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

Thomas Campagnaro, Riccardo Da Re, Daniel Vecchiato, Arne Arnberger, Riccardo Celegato, Riccardo Rizzetto, Paolo Semenzato, Tommaso Sitzia, Dina Cattaneo

Department of Land, Environment, Agriculture and Forestry, Università degli Studi di Padova, Viale dell'Università 16, 35020 Legnaro, PD, Italy
Institute of Landscape Development, Recreation and Conservation Planning, University of Natural Resources and Life Sciences, Vienna, Austria
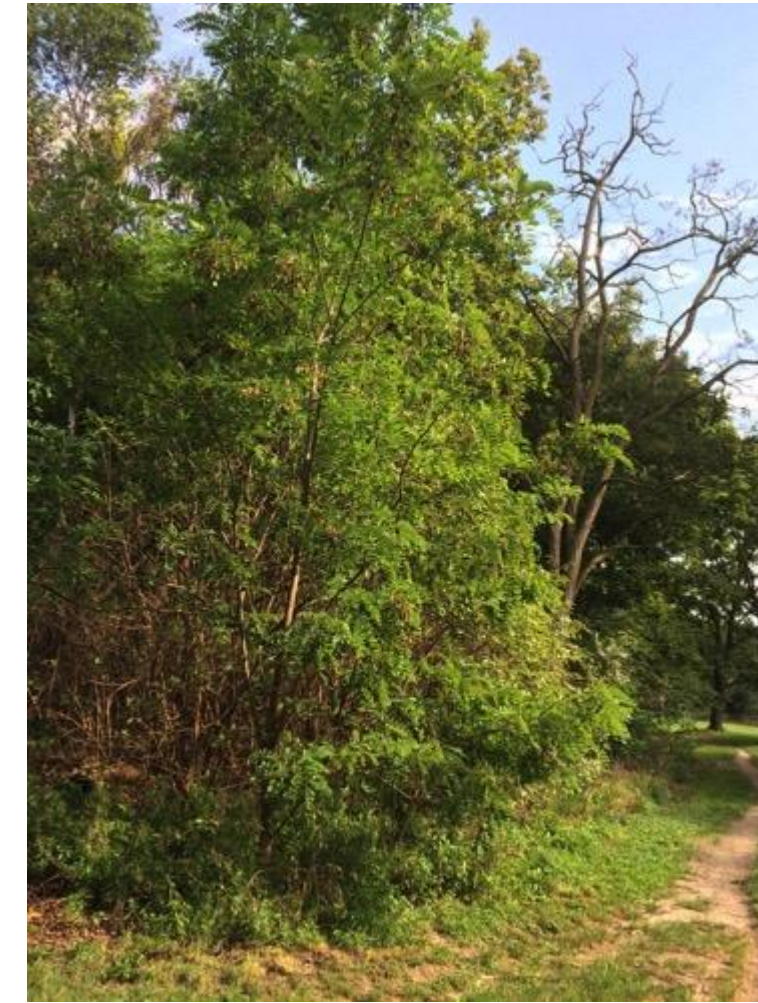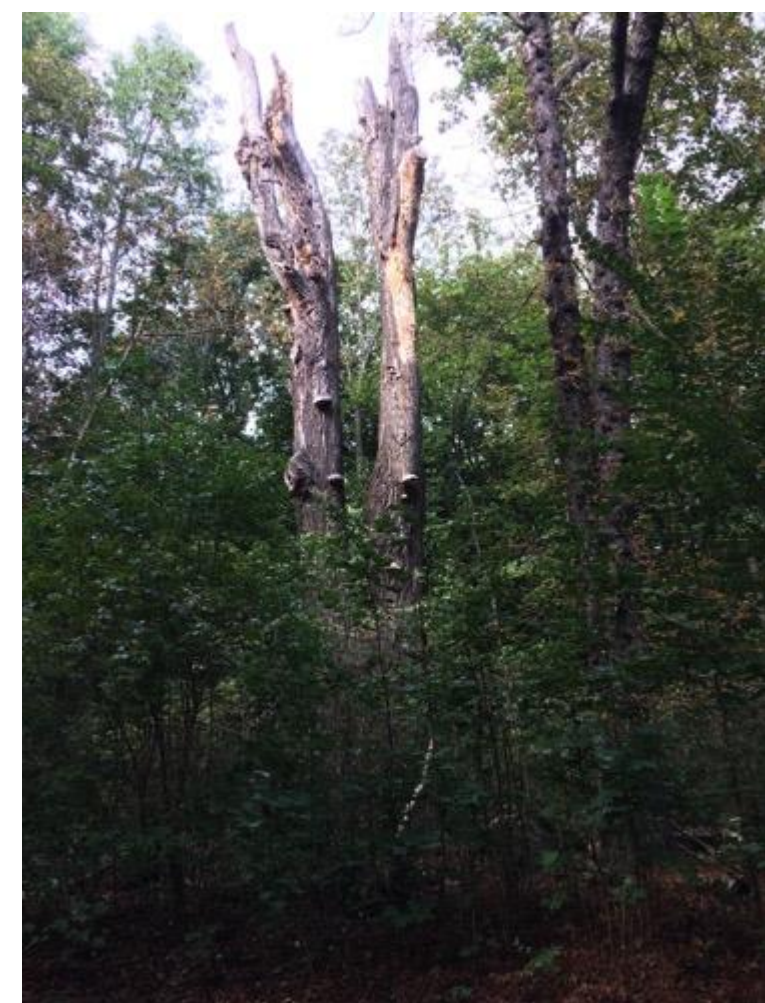
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Outline

- Green spaces preferences

- Study area and methods

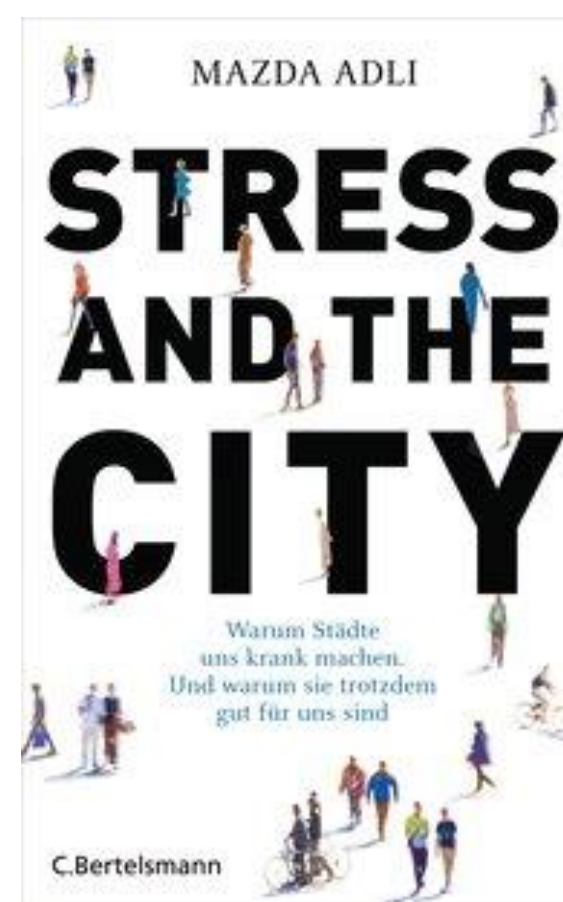- Comparisons: general perception, stress relief, & safety

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
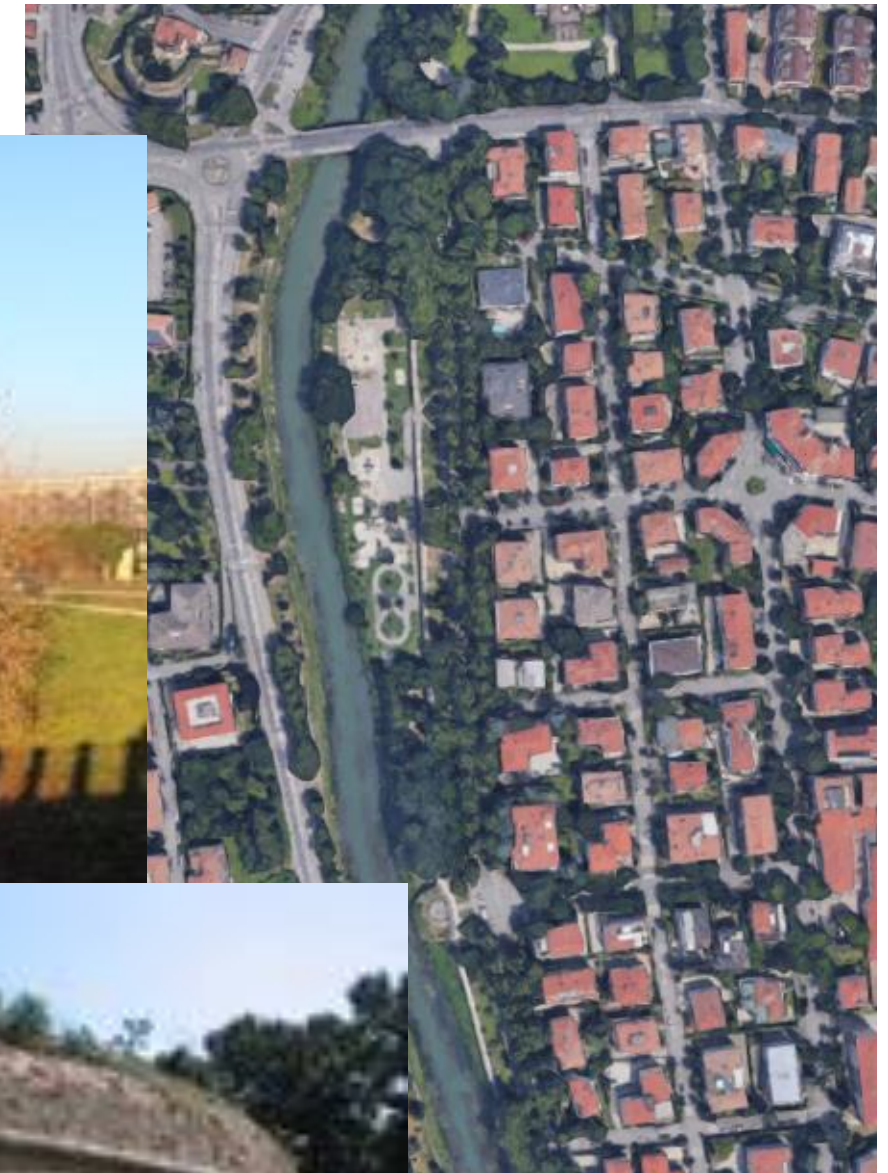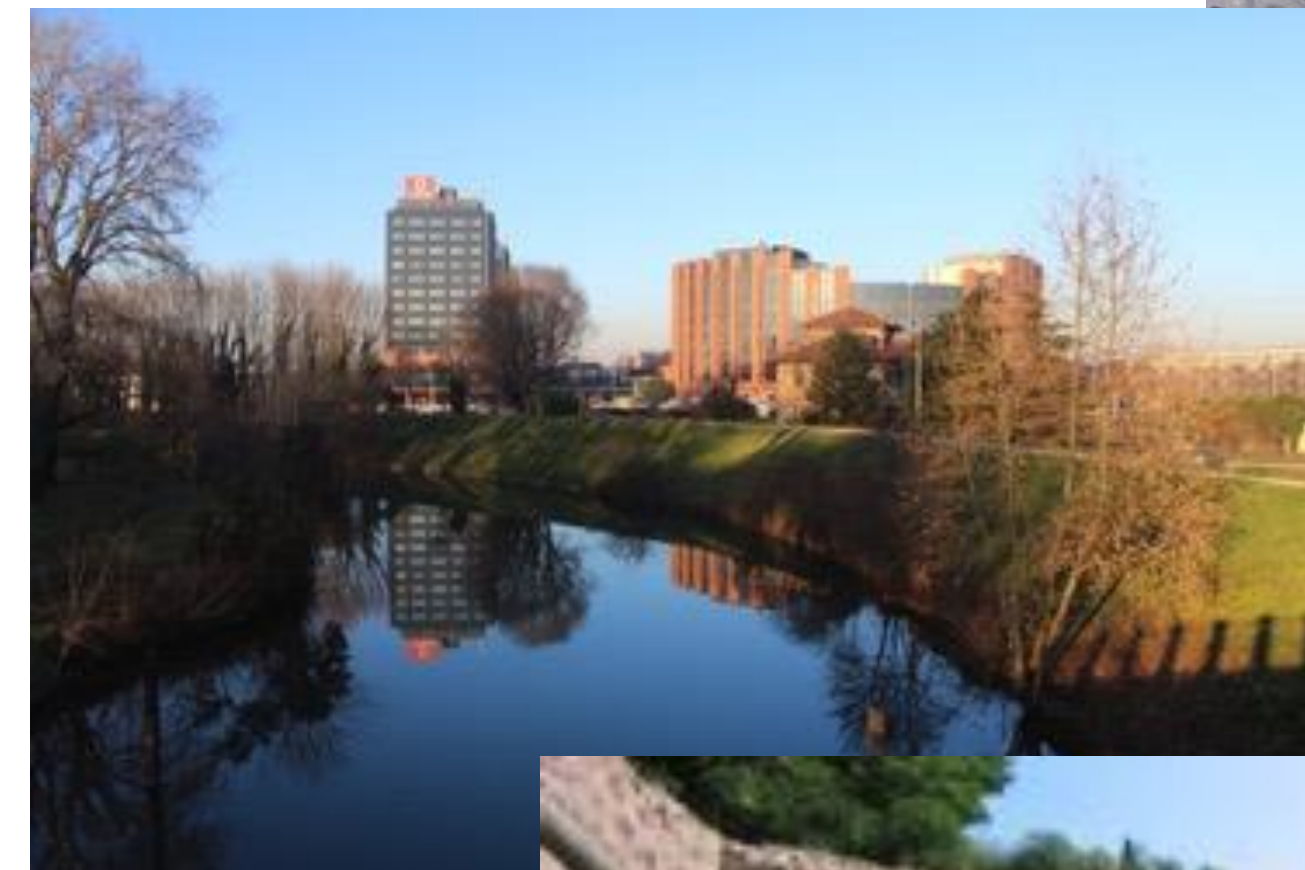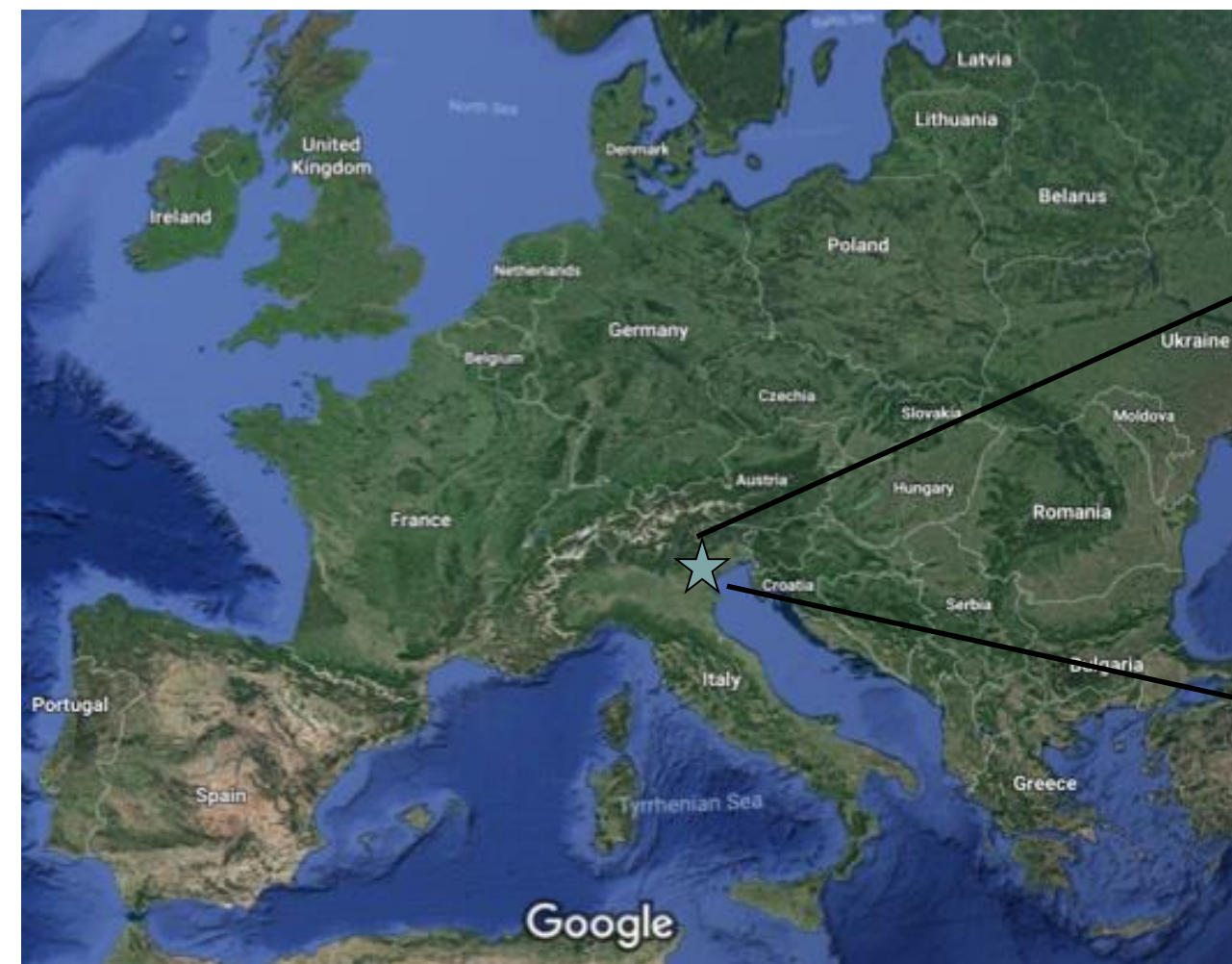
Padova – 214,000 citizens - 93 km^2

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

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)
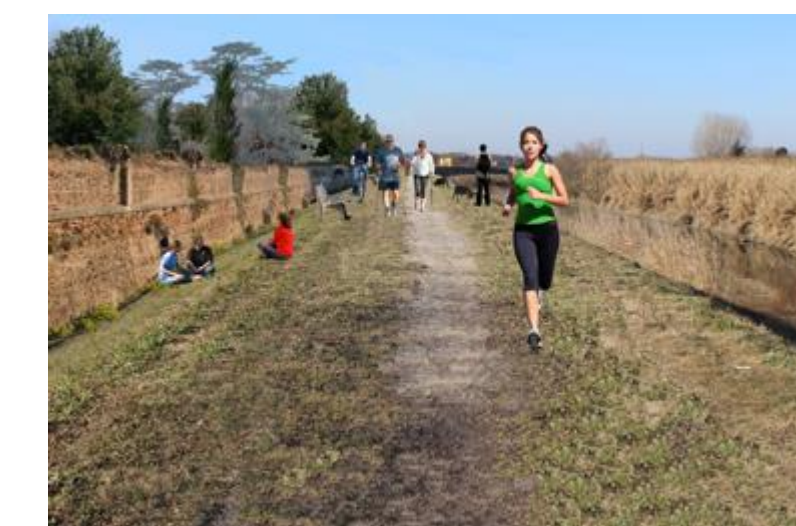
	MNL GENERAL	MNL STRESS	MNL SECURITY
Grass lawn with sparse trees and flowerbed	0.24**	0.45***	0.19*
Grass lawn with tree rows	0.05	0.09	-0.01
Strongly deteriorated/damaged	-0.71***	-0.69***	-0.01
Recently restored, in good condition, without vegetation	-0.58***	-0.82***	-0.06
Asphalt	-0.17*	-0.29***	-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
N	3540	3540	3540
adj. R²	0.0621	0.1825	0.0641
AIC	2335.28	2040.03	2330.44
BIC	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 consiste[nt]

- 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!