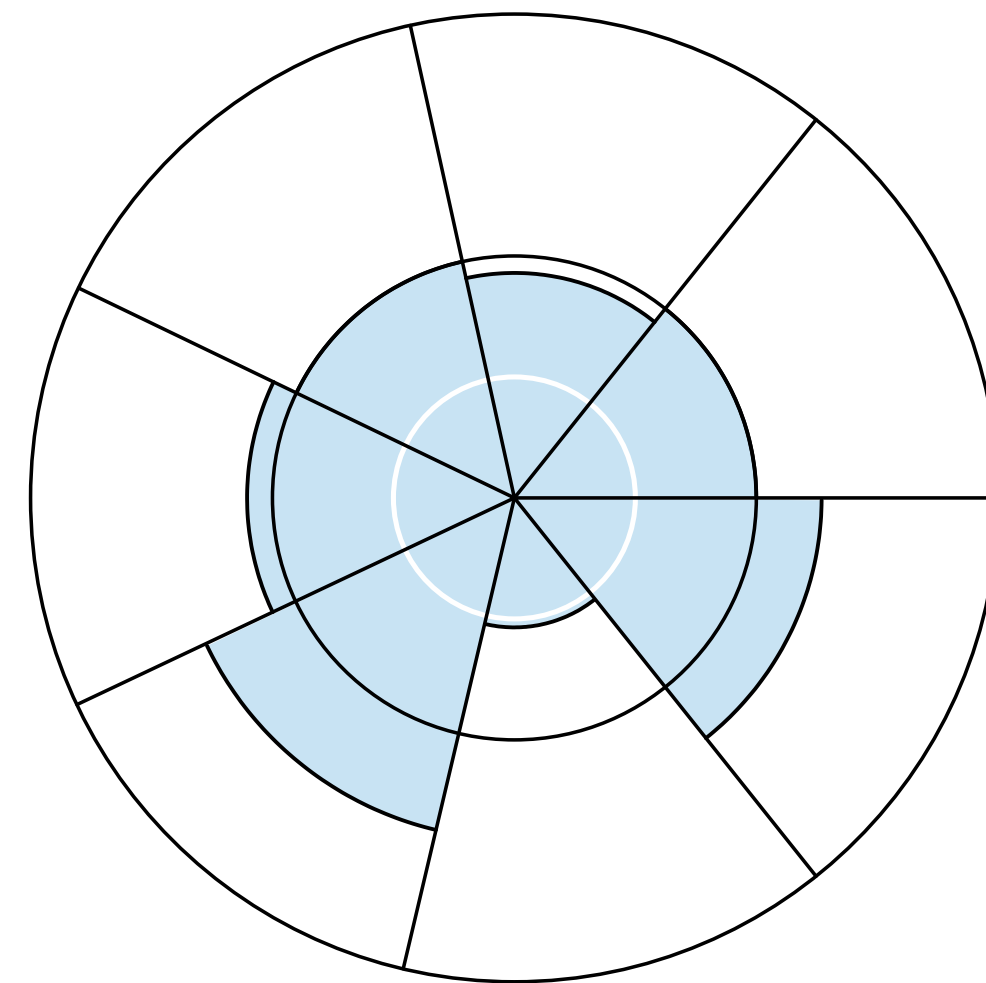
Point 3



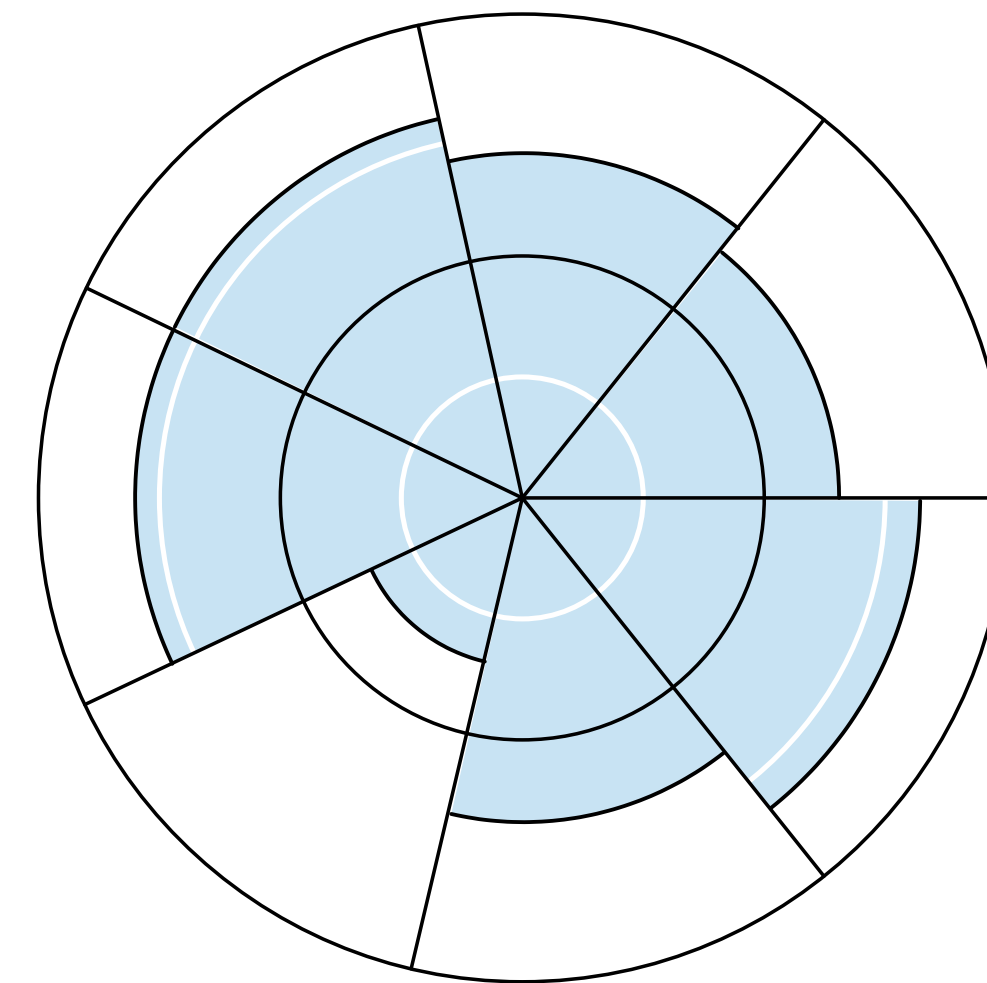
Point 4



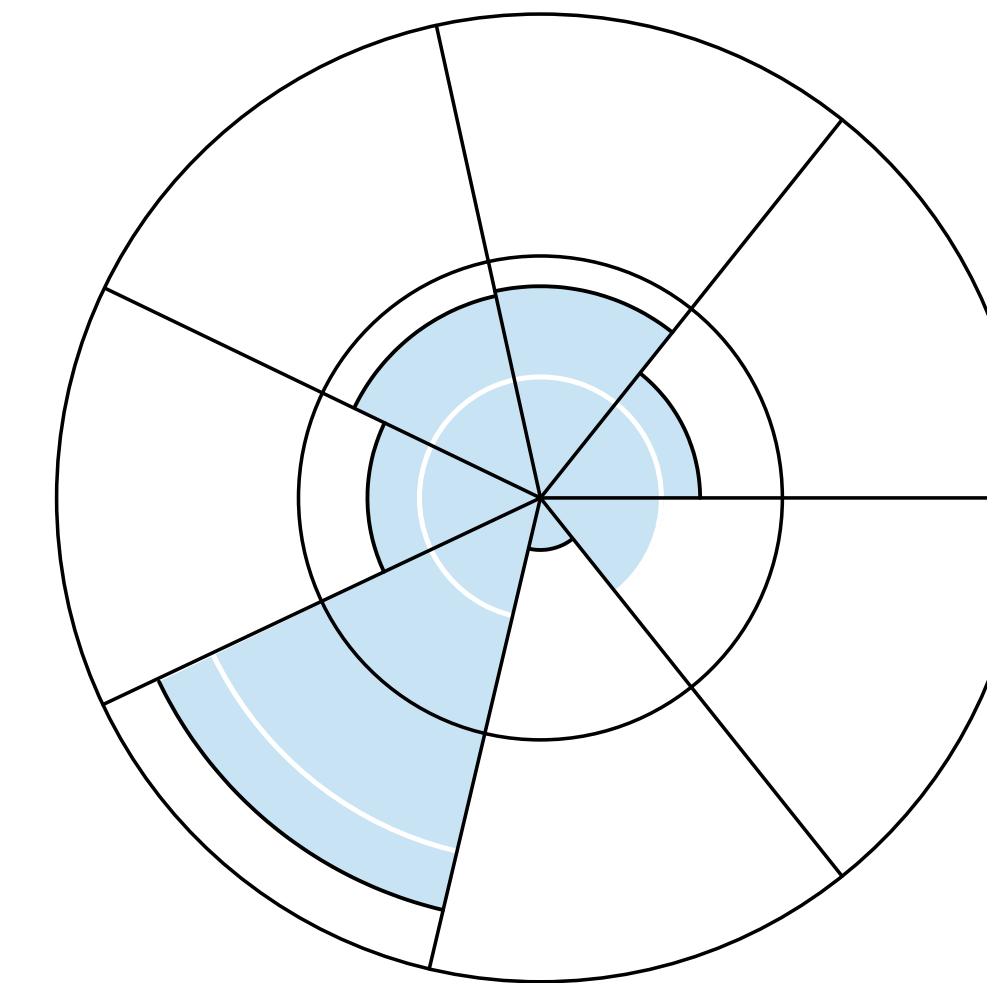
Point 5



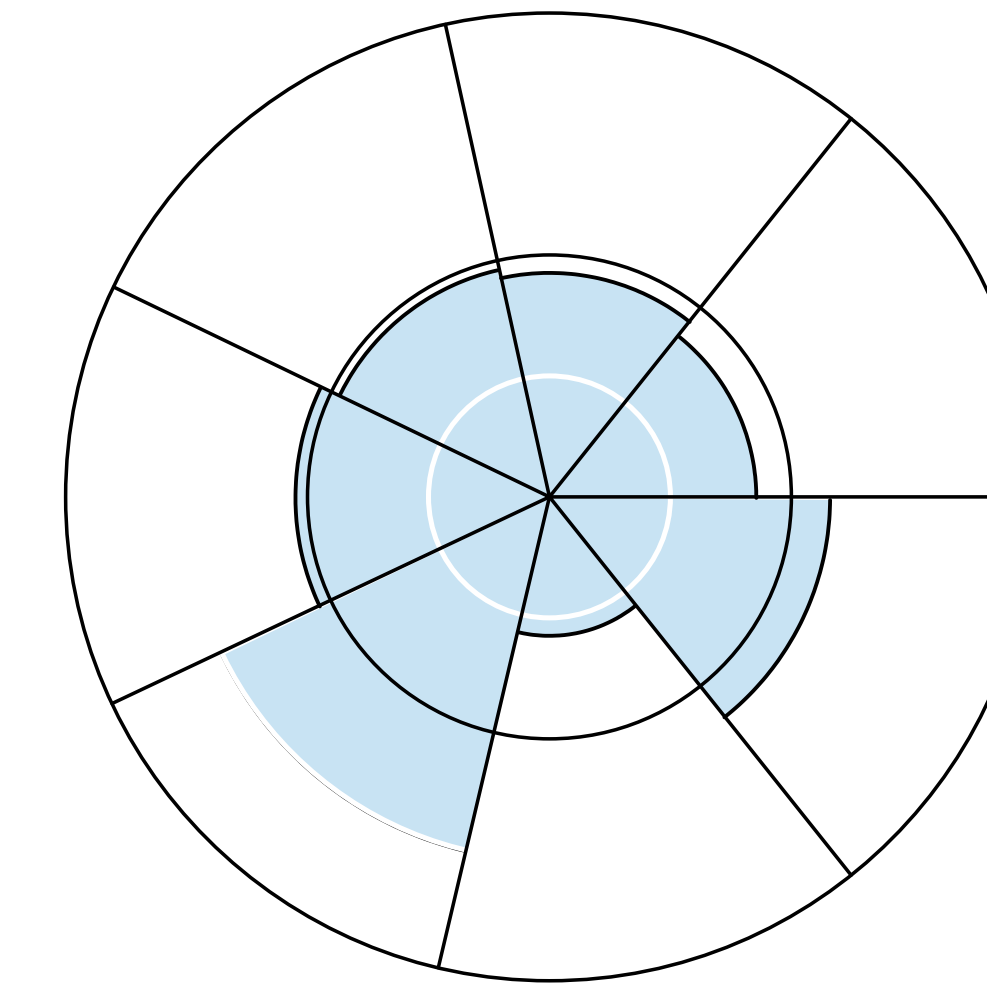
Point 6



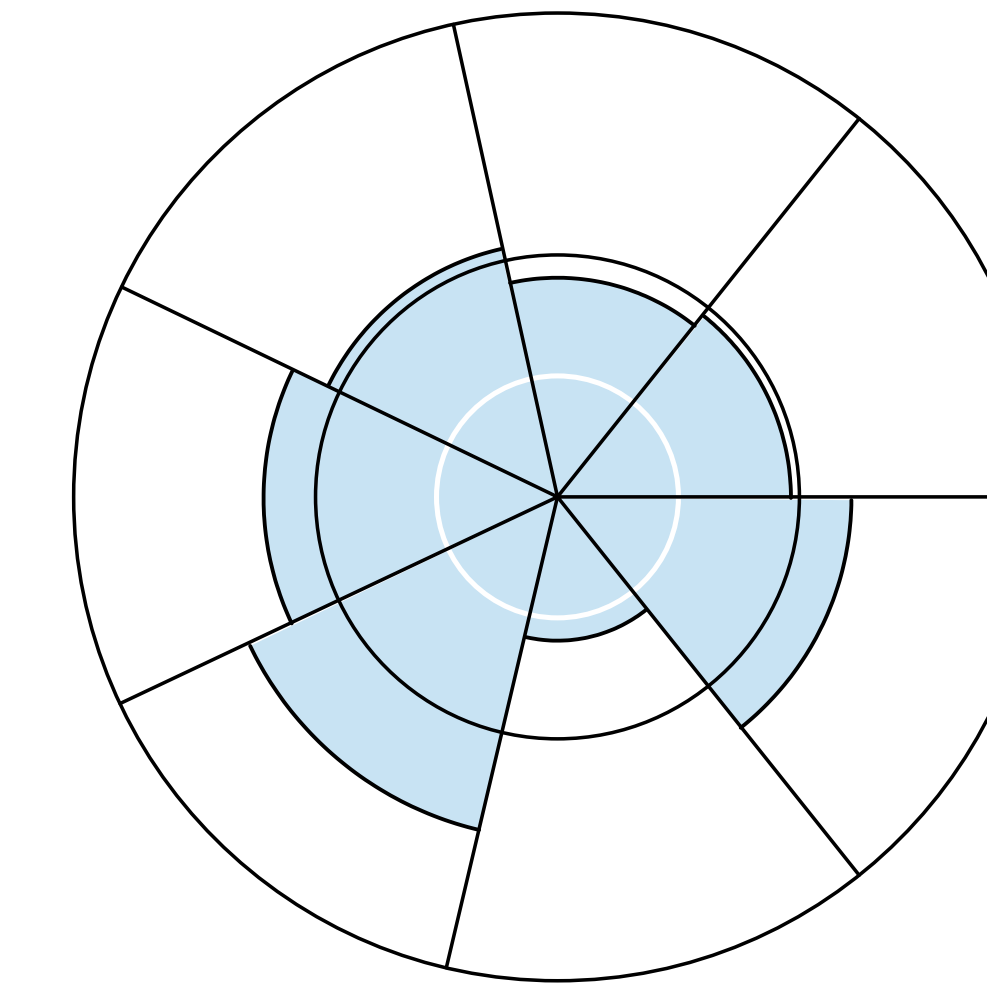
Point 7



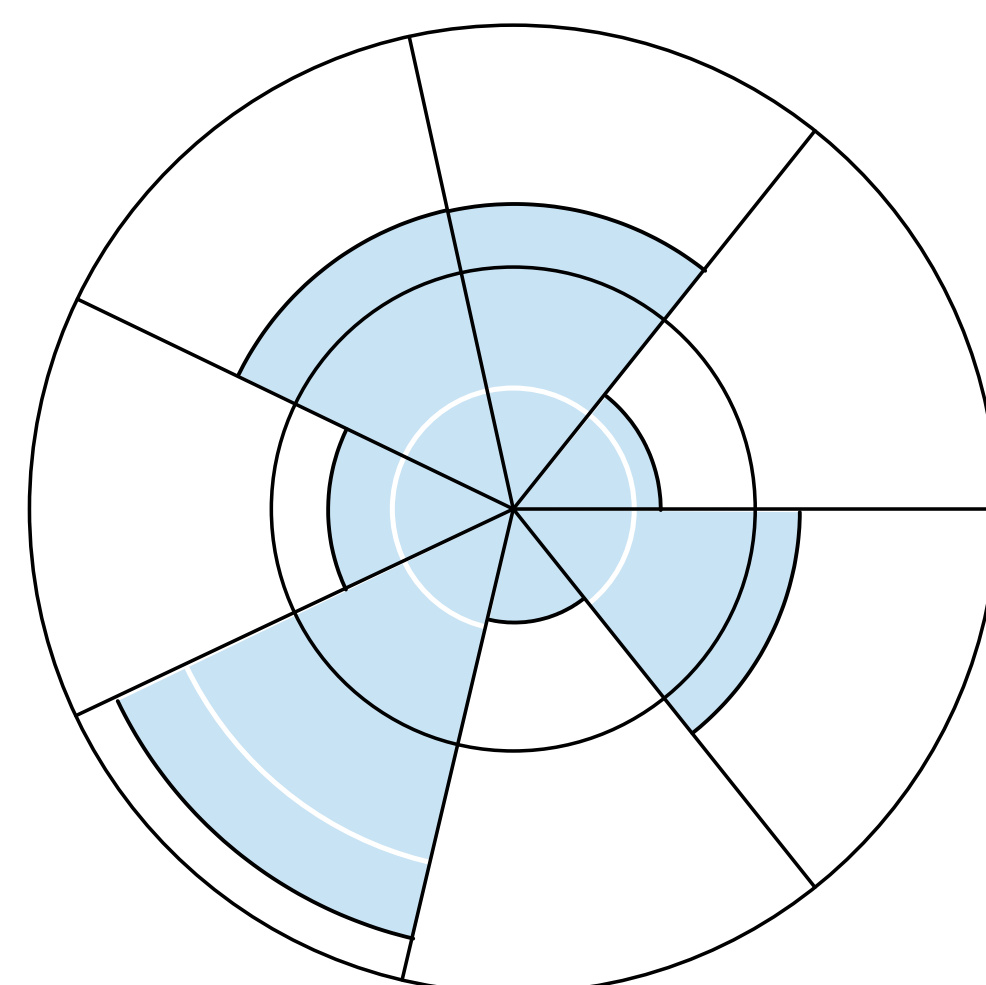
Point 8



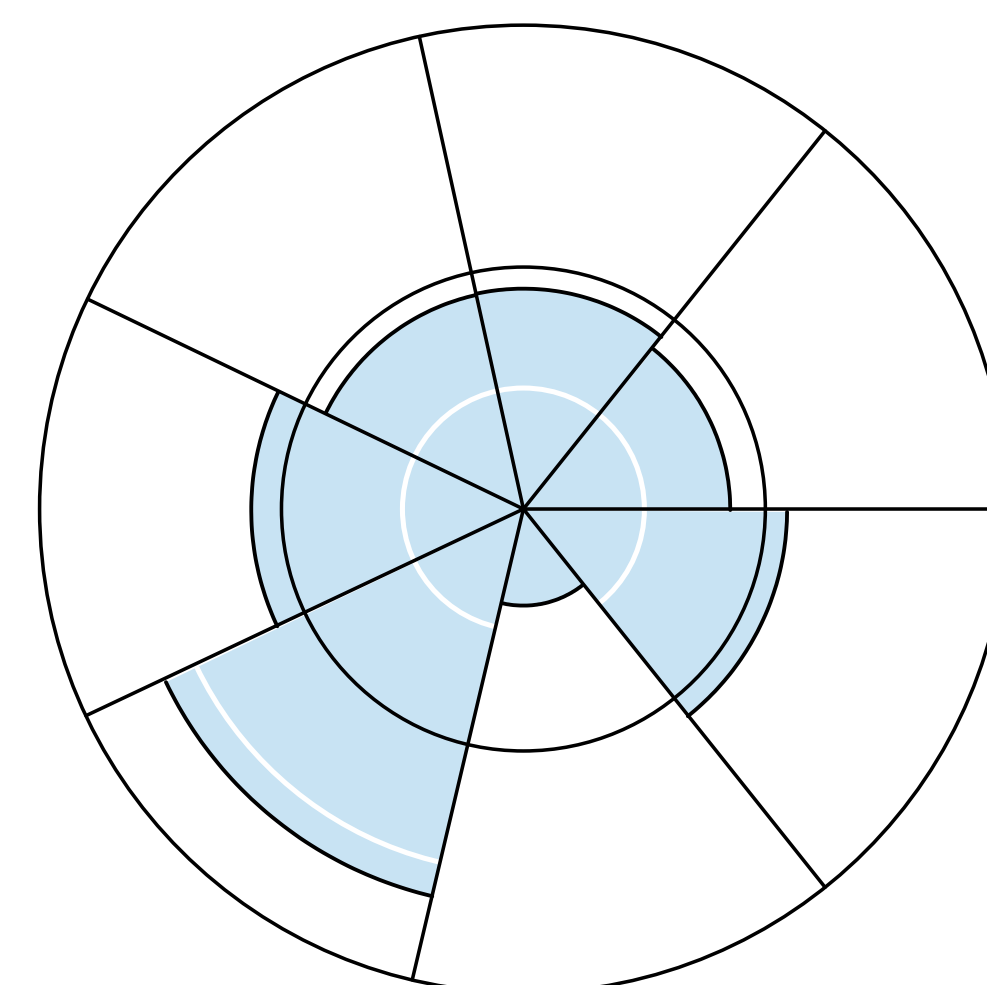
Point 9



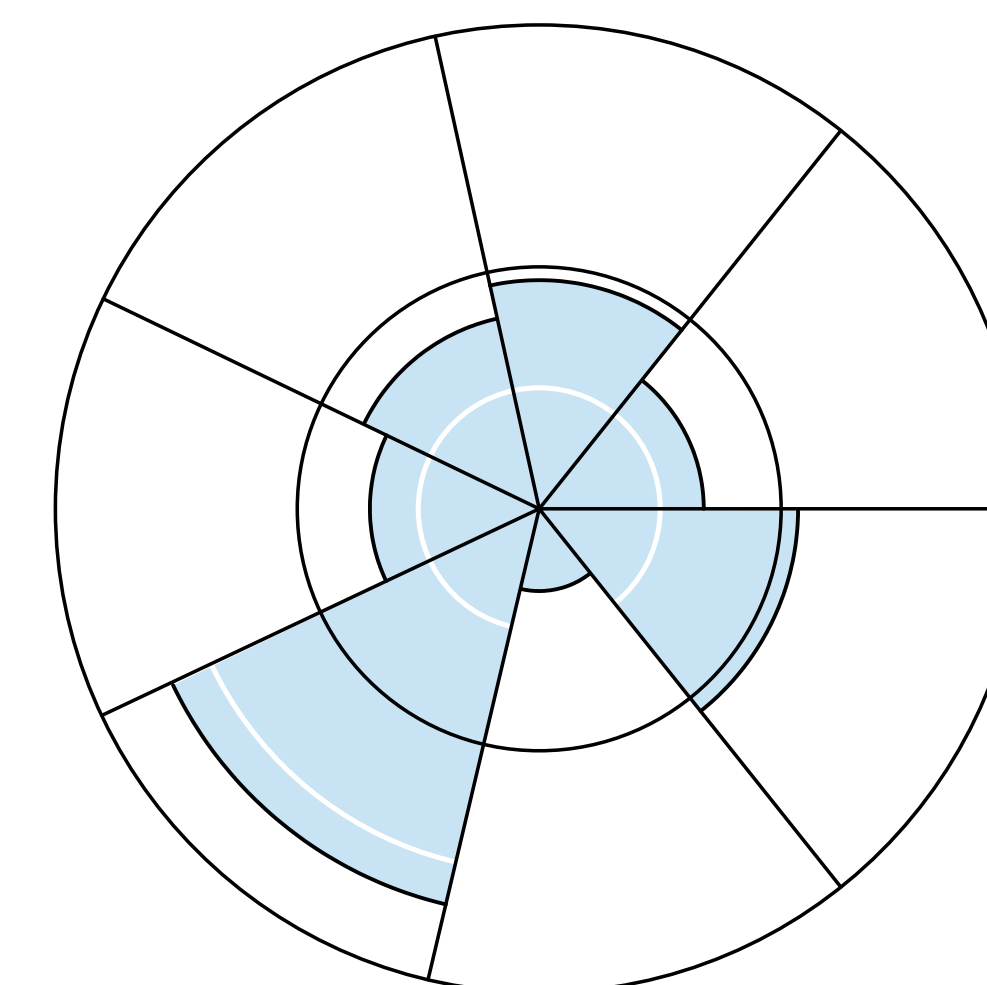
Point 10



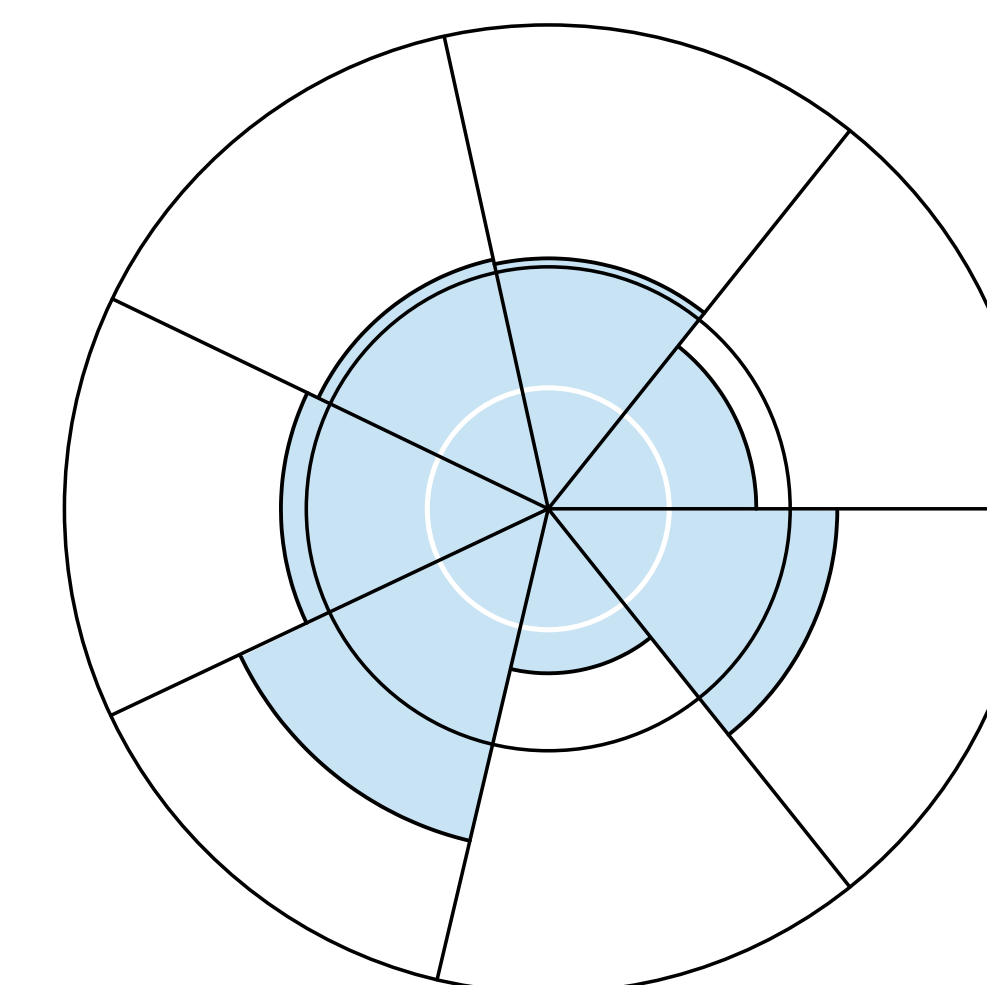
Point 11



Point 12

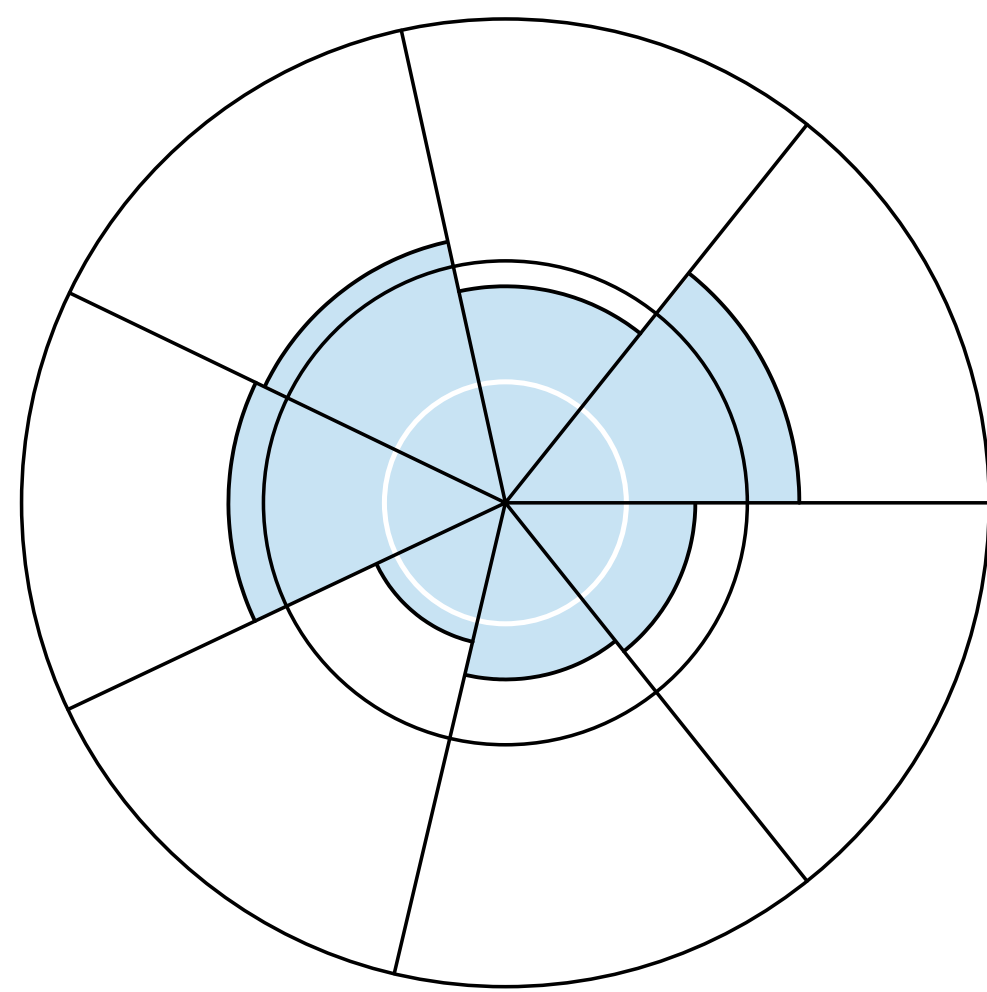


Point 13

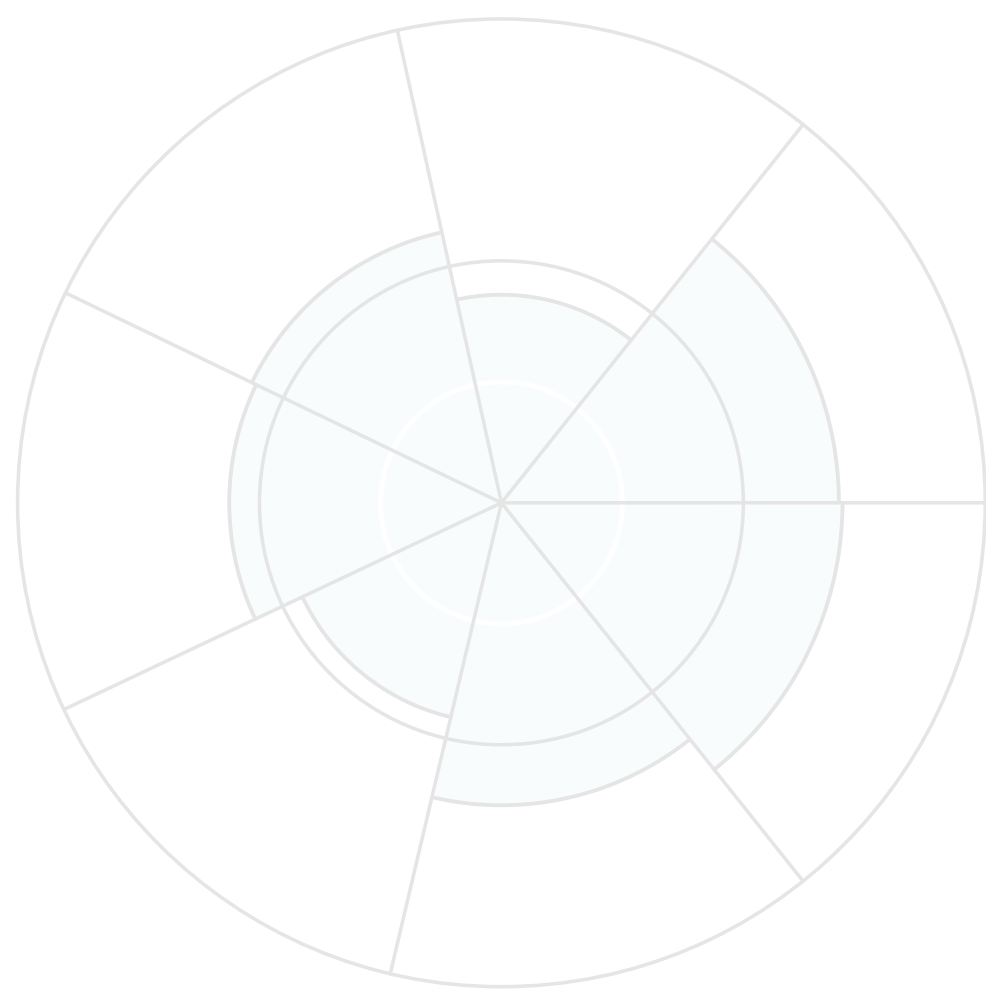


Point 14

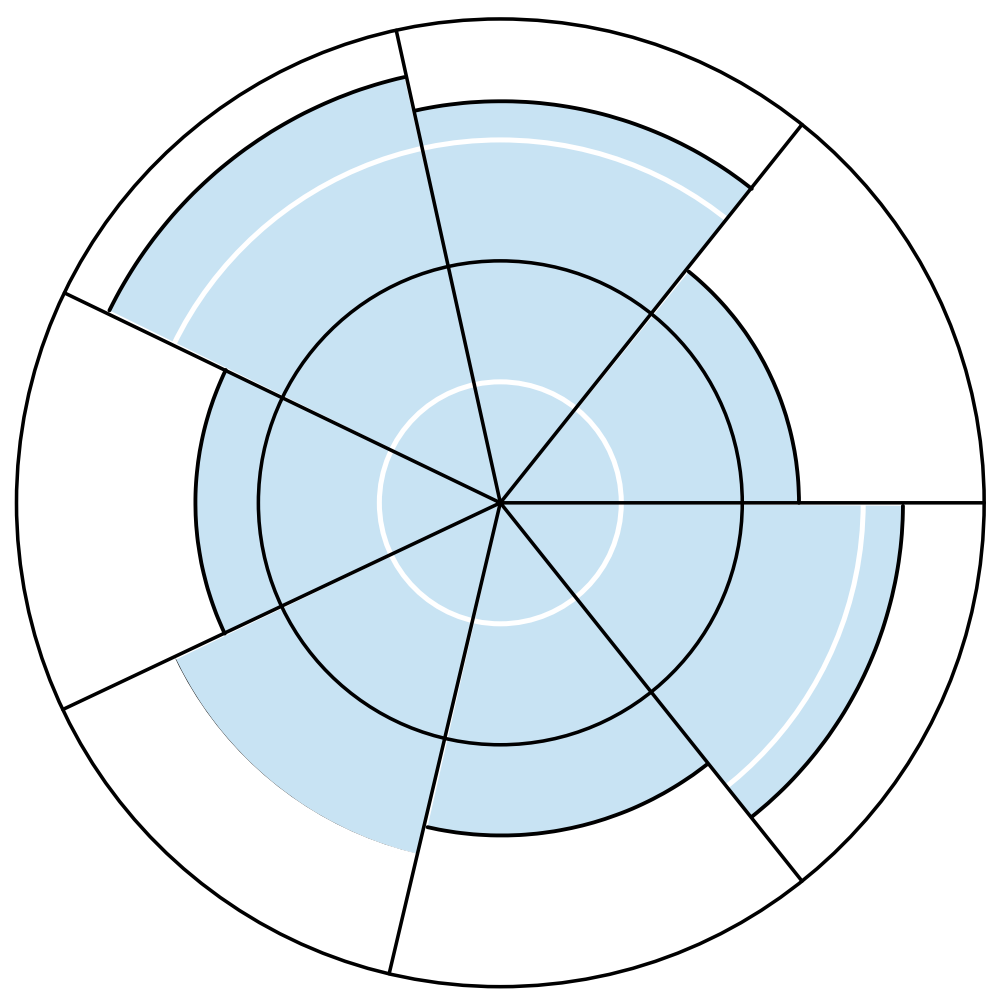
Best/Worst



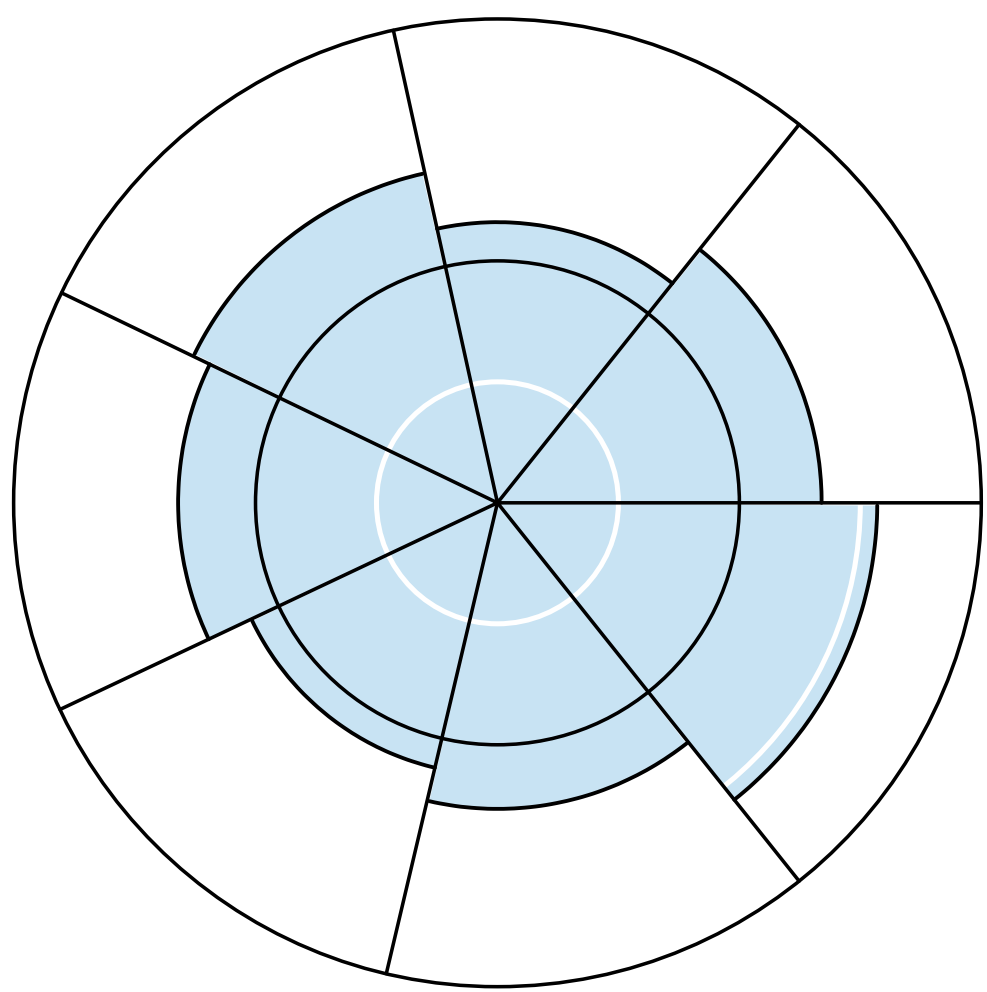
Point 1



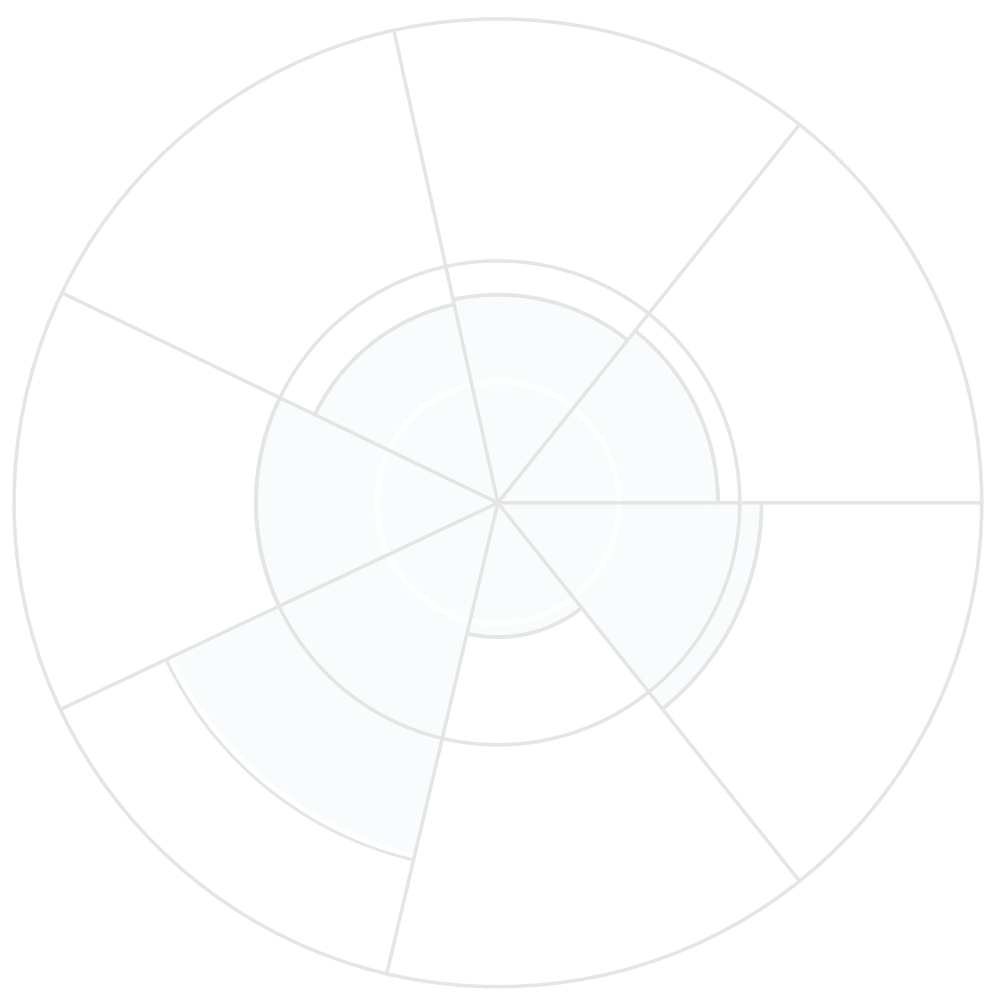
Point 2



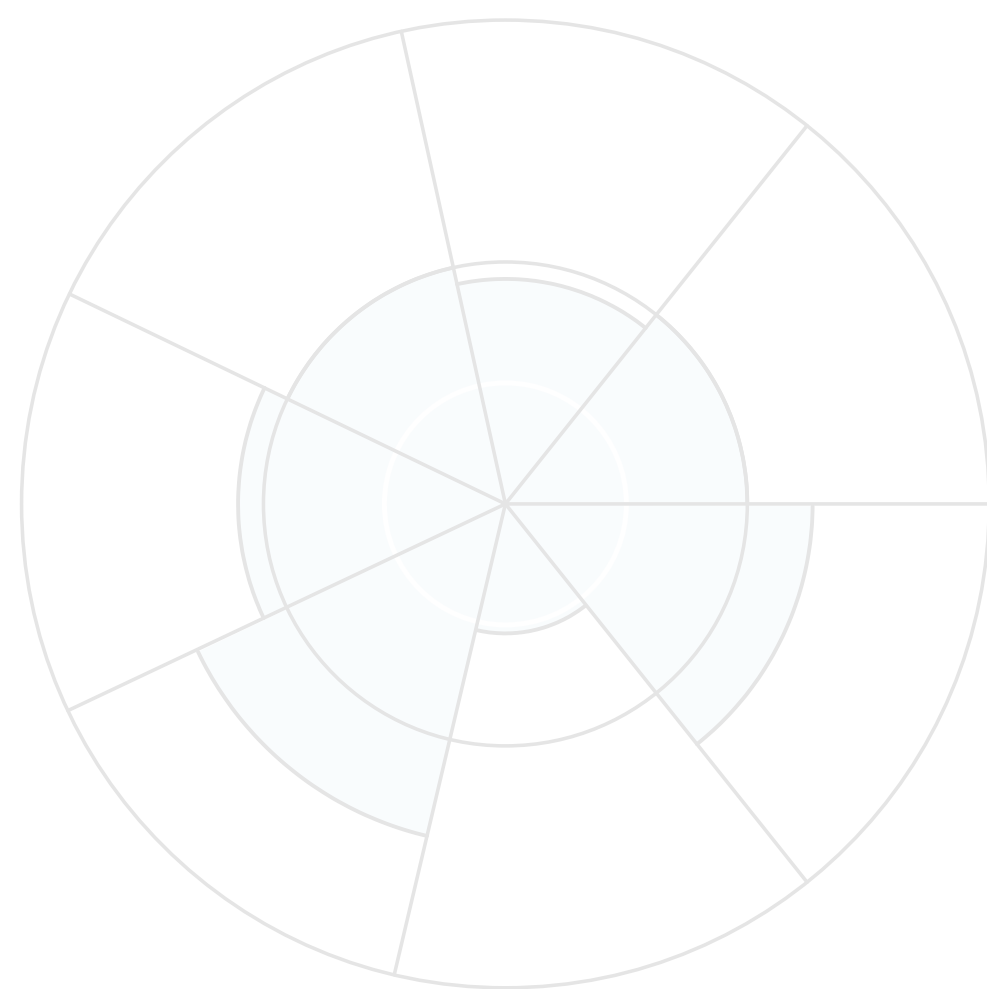
Point 3



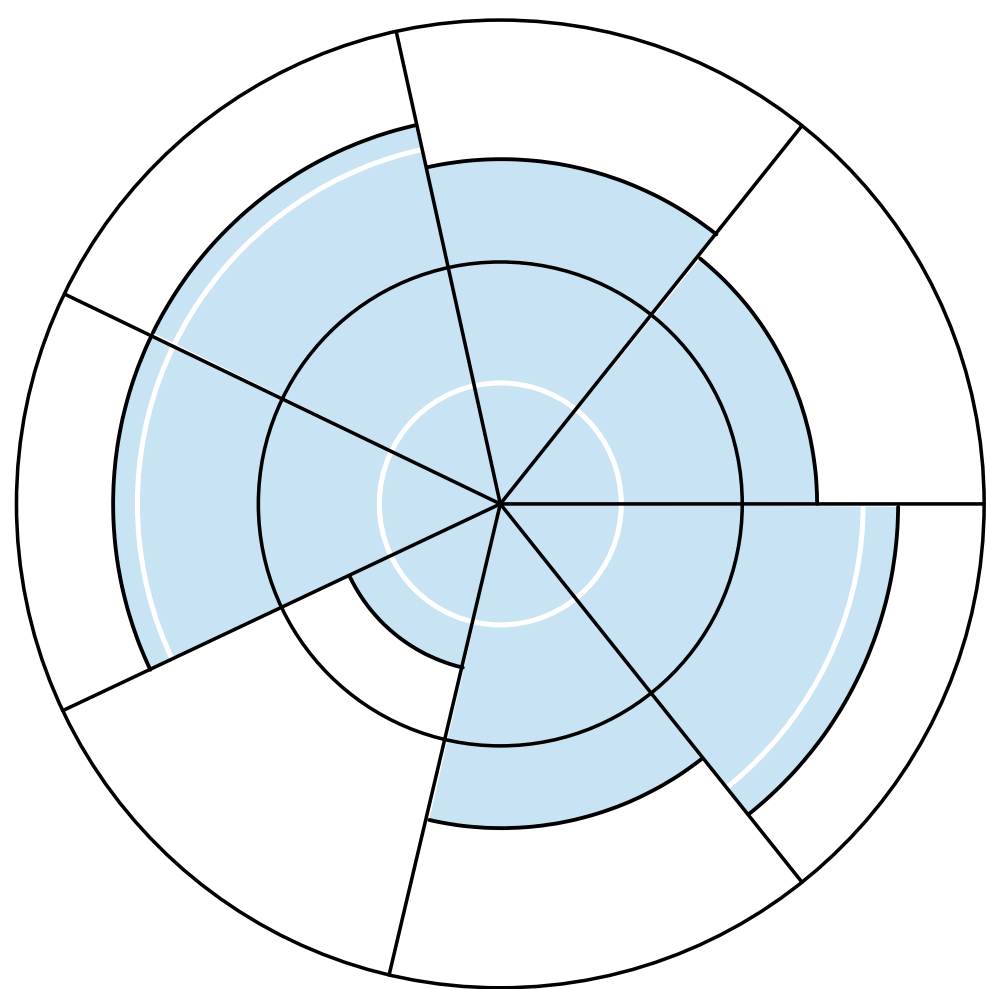
Point 4



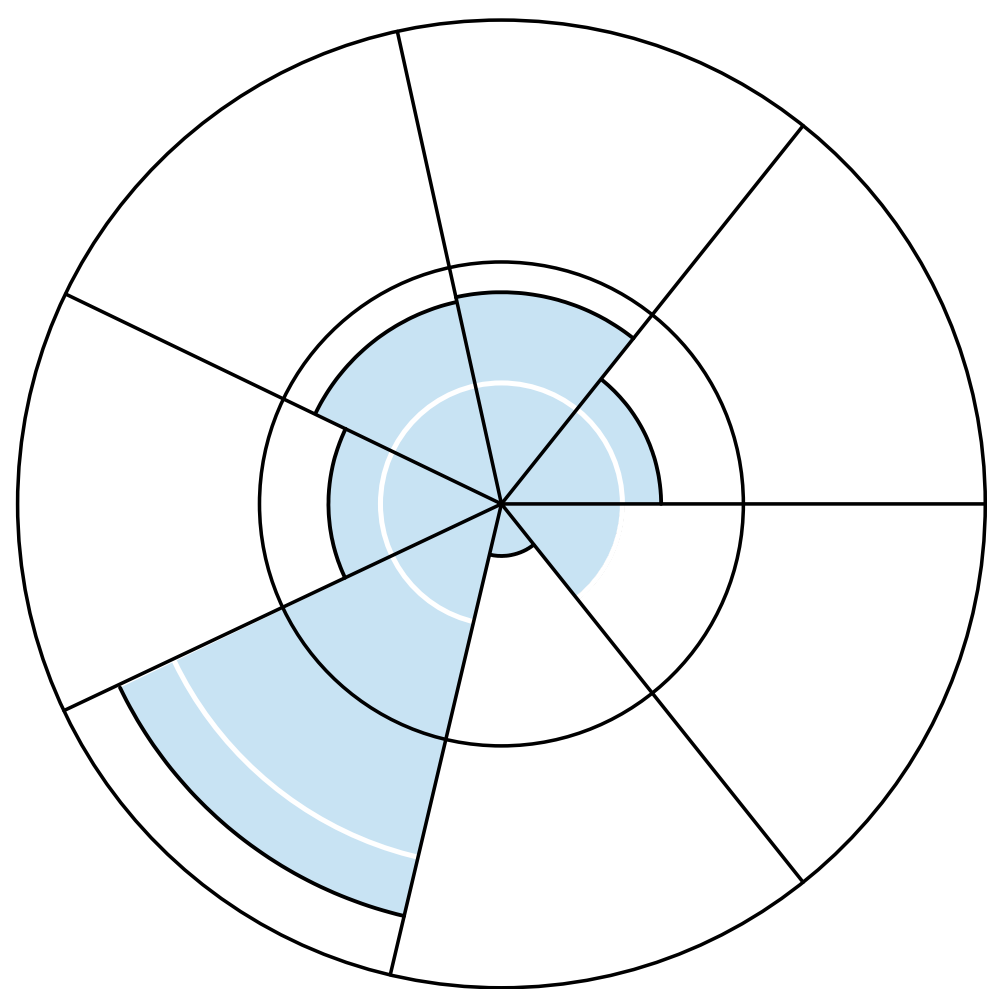
Point 5



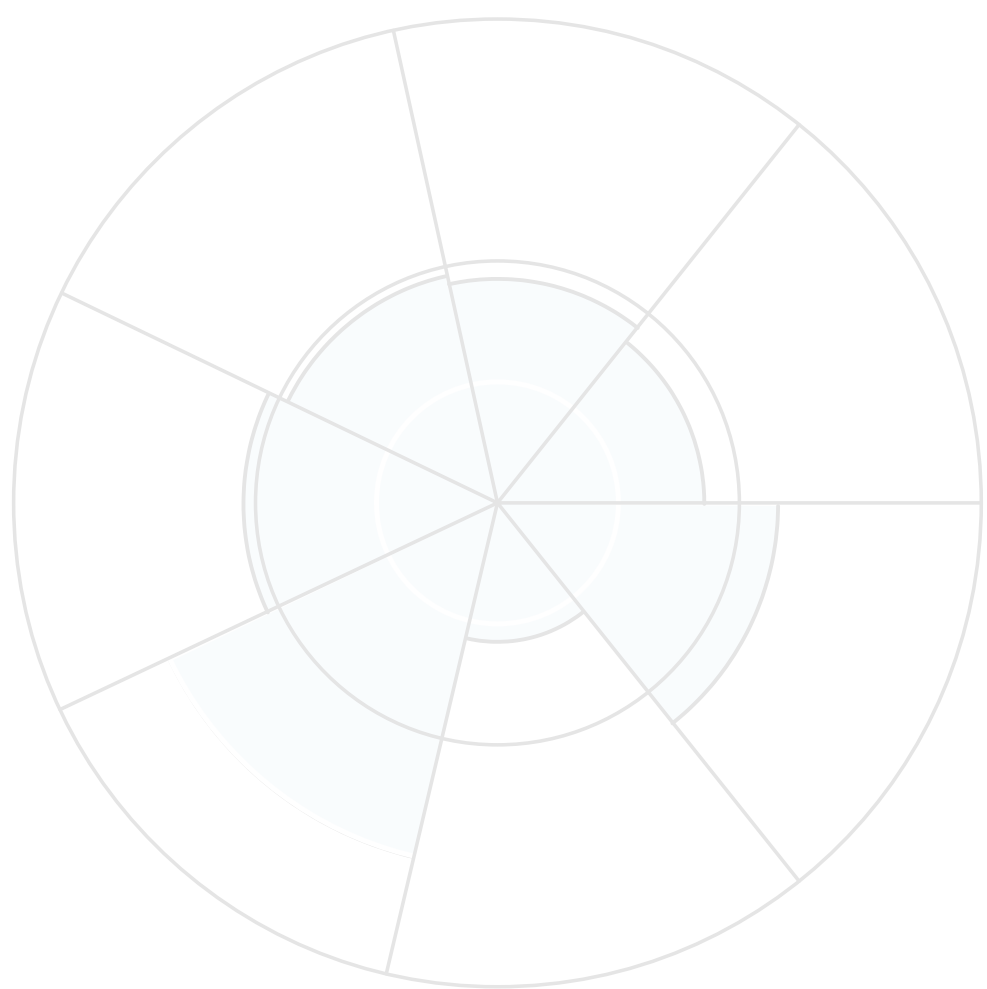
Point 6



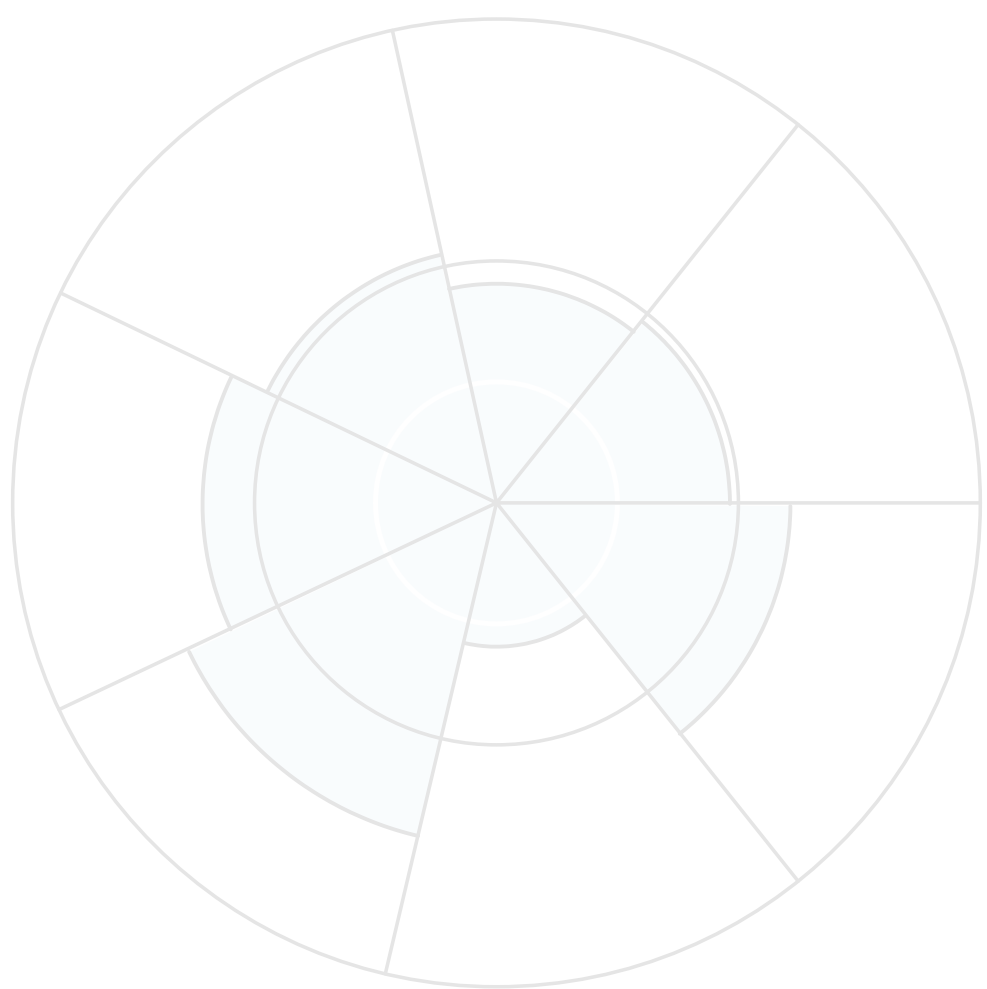
Point 7



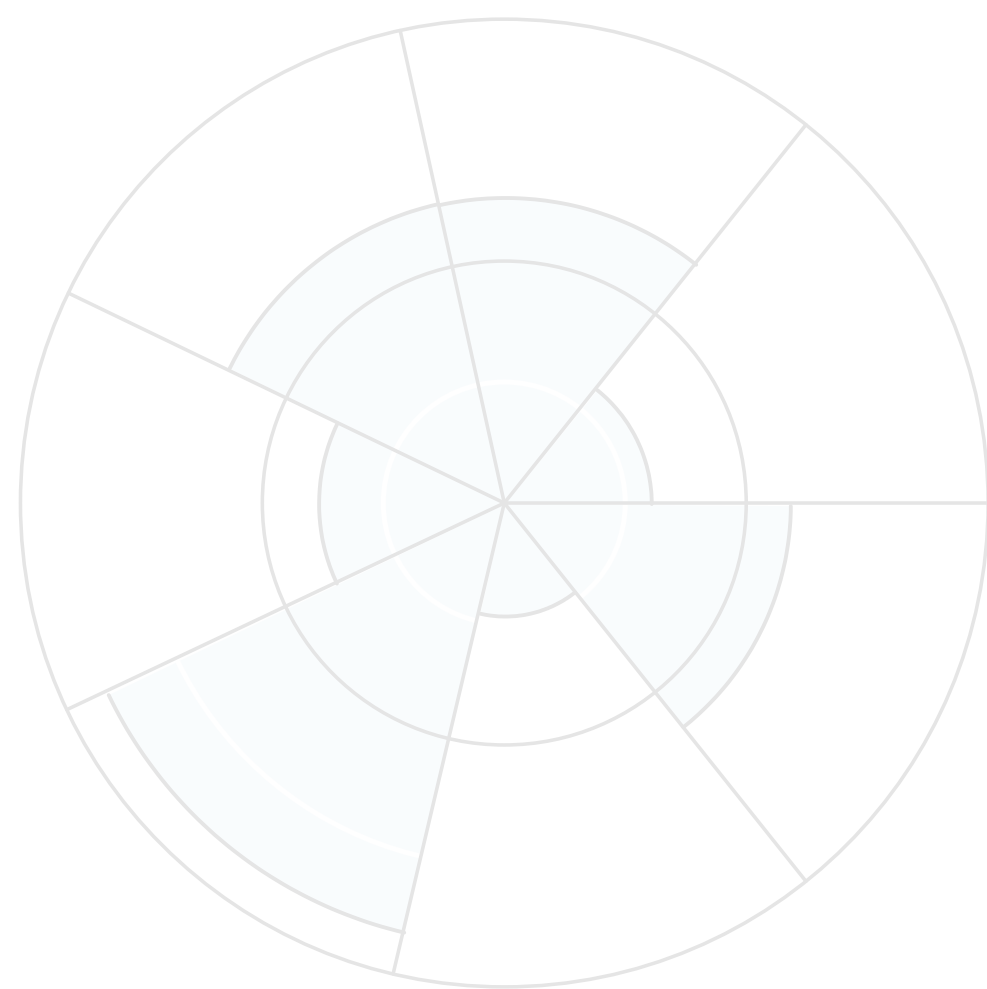
Point 8



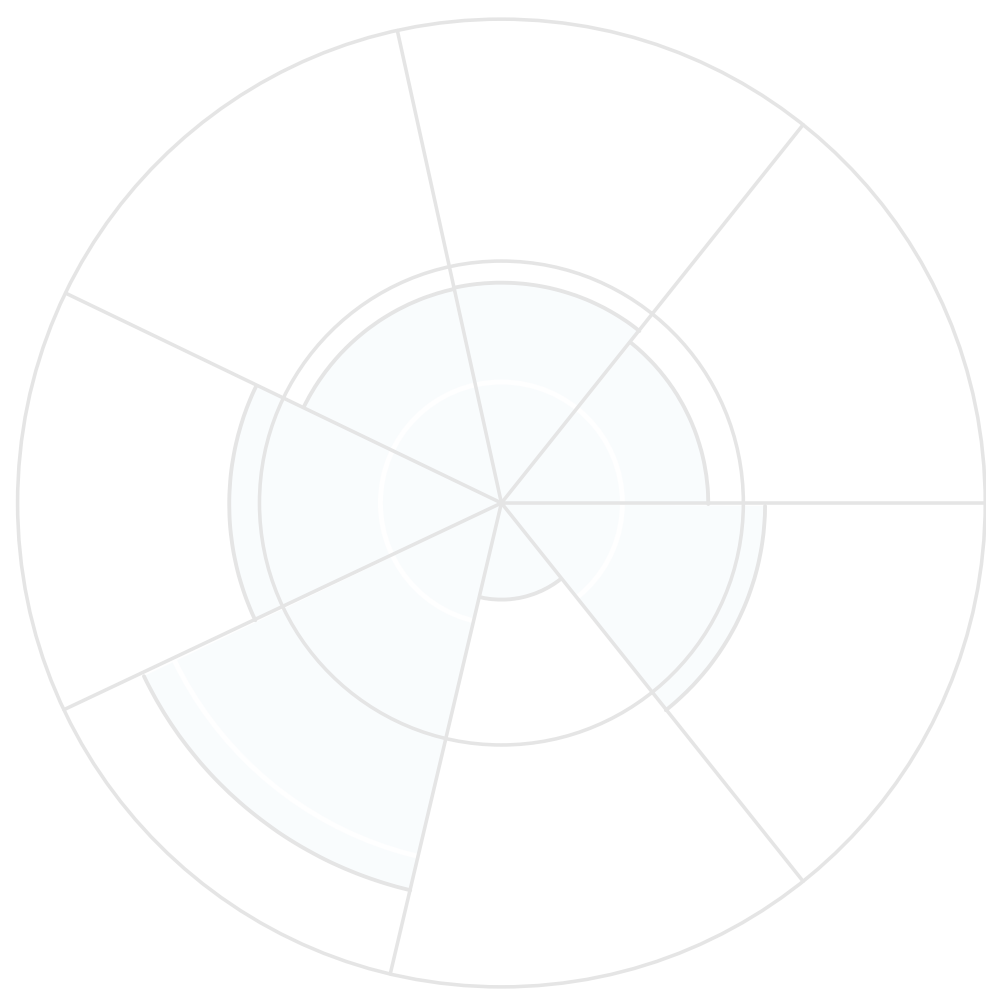
Point 9



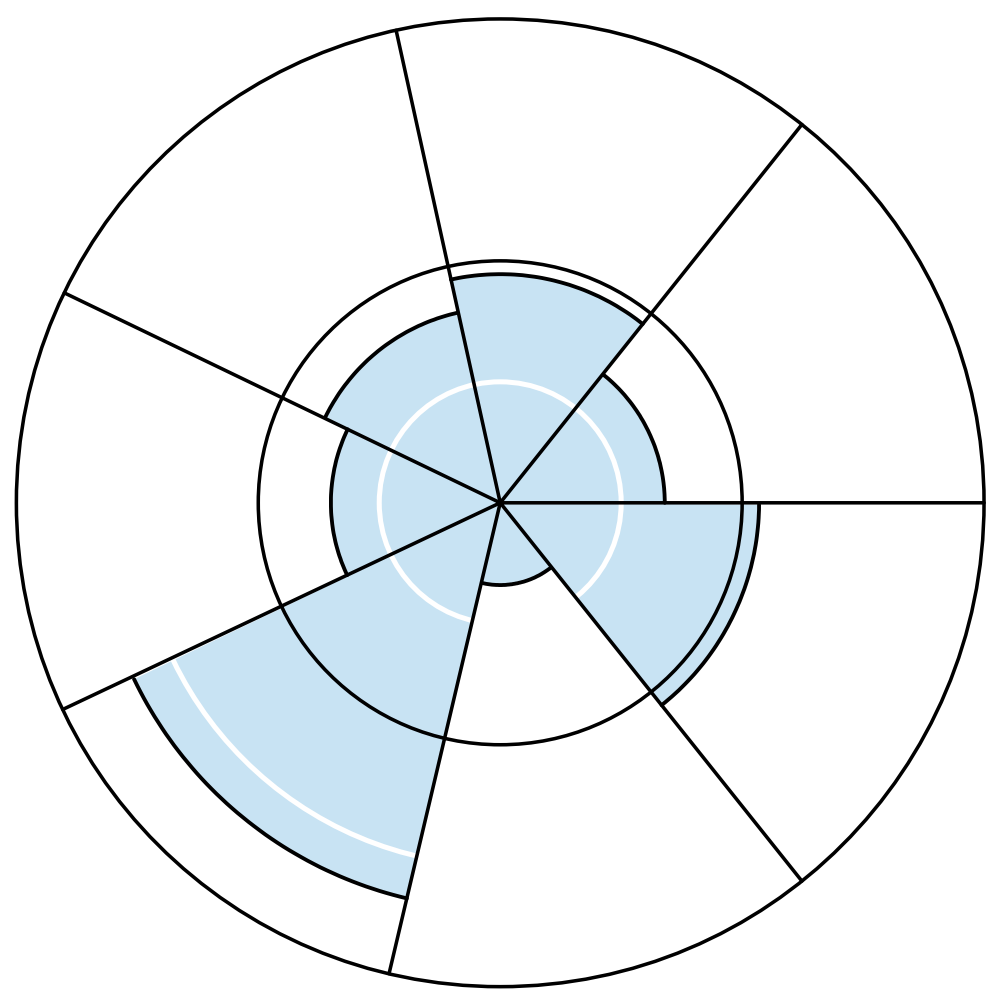
Point 10



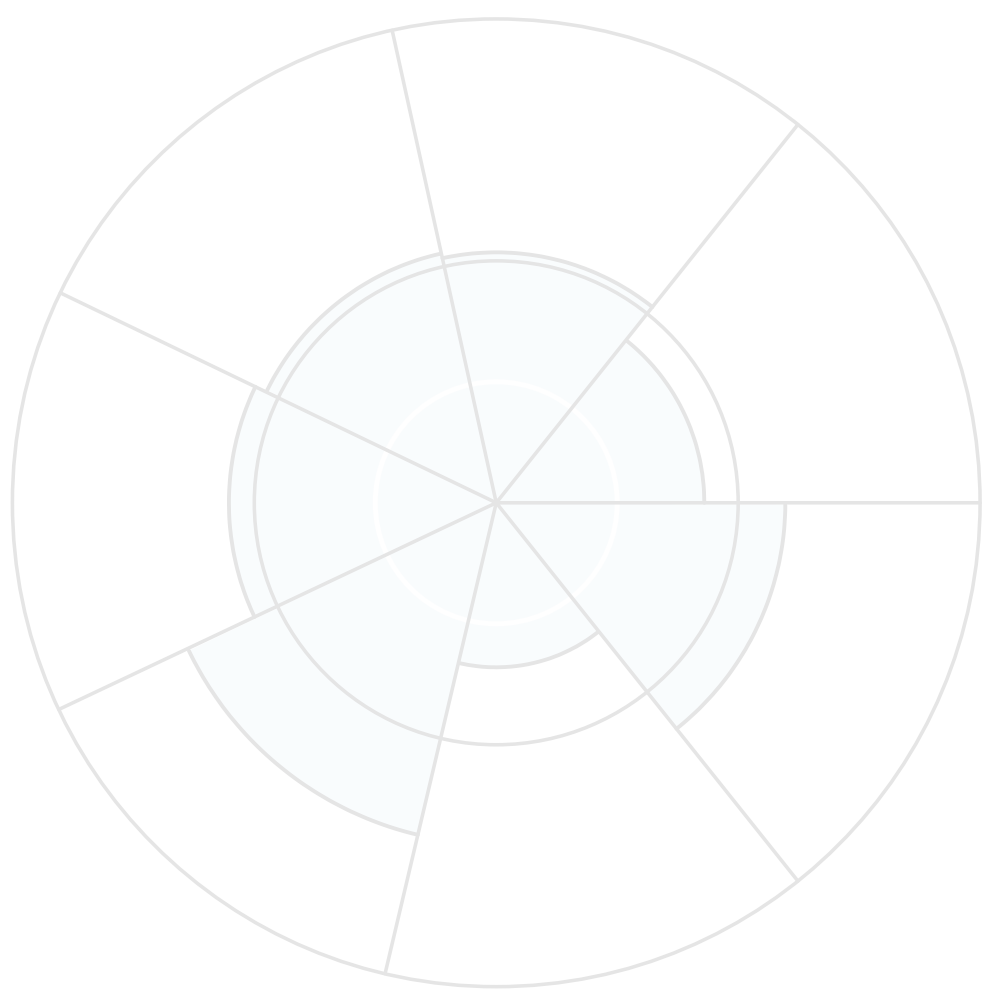
Point 11



Point 12



Point 13



Point 14

Friedhof

Idaplatz

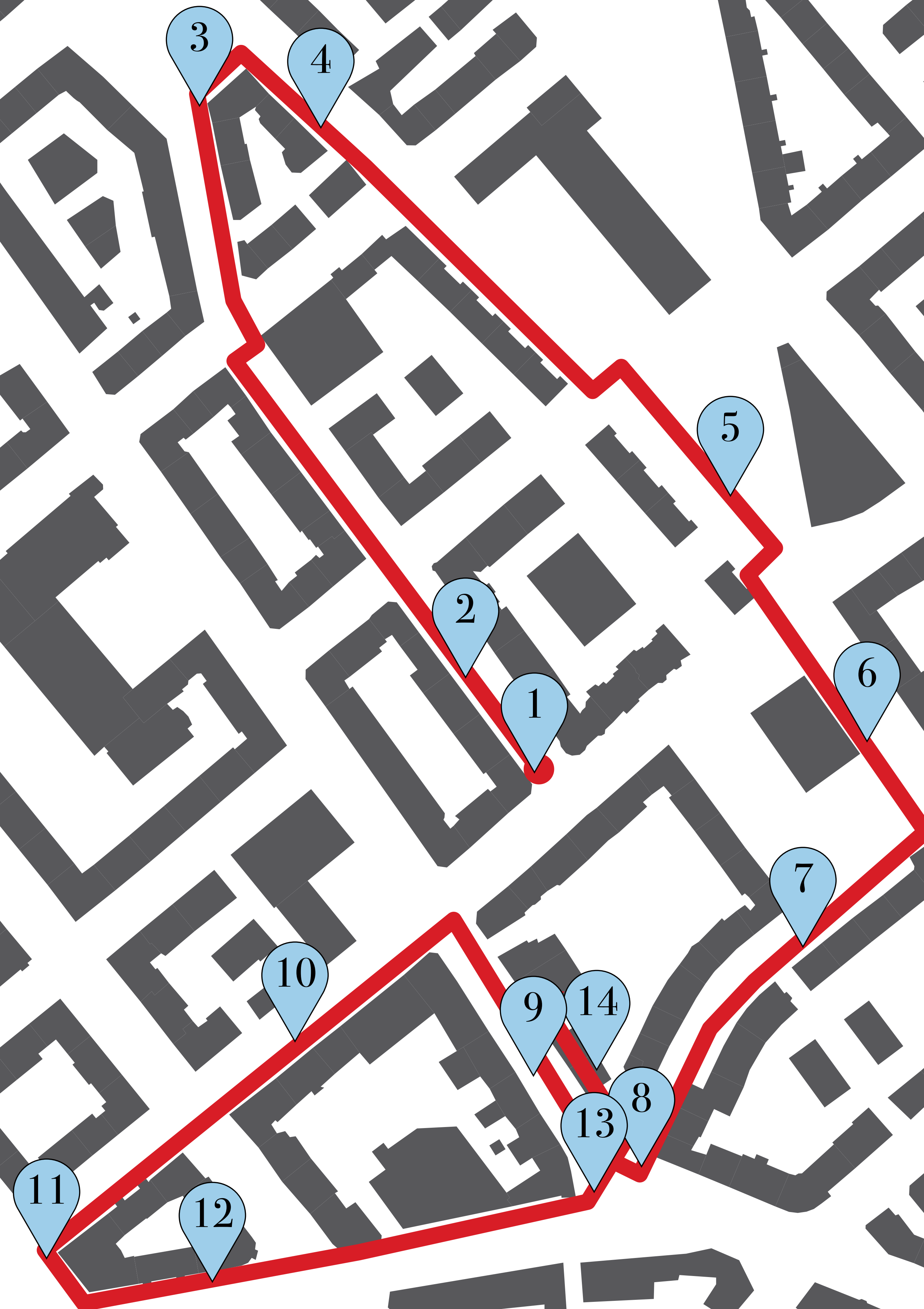
Kalkbreite

Wiedikon

Goldbrunnenplatz

Schmiede Wiedikon

Survey points

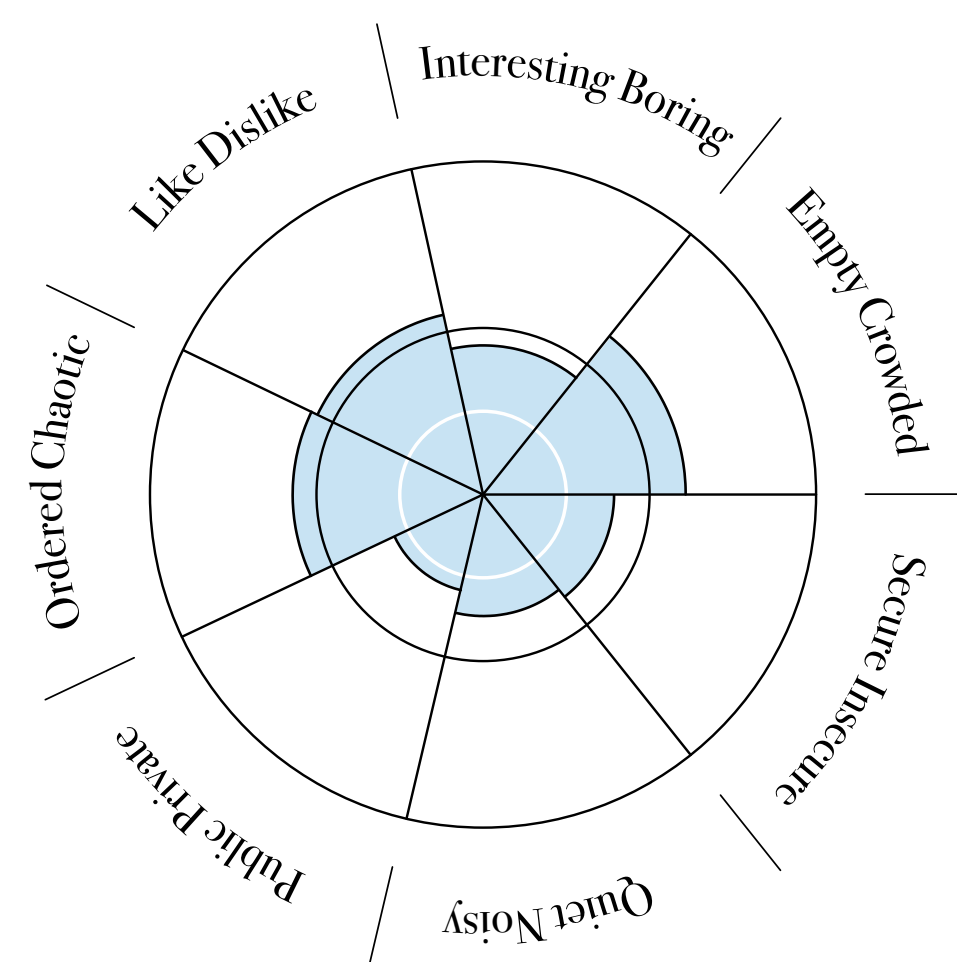


Noise Heat map

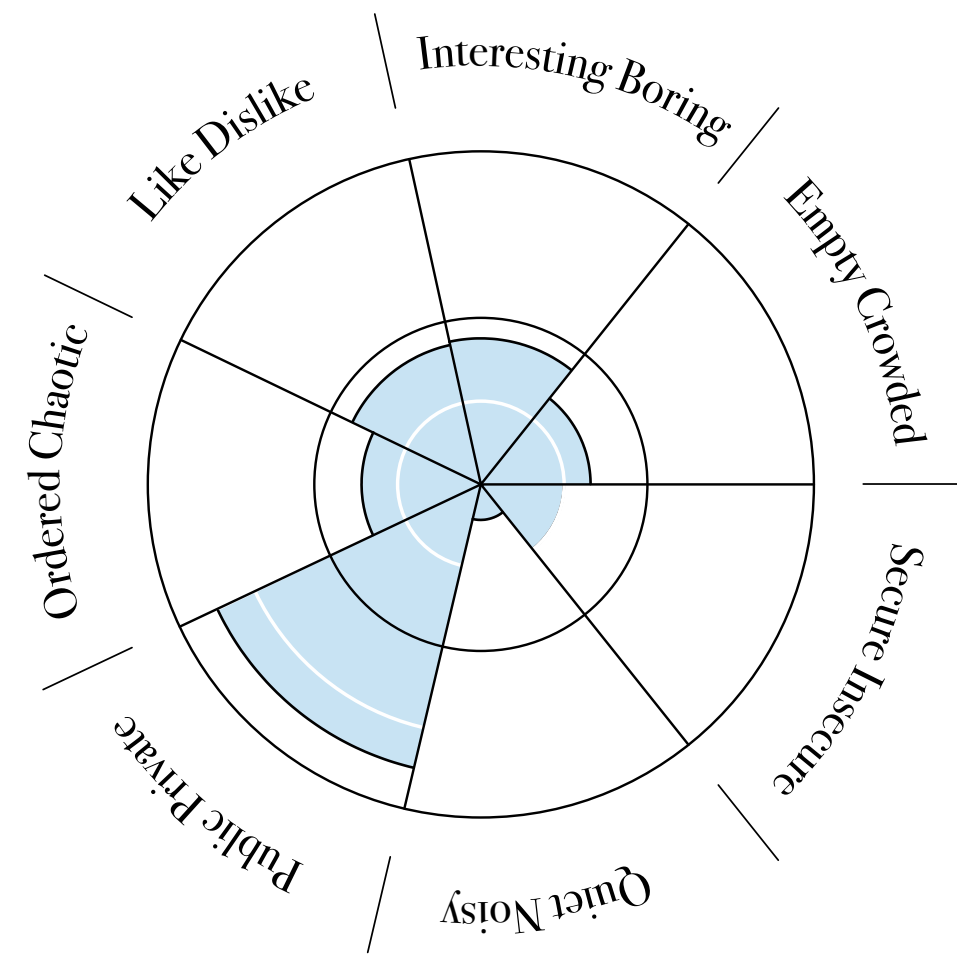


Points Evaluation

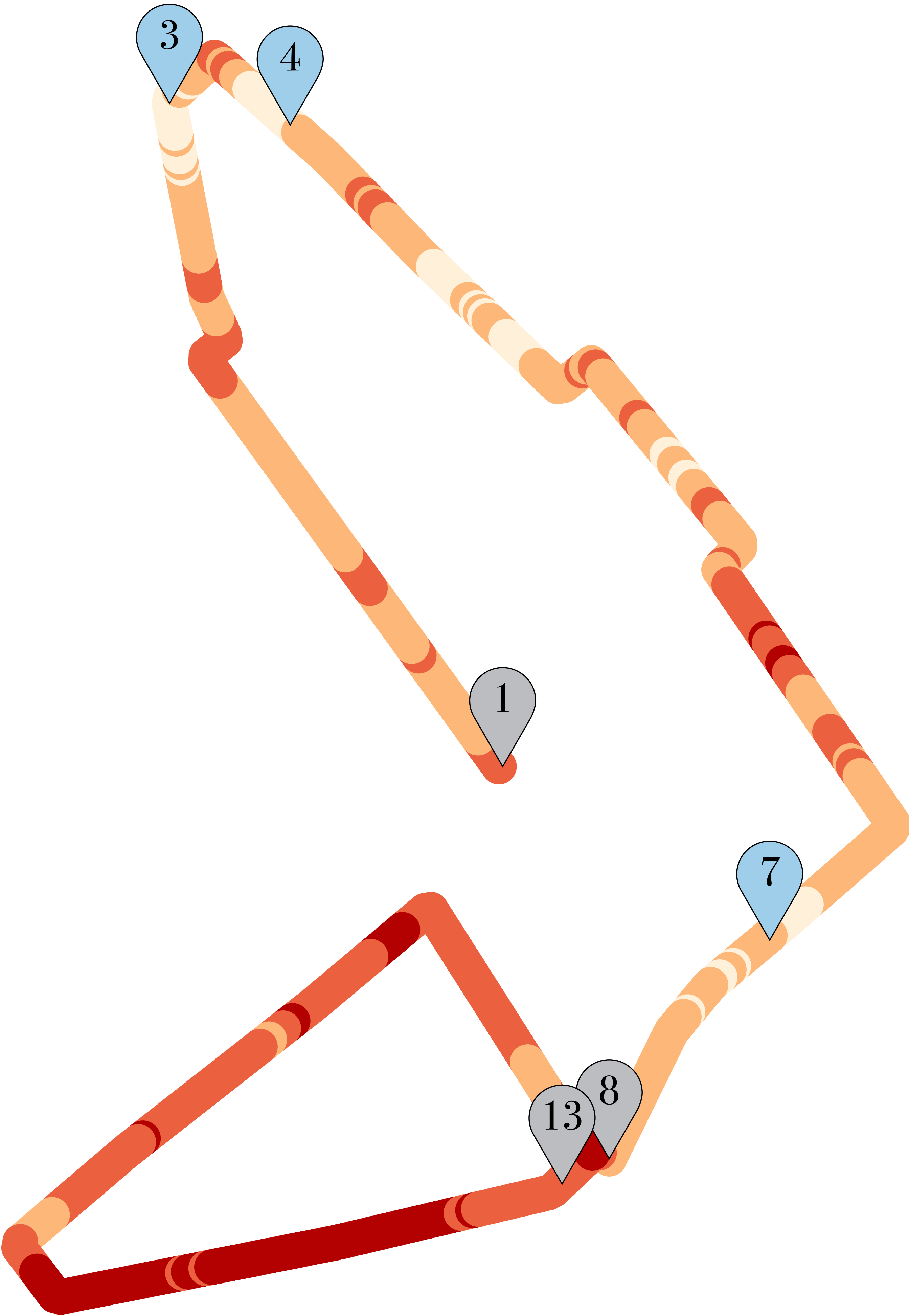
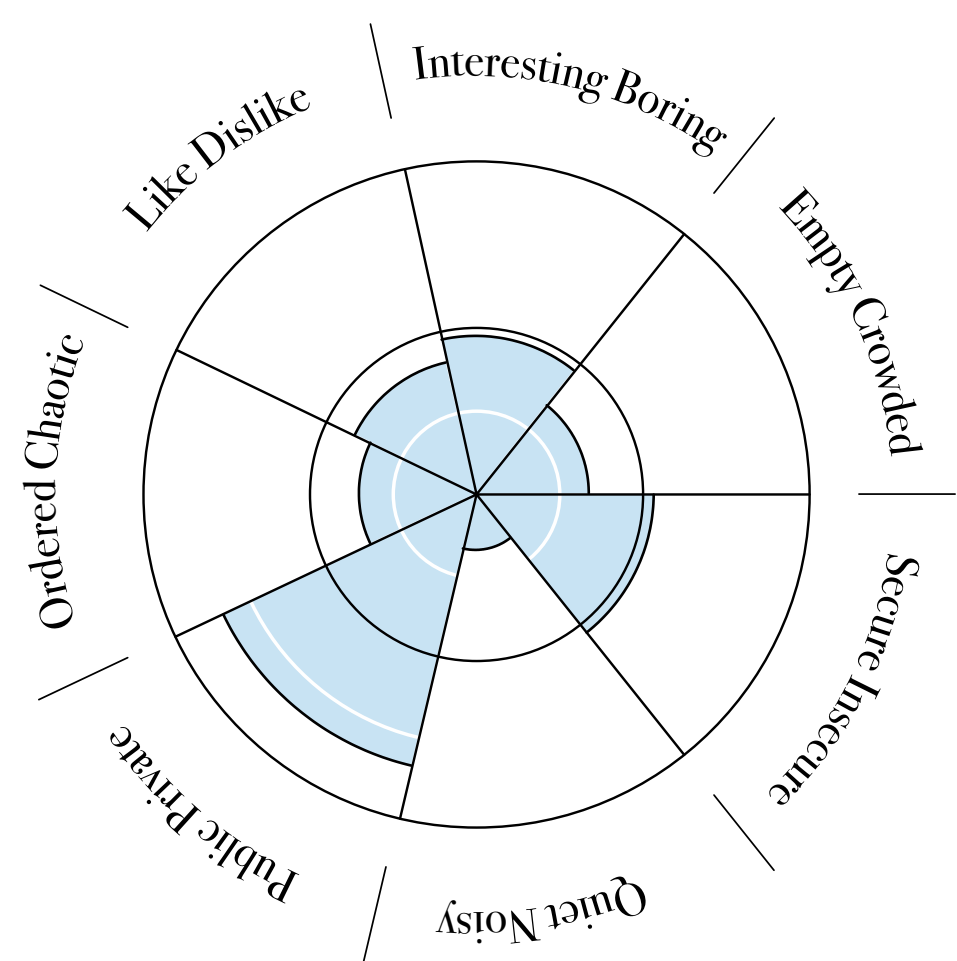
Point 1 62 dBA



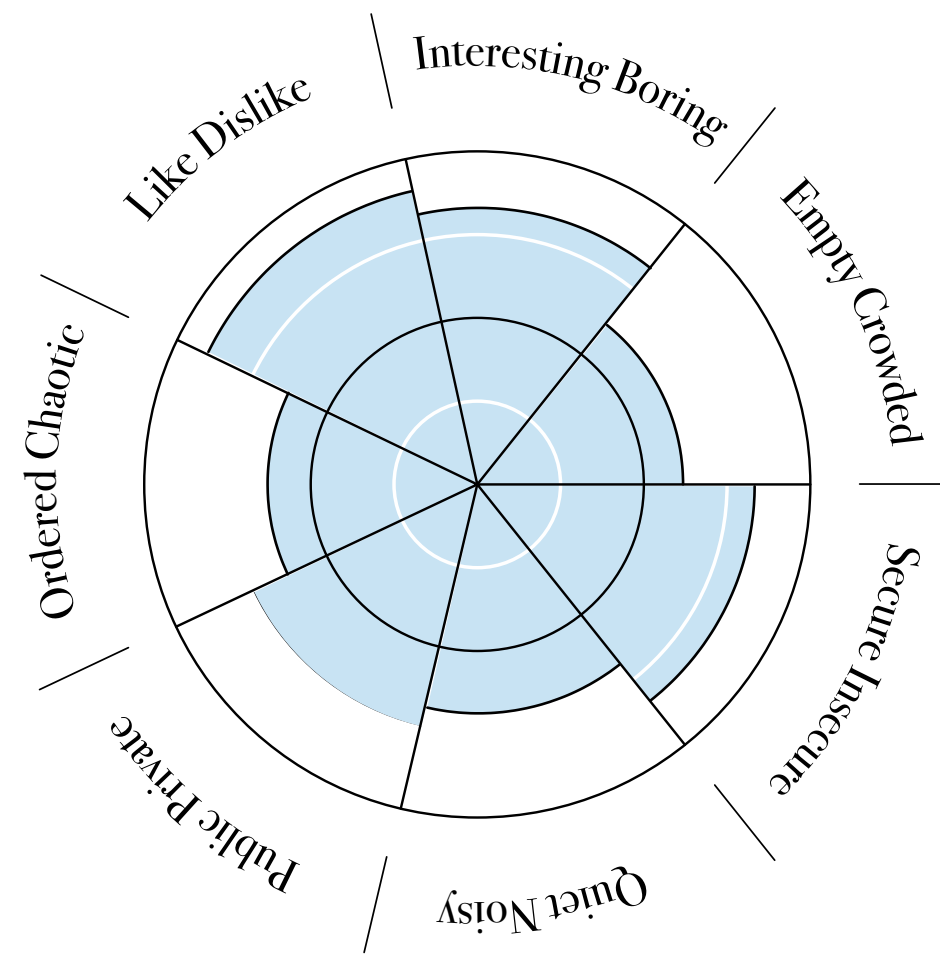
Point 8 64 dBA



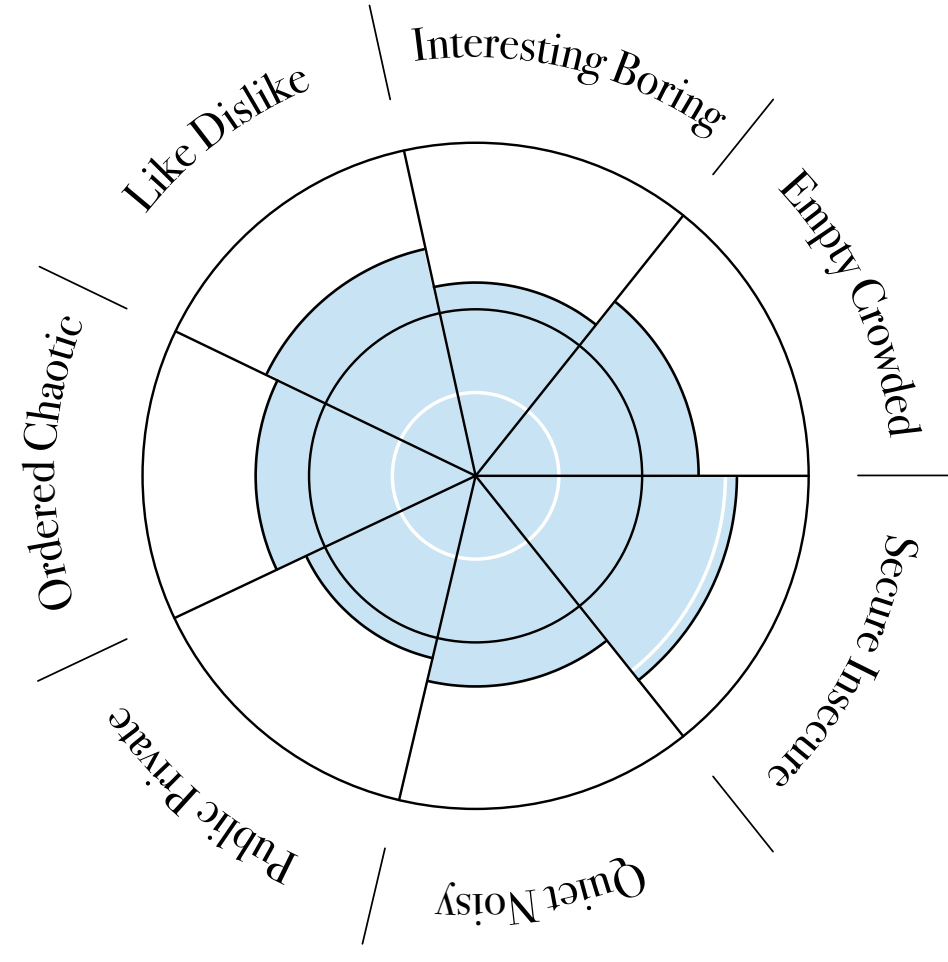
Point 13 63 dBA



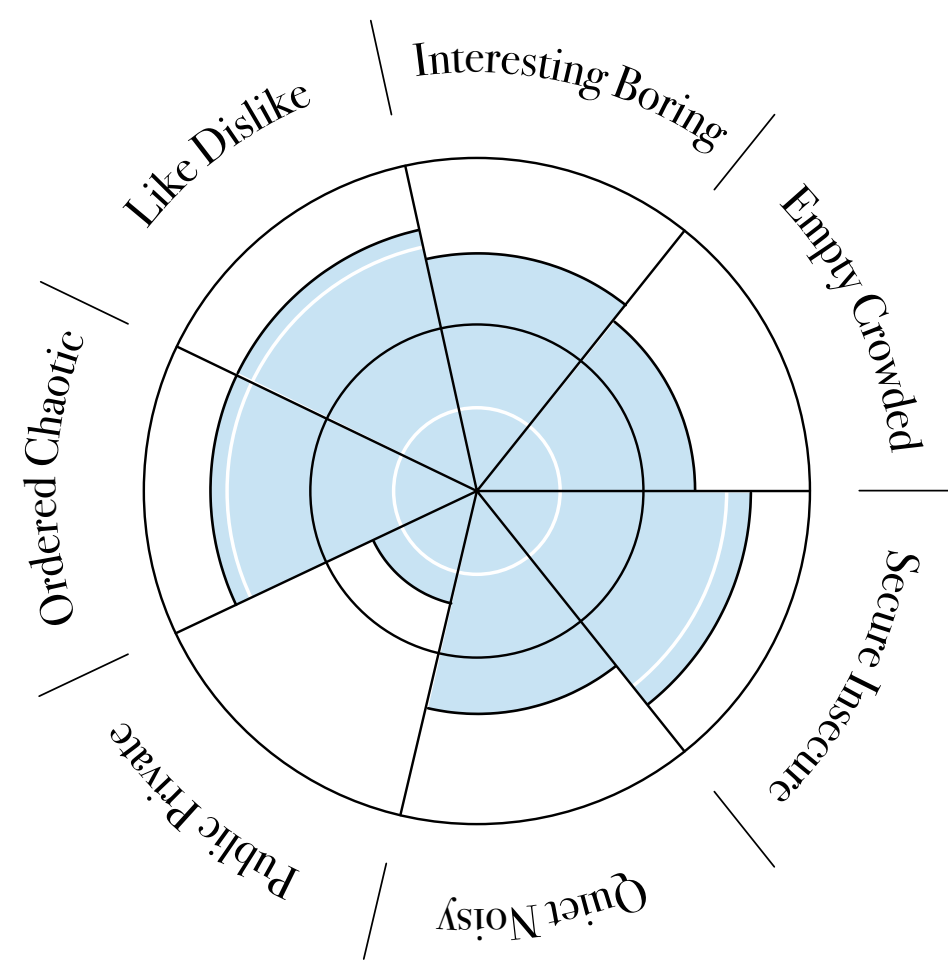
59 dBA Point 3



59 dBA Point 4

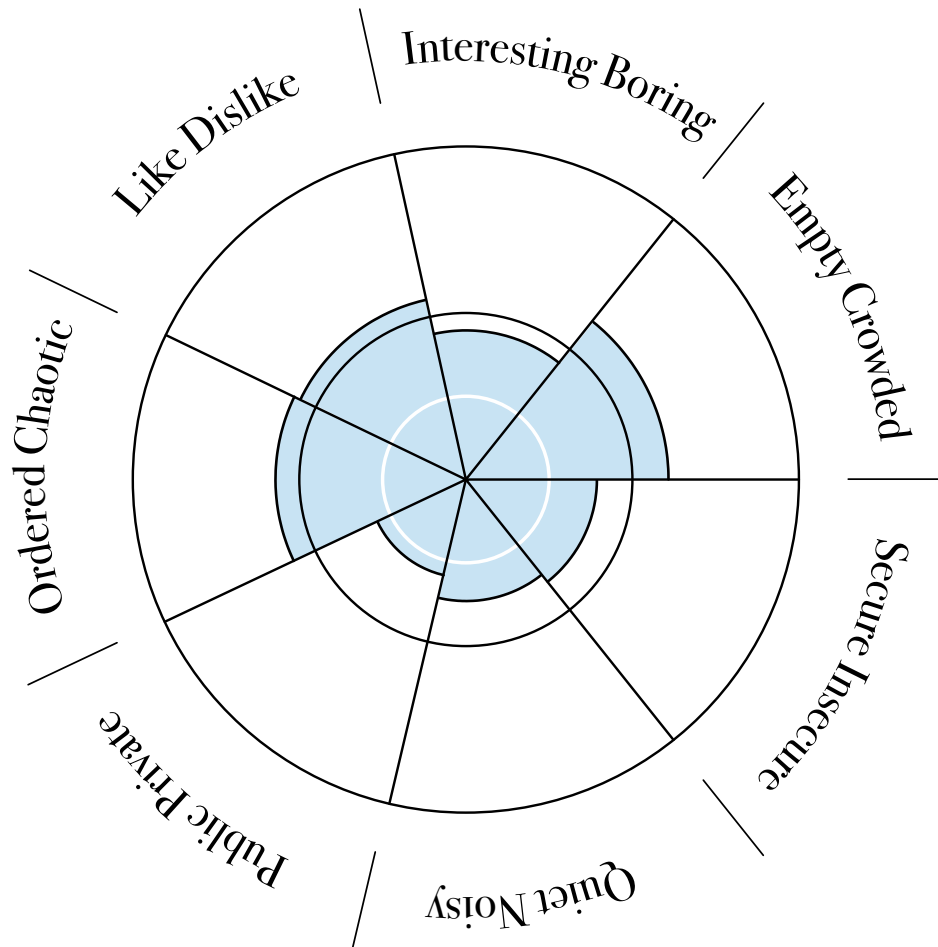


58 dBA Point 7

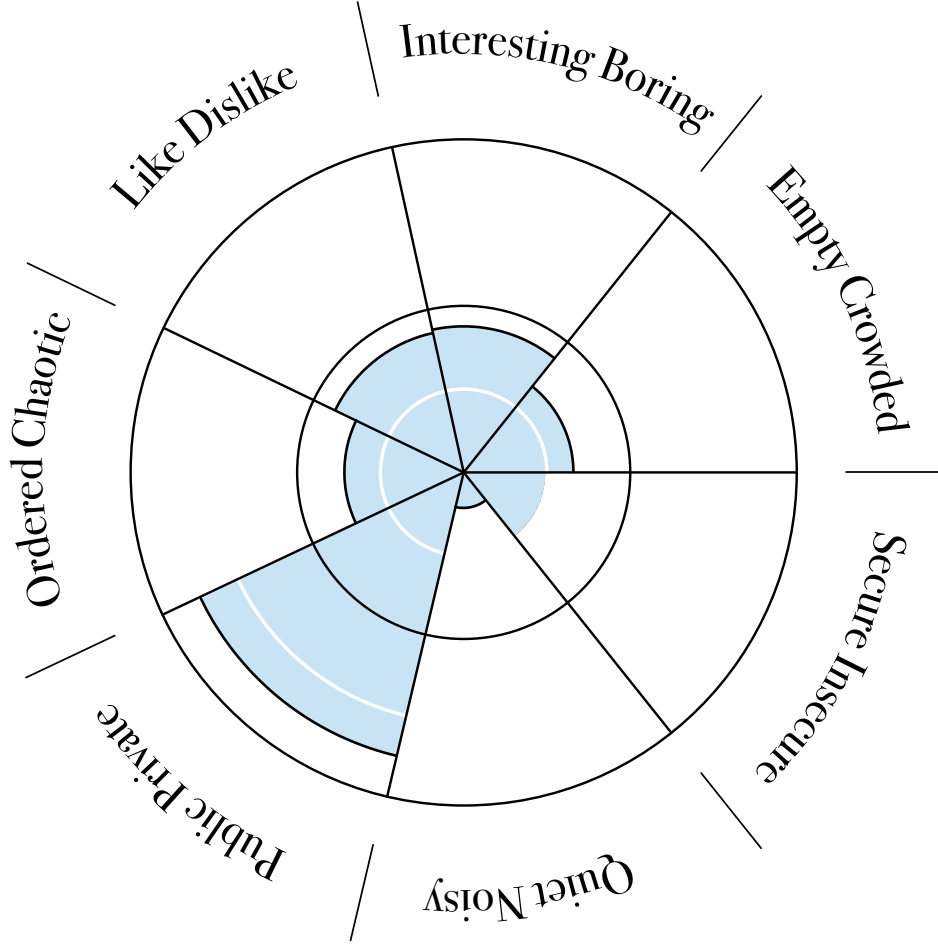


Points Evaluation

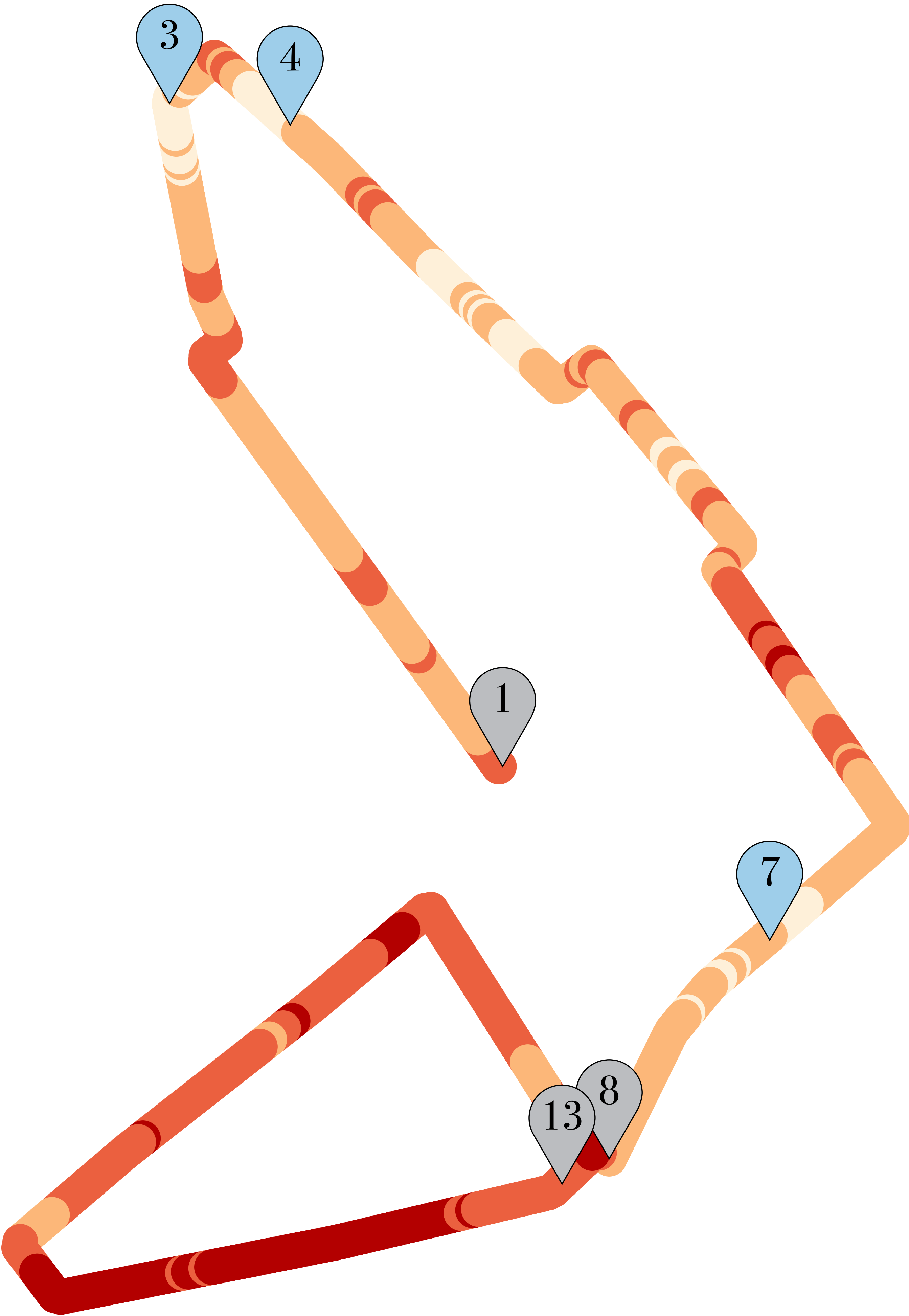
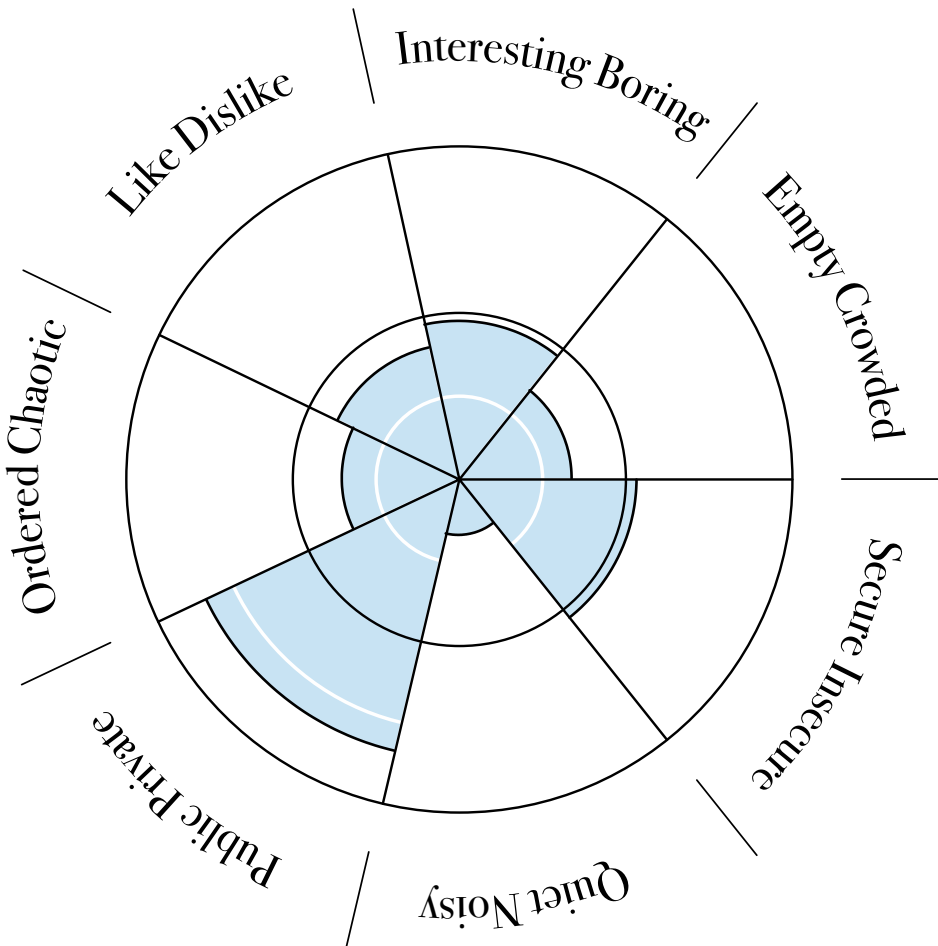
Point 1



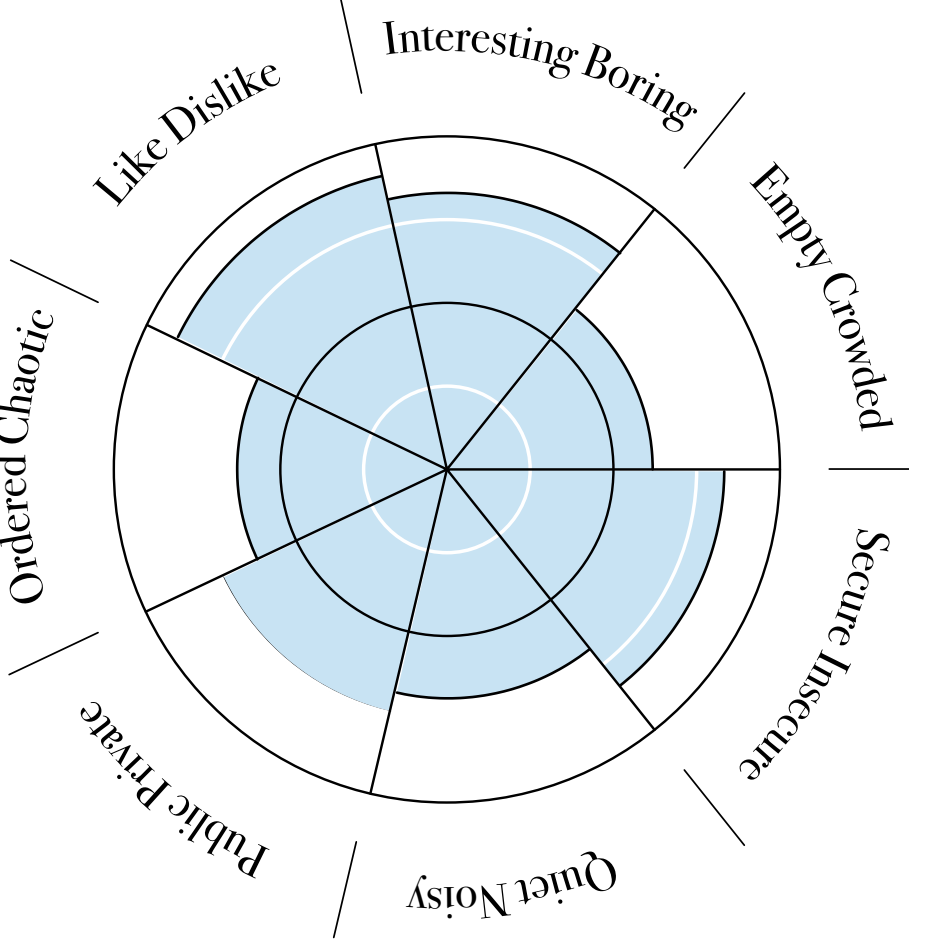
Point 8



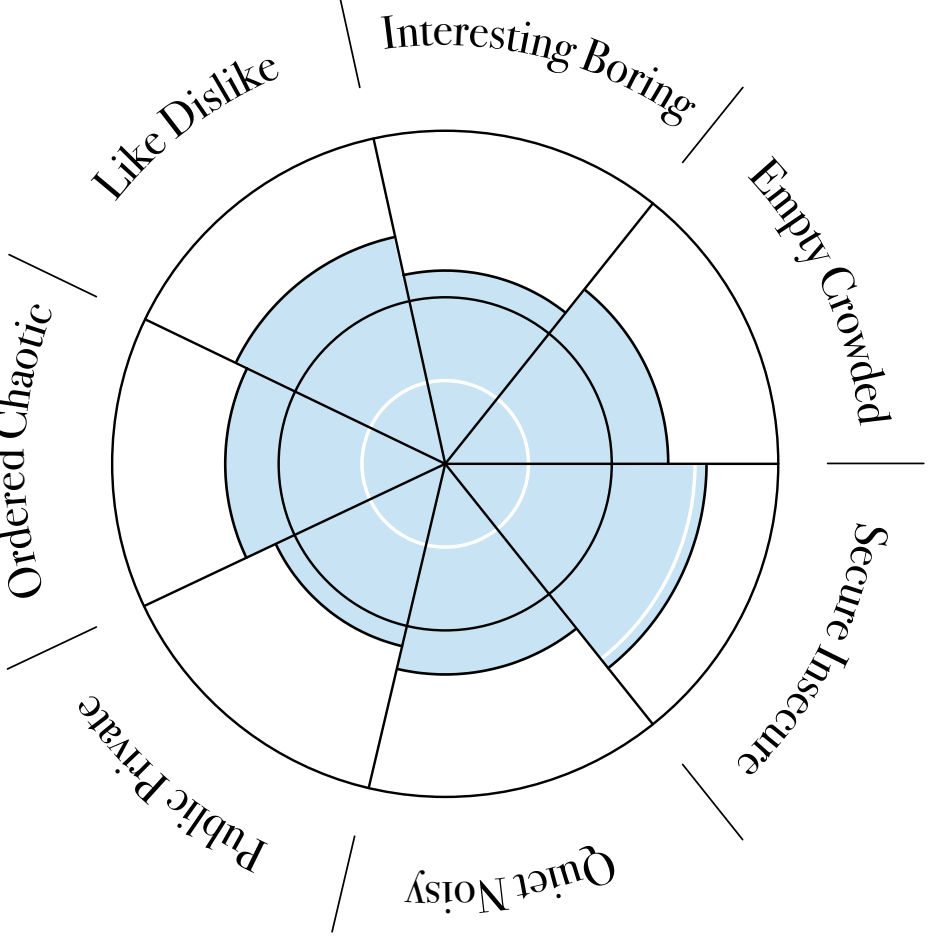
Point 13



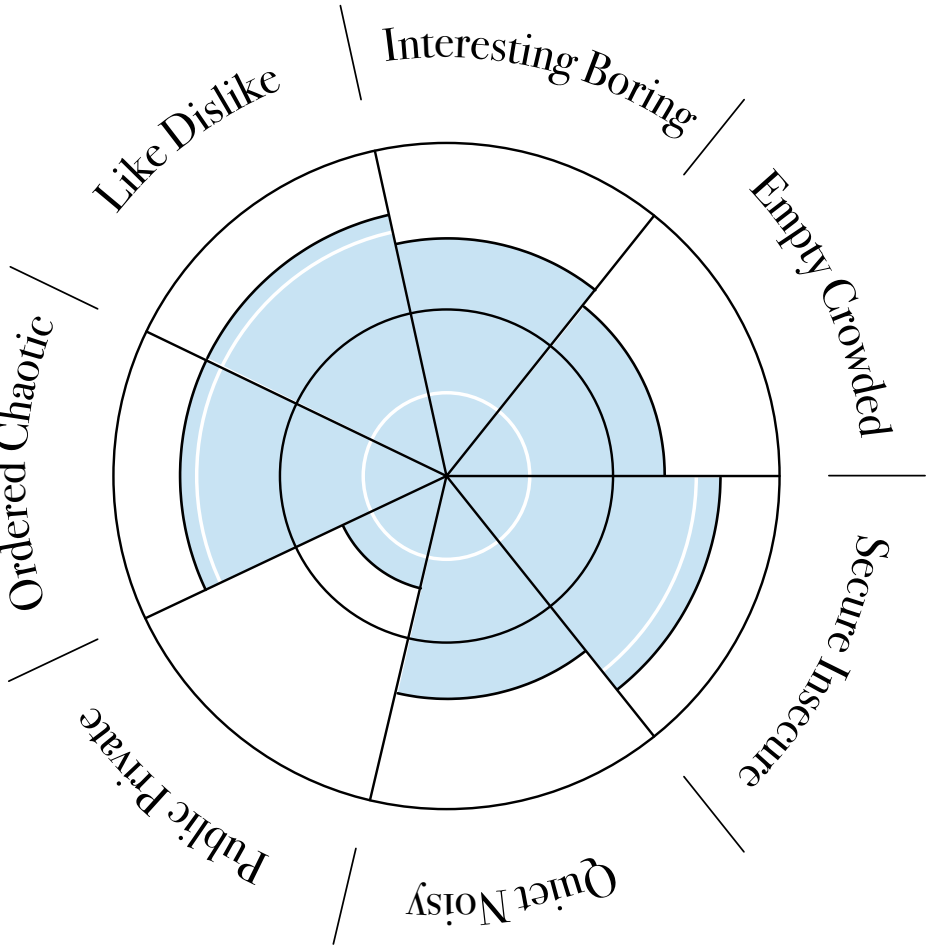
Point 3



Point 4



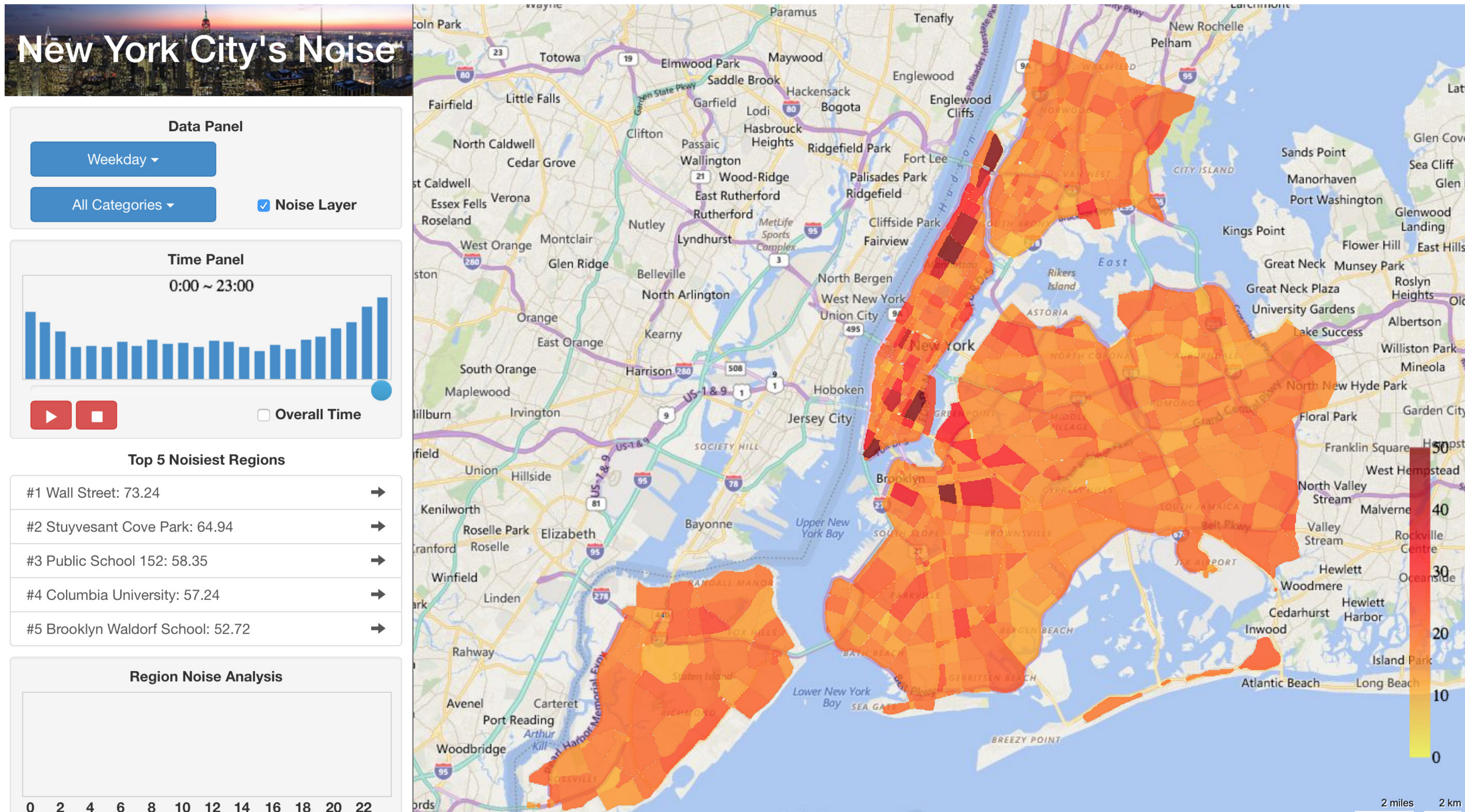
Point 7



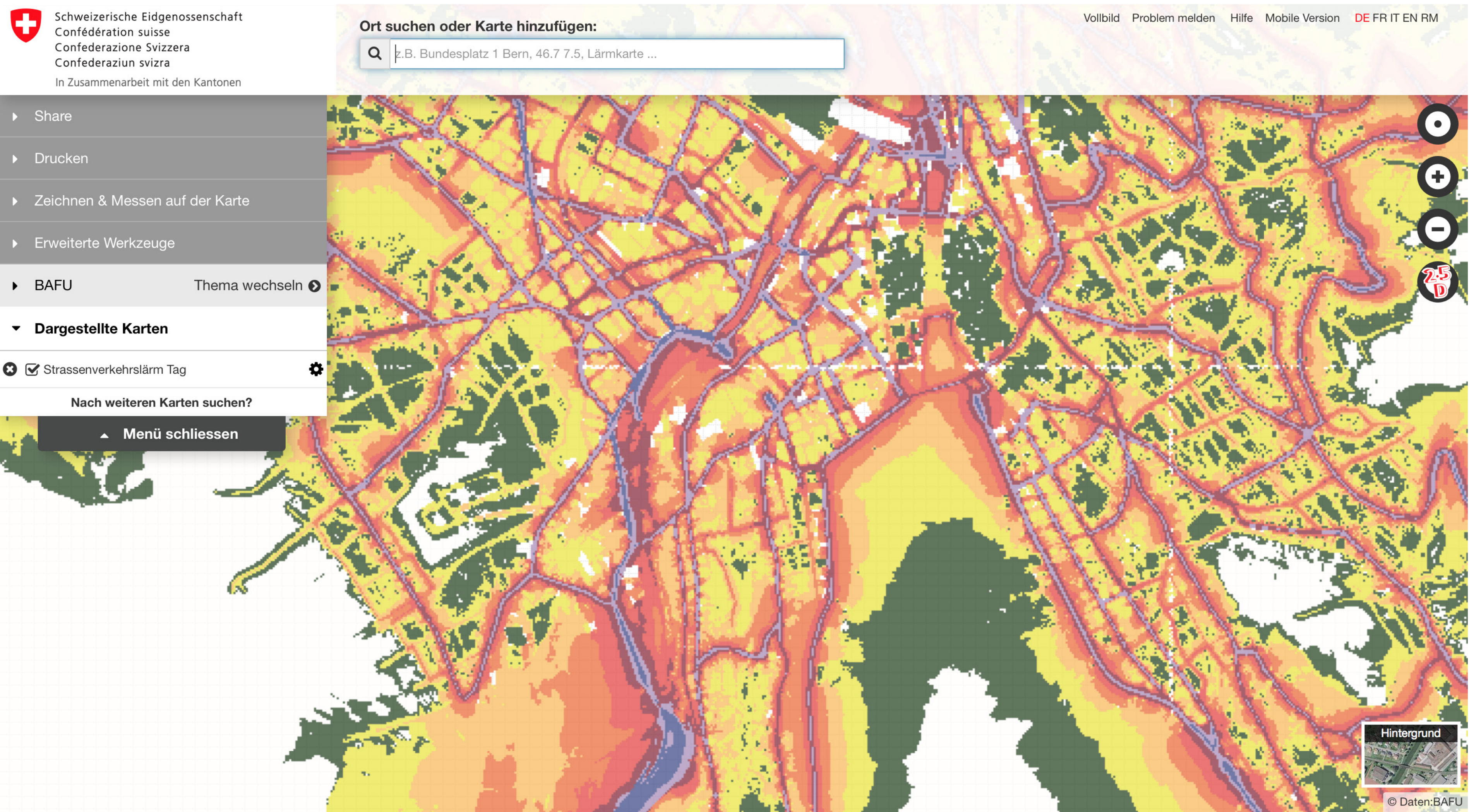
Conclusions

- Correlation between noise and spatial perception
- BUT: many other factors should be considered:
maybe color?
- Zürich is pretty noisy!

References



<http://citynoise.azurewebsites.net>



<https://map.geo.admin.ch>