



World Forum on
Urban Forests
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*PS 1.2 The Past - Changing
People and Benefits*

Relations between perceived stress-relief and safety and green infrastructure features in a historical urban landscape

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TESAF

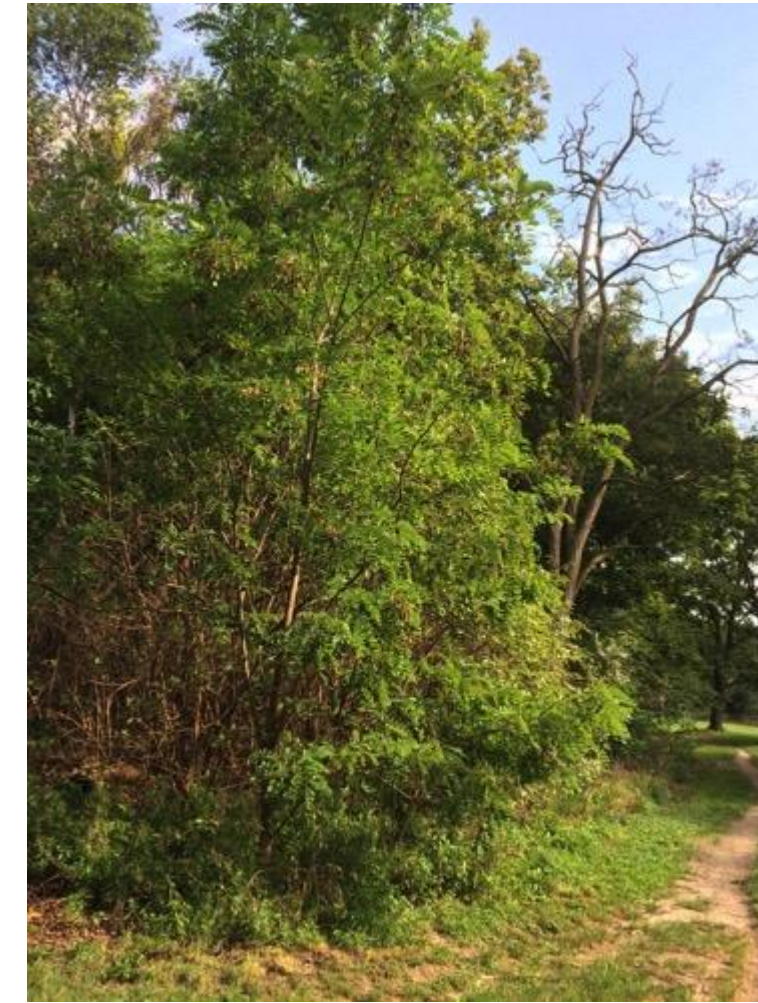
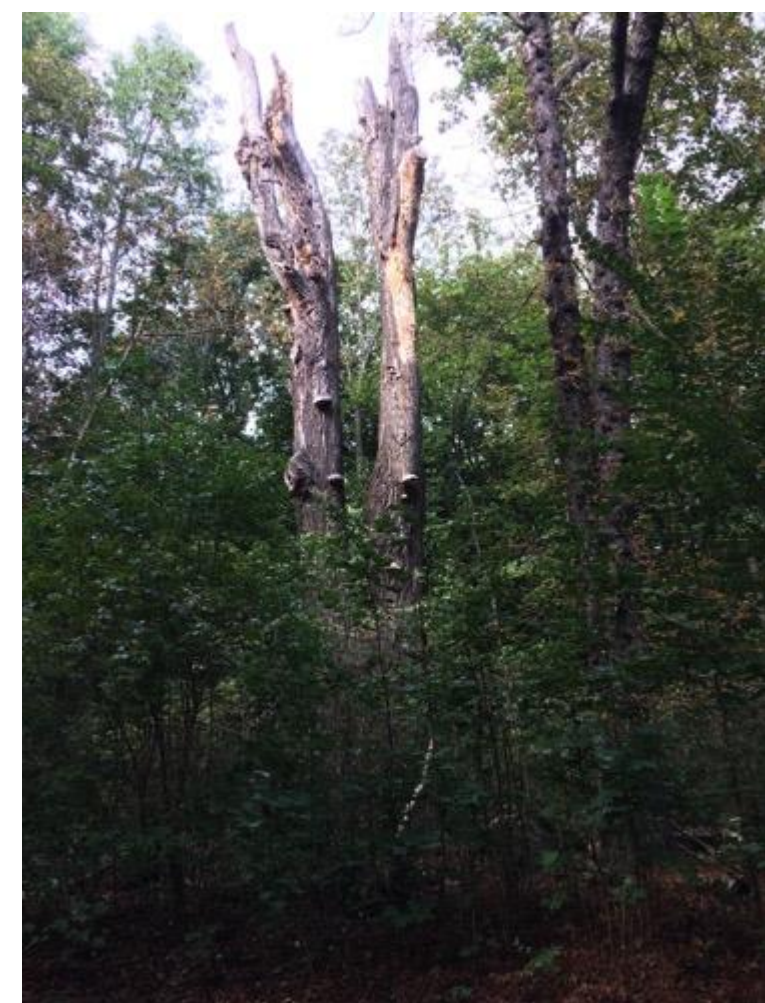
Universität für Bodenkultur Wien
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Life Sciences, Vienna





Outline

- Green spaces preferences
- Study area and methods
- Comparisons: general perception, stress relief, & safety



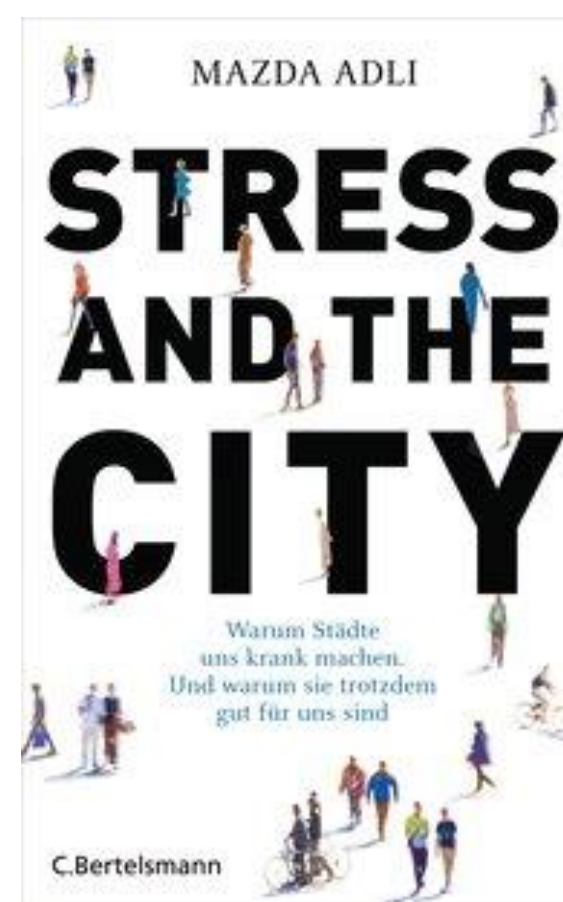
Selection of green spaces



Security

Stress

- Next future – increase of chronic stress & related illnesses
- Positive effect of green spaces on stress relief



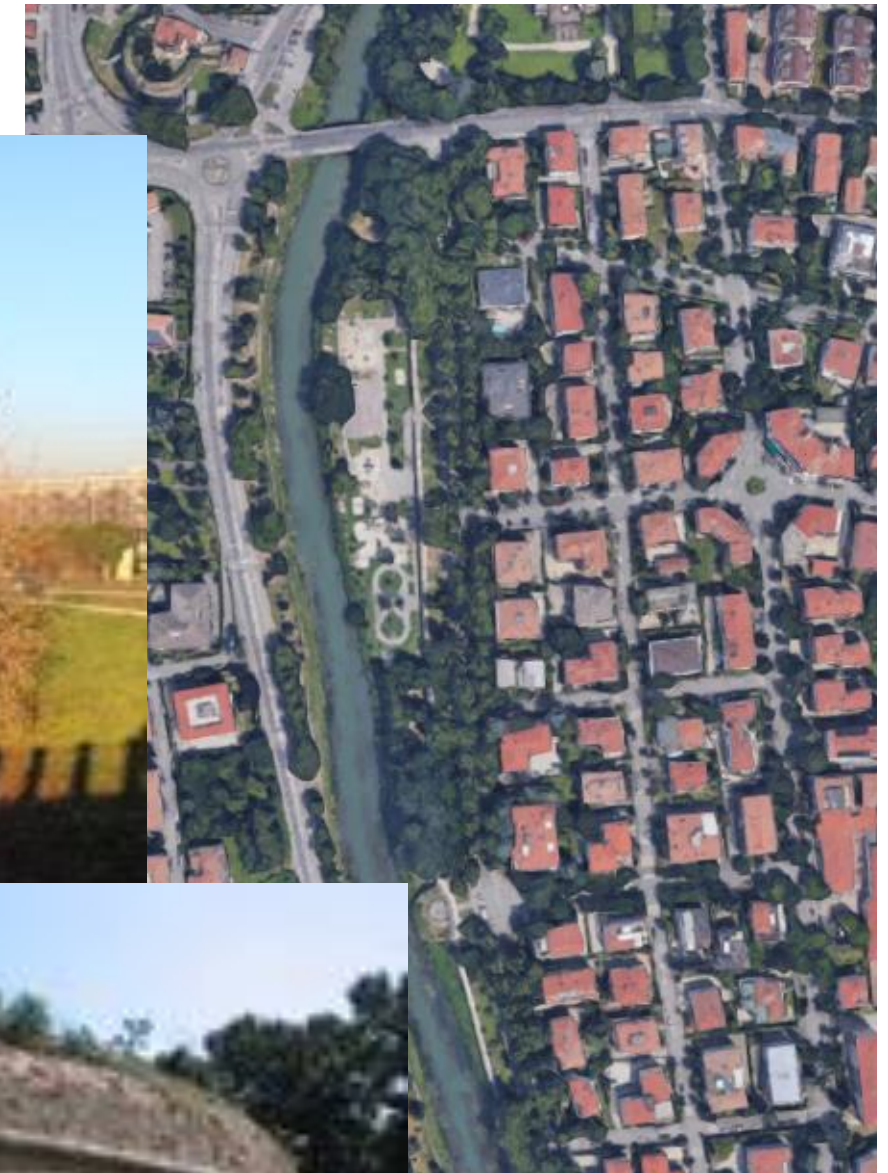
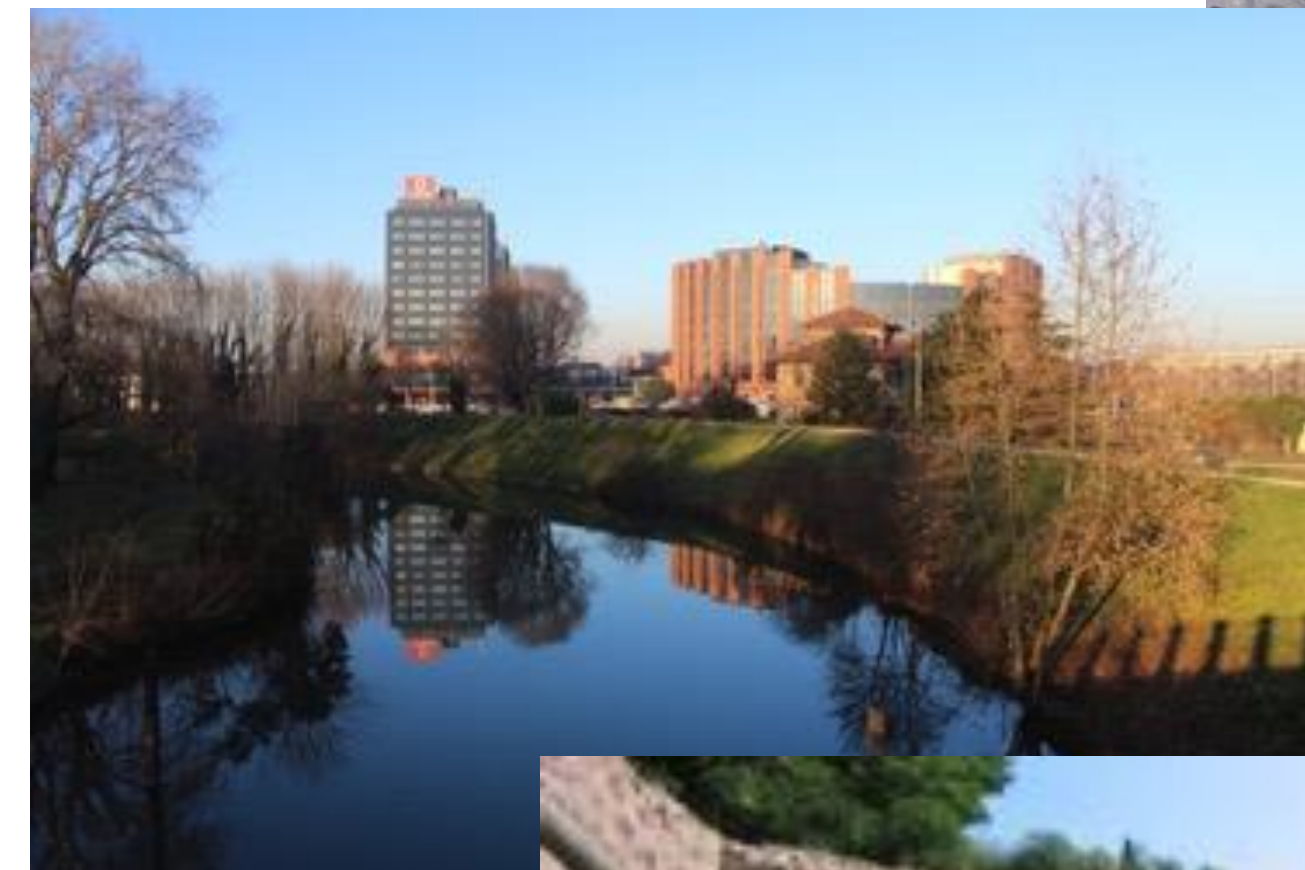
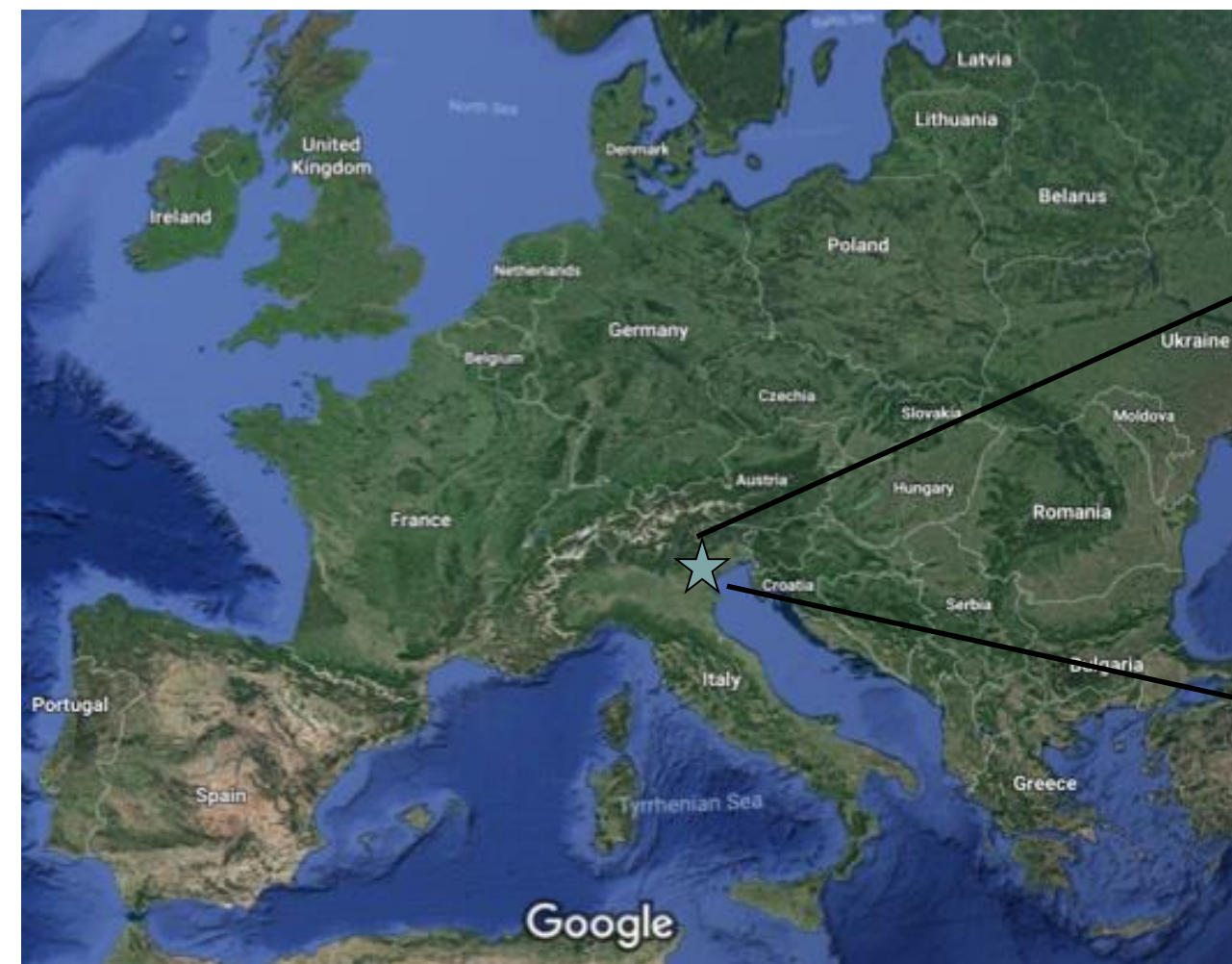
- Differences in self-rated general health may be related to perception of safety (Baum et al. 2009)
- Perceived safety seems to be indirectly related to green spaces (Weimann et al. 2017)
- Research is still needed (van den Bosch & Ode Sang)





Study objectives

to analyse the influence of different features of managed green spaces on users' preferences for stress relief and safety



Padova – 214,000 citizens - 93 km²

Methods

- Face-to-face interviews (structured questionnaire)
- Stated choice
- Users of green spaces in fall period (2017)
- Sample: weekdays – daytime – 20 spots (rotating morning/afternoon) – no raining days = a total of 295 interviews

1. What are the main reasons of your today's visit to this green space? (three answers maximum)

walk
 walking the dog
 jogging
 nordic walking
 bicycle
 rest
 moving from one place to another
 other (specify) _____

2. In a scale from 1 to 4, with 1 indicating not important and 4 very important, how much do you think these motives are valid for your today's visit to this green space?

	1	2	3	4		1	2	3	4
Recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Need to see people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Escape from urban life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Stress reduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Experiencing nature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Personal health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tranquillity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Search for silence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cultural interest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Enjoying the landscape	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Meeting friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	1	2	3	4	non so
accessibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
crowdedness (1-overcrowded; 4-not crowded)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
cleanliness and tidiness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
areas reserved to dogs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
presence of fountains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
parking availability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
resting areas (benches, tables, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
facilities for children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Path availability for others (specify)...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Professional position:

student (1)
 household (2)
 private employee..... (3)
 public employee..... (4)
 manager (5)
 free lance (6)
 retired..... (7)
 unemployed..... (8)

16b. Do you work in the environmental sector? yes (1) no (0)

17. Are you involved in any environmental or cultural association?

Environmental: _____
 Cultural: _____
 no: _____

Attributes selection & preference elicitation

Focus: (i) Spontaneous vegetation; (ii) Historical features

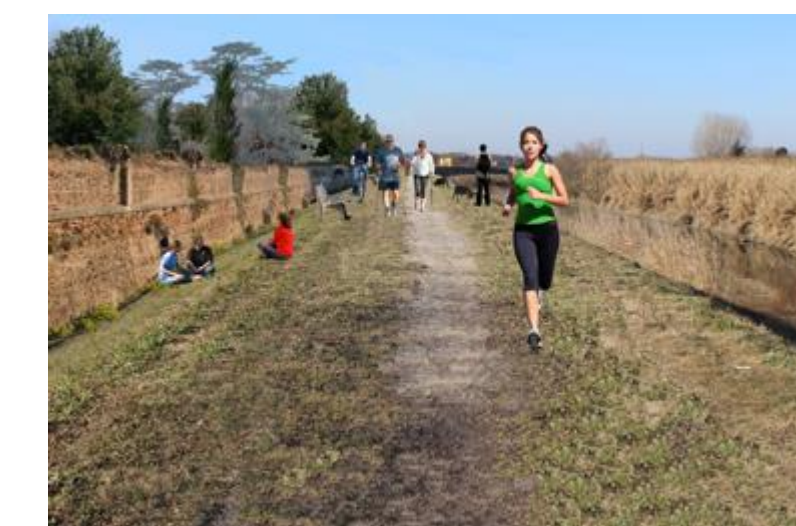
ATTRIBUTES	LEVELS
vegetation	2 Grass lawn with tree rows
	1 Grass lawn with sparse trees and flowerbed
	0 Wild-grown vegetation (woodland)
historic walls	2 Recently restored, in good condition, no vegetation
	1 Strongly deteriorated/damaged
	0 Absent
path	1 Asphalt
	0 Gravel
bench	2 With people
	1 Without people
	0 Absent
waste basket	1 Present
	0 Absent
fitness trail	2 With people
	1 Without people
	0 Absent
drinking fountain	1 Present
	0 Absent
person in the image	0 Absent
	1 from 1 to 4
	2 from 5 to 8
	3 from 9 to 12
bicycle	1 Present
	0 Absent
dog	2 dog on leash
	1 dog off leash
	0 Absent

- Which do you prefer? For stress relief?
Feeling safe?





Results (Multinomial logit)



	MNL GENERAL	MNL STRESS	MNL SECURITY
Grass lawn with sparse trees and flowerbed	0.24 ^{**}	0.45 ^{***}	0.19 [*]
Grass lawn with tree rows	0.05	0.09	-0.01
Strongly deteriorated/damaged	-0.71 ^{***}	-0.69 ^{***}	-0.01
Recently restored, in good condition, without vegetation	-0.58 ^{***}	-0.82 ^{***}	-0.06
Asphalt	-0.17 [*]	-0.29 ^{***}	-0.01
Bench without people	0.20 [*]	0.16	0.31 ^{***}
Bench with people	0.22	-0.02	0.40 ^{***}
Waste basket	0.08	-0.1	0.03
Fitness trail without people	0.09	0.1	0.17
Fitness trail with people	-0.11	-0.06	0.16
Fountain	0.28 ^{***}	0.23 [*]	-0.07
People (from 1 to 4)	-0.33 [*]	-0.69 ^{***}	0.82 ^{***}
People (from 5 to 8)	-0.42 ^{**}	-1.28 ^{***}	0.92 ^{***}
People (from 9 to 12)	-0.69 ^{***}	-1.74 ^{***}	1.28 ^{***}
Bicycle	0	-0.21	-0.14
Dog off leash	-0.09	-0.03	-0.03
Dog on leash	-0.06	-0.09	-0.11
<i>N</i>	3540	3540	3540
adj. <i>R</i> ²	0.0621	0.1825	0.0641
<i>AIC</i>	2335.28	2040.03	2330.44
<i>BIC</i>	2440.2	2144.96	2435.36

Clusters with homogenous preferences



Attribute level	Class 1 (41.4%)	Class 2 (58.6%)
Grass lawn with sparse trees and flowerbed	0.391	0.16
Grass lawn with tree rows	0.777*	-0.053
Strongly deteriorated/damaged	-0.072	-0.788***
Recently restored, in good condition, without vegetation	-0.165	-0.782***
Asphalt	-0.951***	0.014
Bench without people	0.128	0.244
Bench with people	-0.247	0.315
Waste basket	0.151	0.122
Fitness trail without people	-0.012	0.113
Fitness trail with people	0.001	-0.127
Fountain	0.145	0.269
People (from 1 to 4)	-1.904***	0.957**
People (from 5 to 8)	-3.107***	1.172***
People (from 9 to 12)	-3.985***	1.014**
Bicycle	0.725*	-0.057
Dog off leash	0.627	-0.139
Dog on leash	0.57	-0.123
N	885	
Log-likelihood	-1084.247	

Conclusions

- General & stress preferences are usually consistent
- Walls are negatively perceived
- Sparse trees + flowers
- People (stress vs. security)
- Homogenous groups can be identified in relation to different attributes





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**Relax ...you are safe..
Thank you!**

