Examining the role of the physical environment in supporting older adults' health behavior + some additional stuff

Urban Experience 2021

Tiina Rinne

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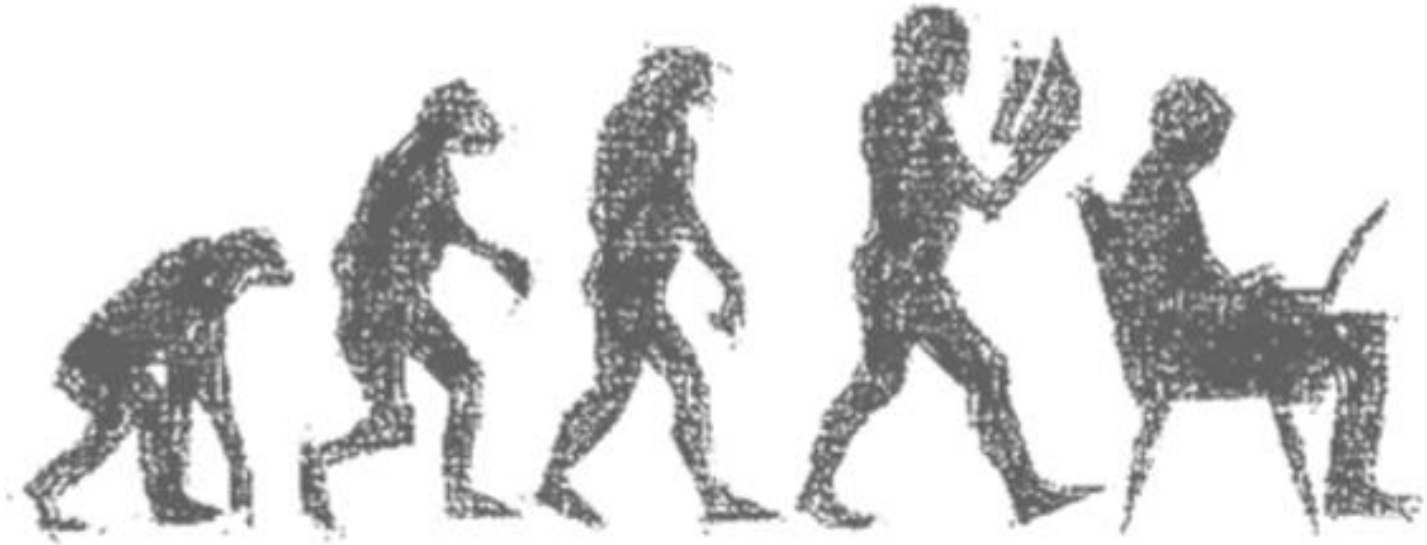
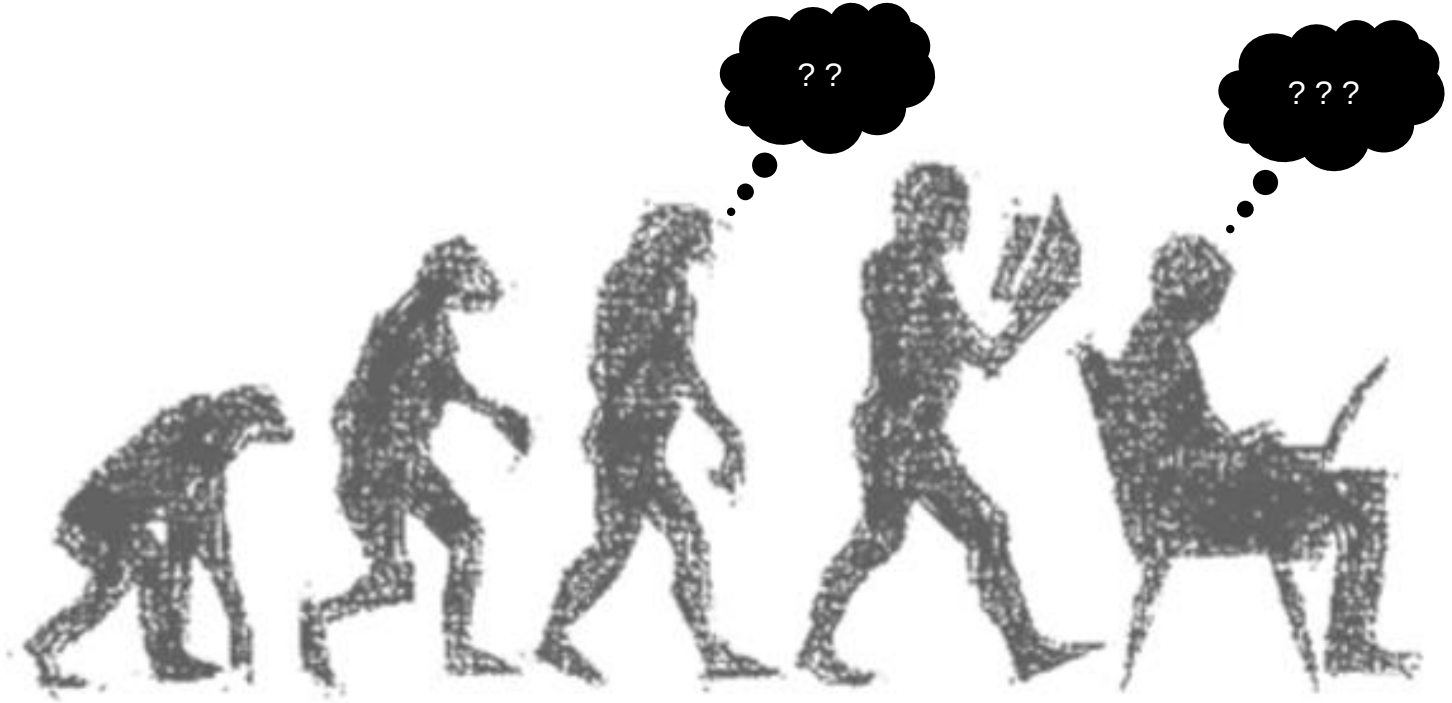


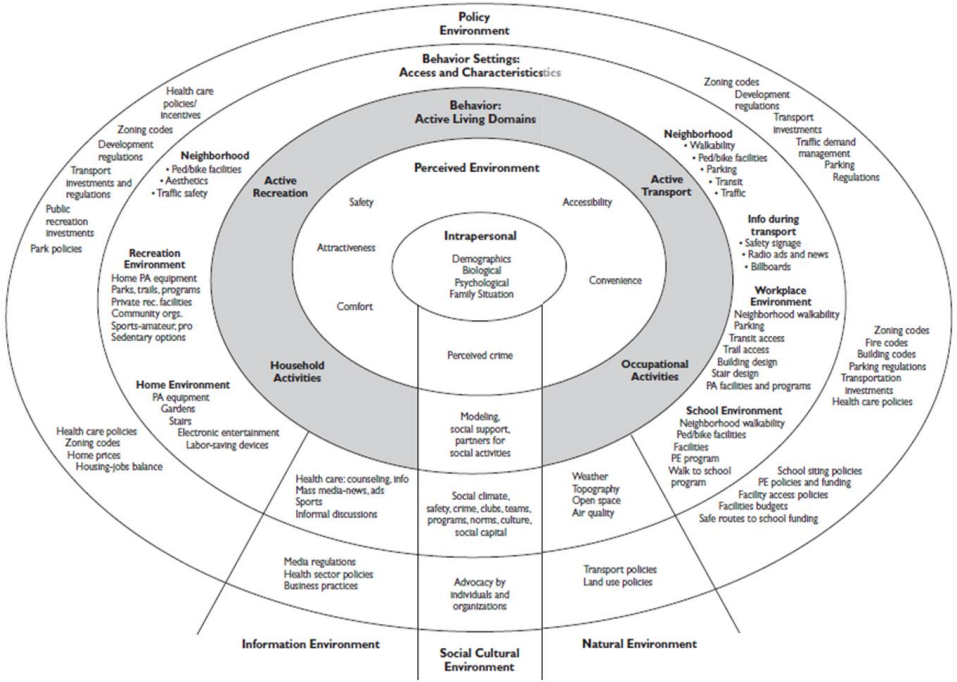
https://slco.org/healthy-lifestyles/blog/Our-Sedentary-Lifestyle/

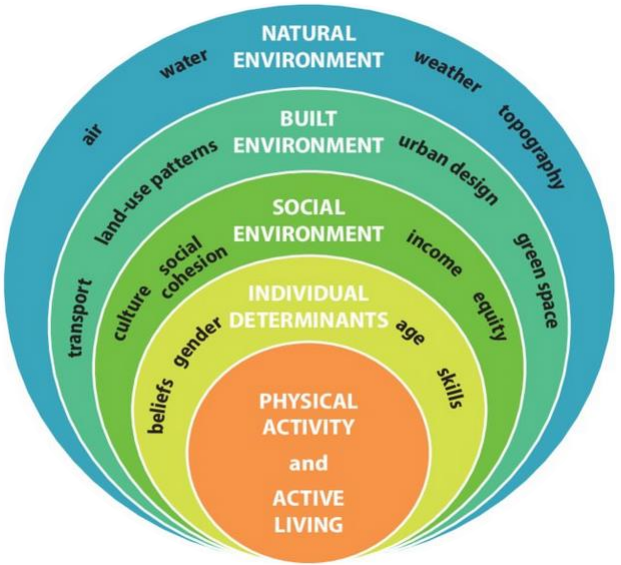


https://slco.org/healthy-lifestyles/blog/Our-Sedentary-Lifestyle/

Map of cholera cases in Soho, London, 1854. Source: Wikimedia Commons.

Ecological models of health behavior





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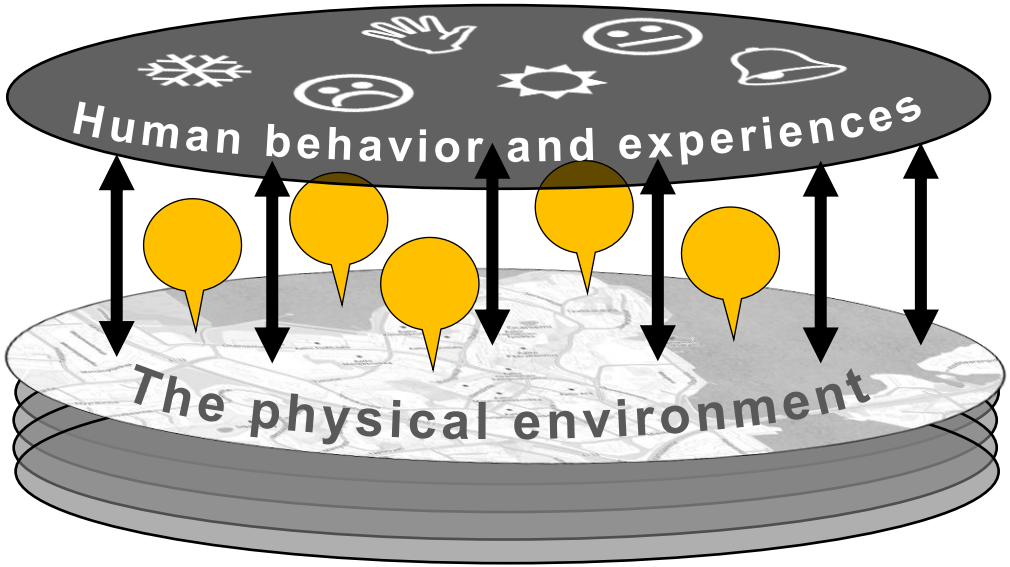
The localization of human experiences

The “soft” GIS

The “hard” GIS



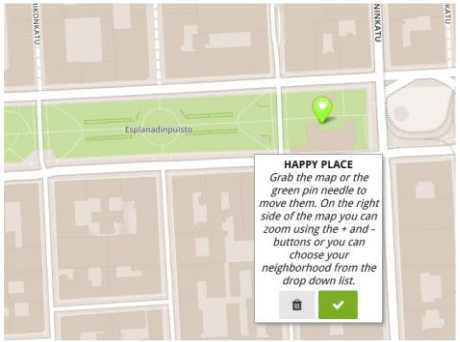
We all perceive varying opportunities and restrictions for different actions in a given environment

”But can older adults even use it?”

Usability of PPGIS among older adults

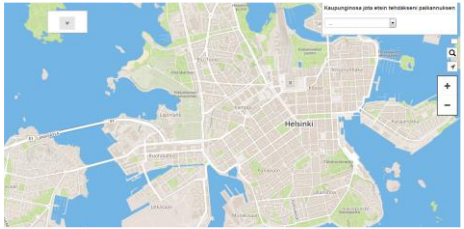
A)

B)



A)

B)



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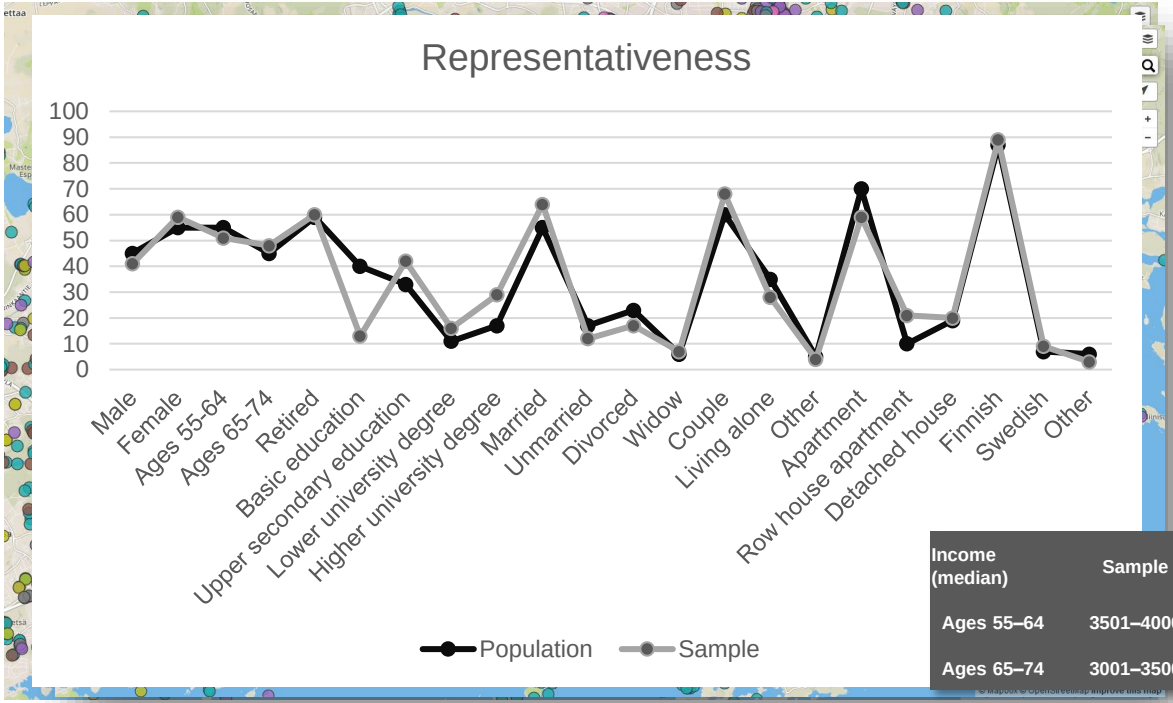
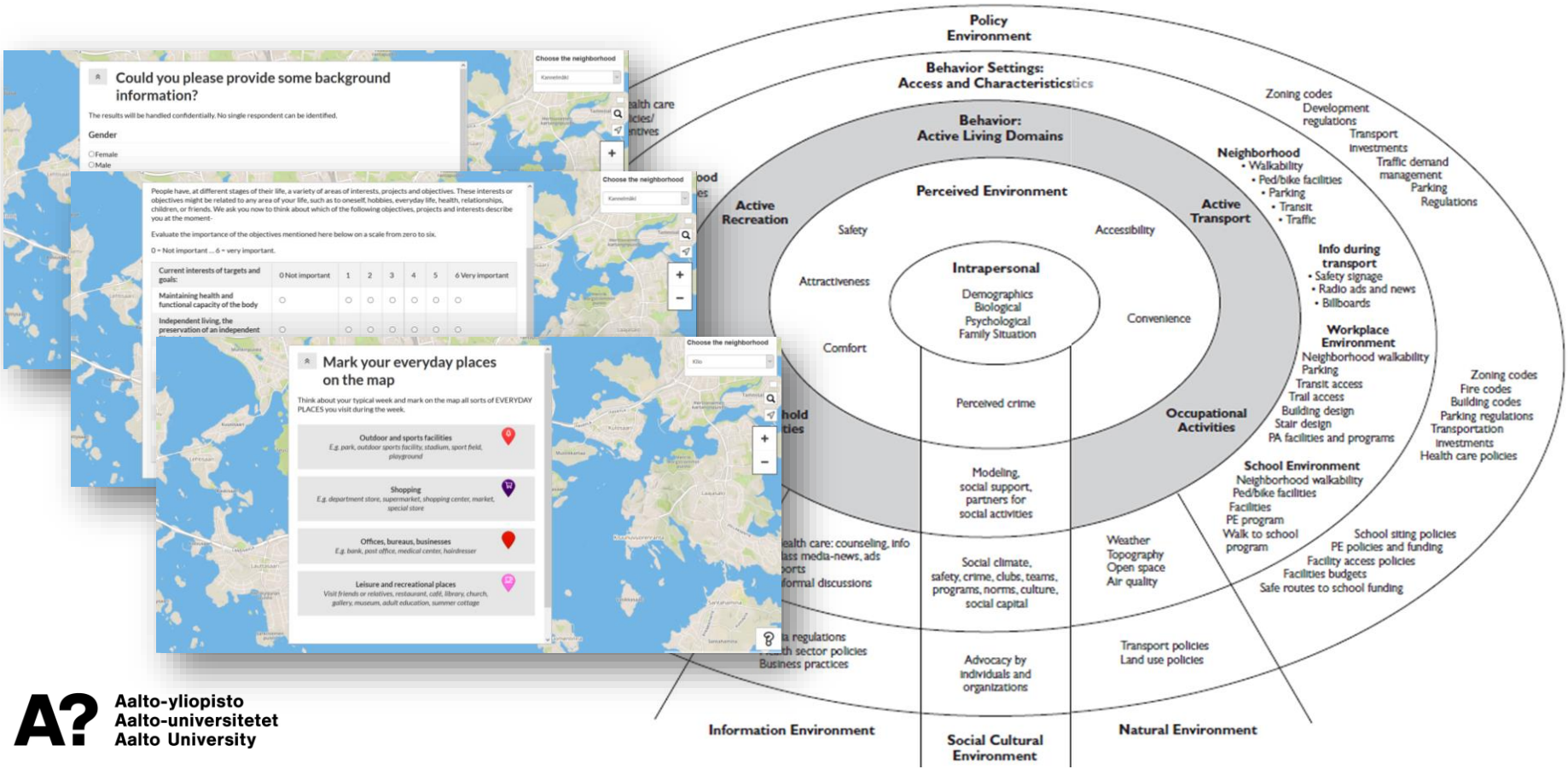
Is it usable?



Income (median)	Sample	Statistics Finland (%)*
Ages 55–64	3501–4000	4001–4500
Ages 65–74	3001–3500	3001–3500

What really moves older adults?



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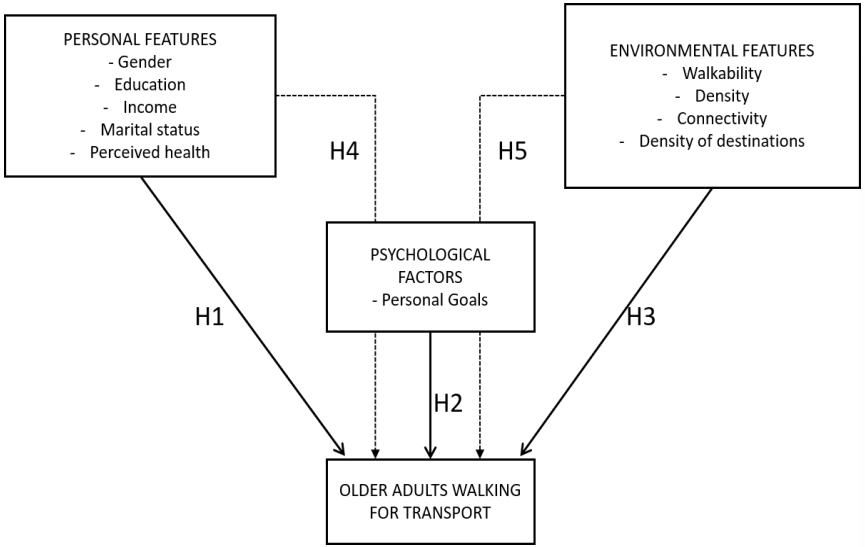
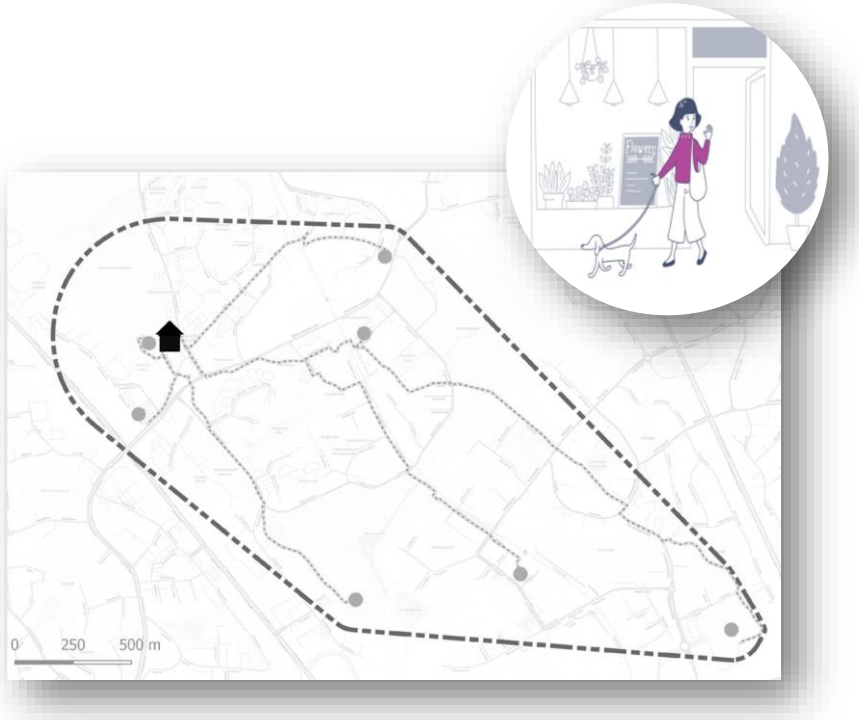
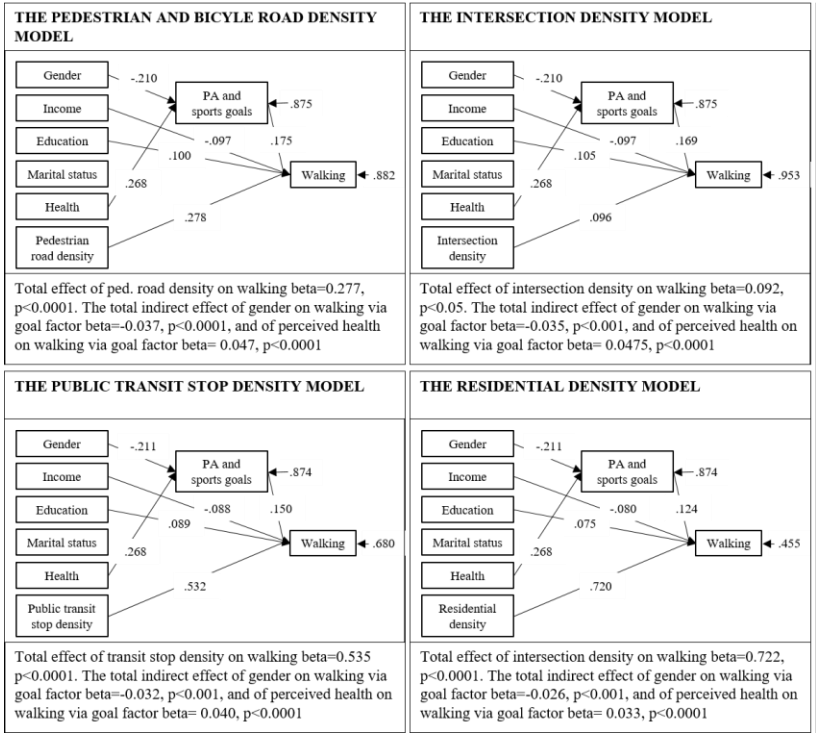
How personal, psychological and environmental features are associated with walking behavior in older adults?





How personal, psychological and environmental features were associated with walking behavior in older adults?

We tested separate OLS regression models for each of the five density measures and the indirect effects of personal as well as environmental variables on walking via PA and sport goal factor was examined using structural equation modeling.



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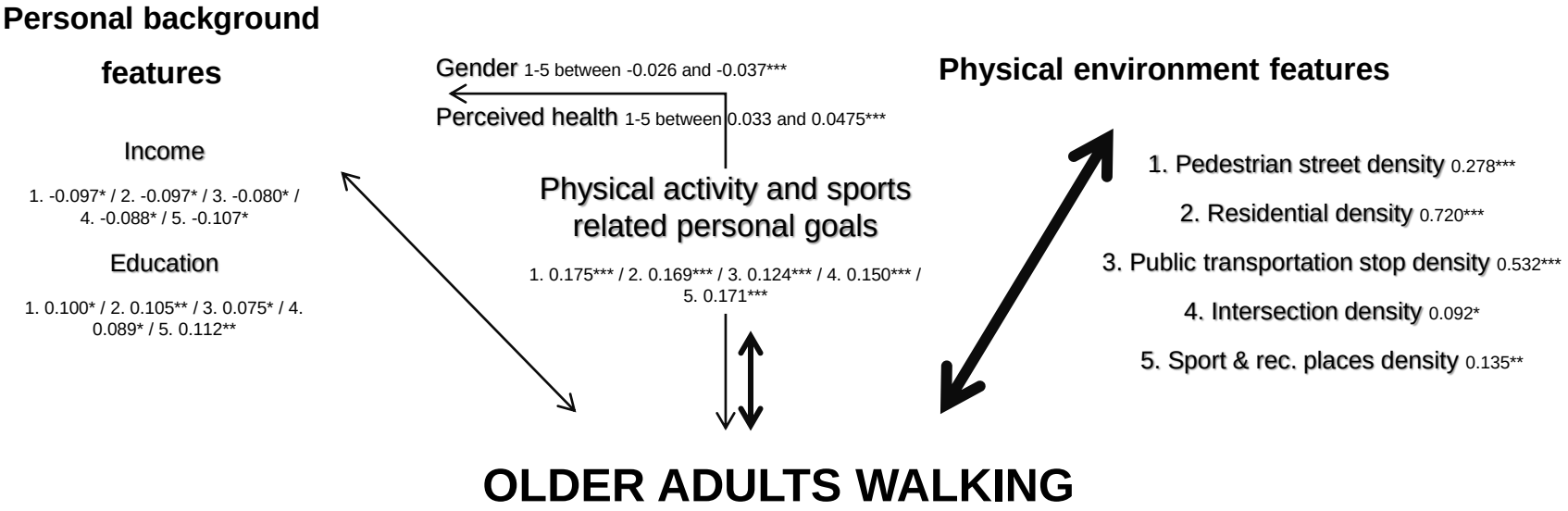
How personal, psychological and environmental features are associated with walking?

PERSONAL FEATURES

ENVIRONMENTAL FEATURES



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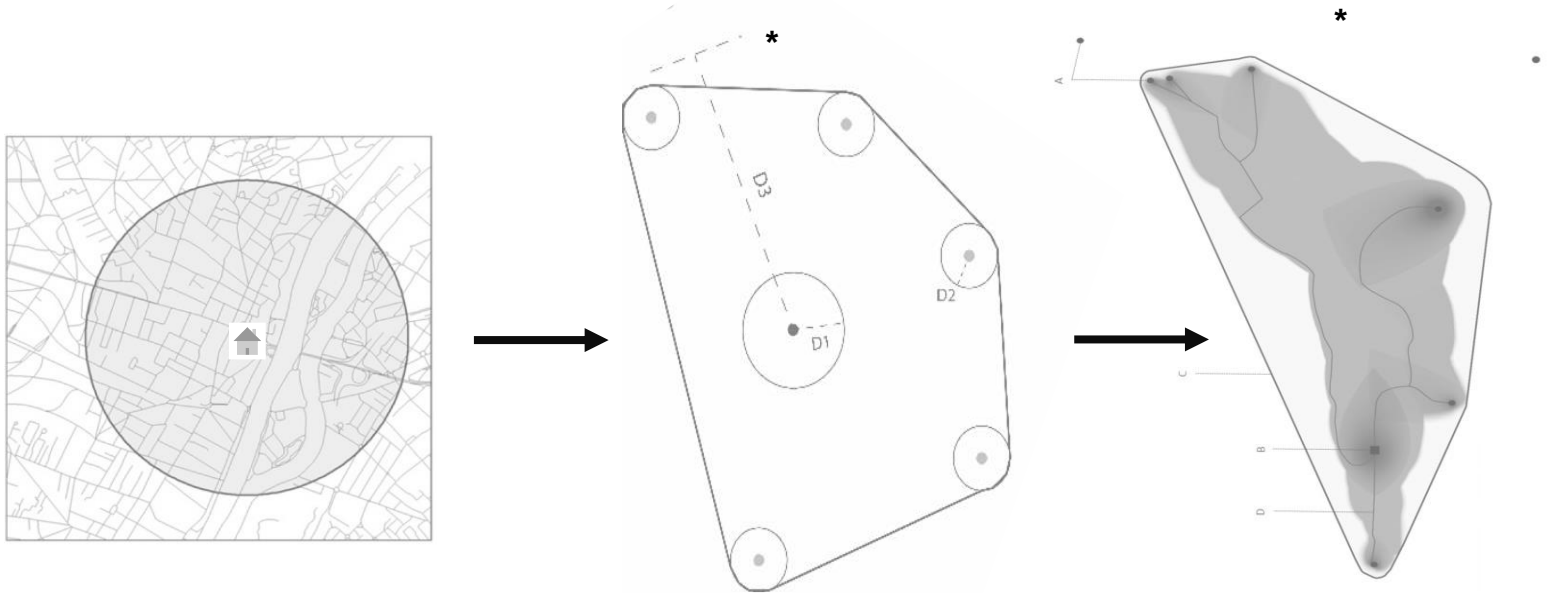
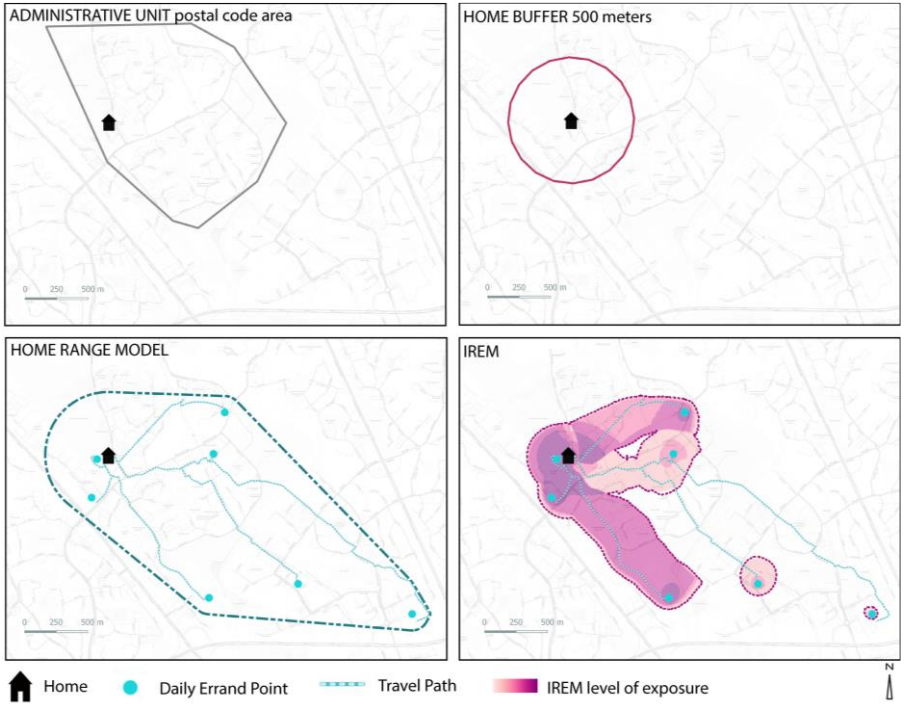
Static spatial perspective to built environment excludes the human behavior



Capturing exposure in environmental health research

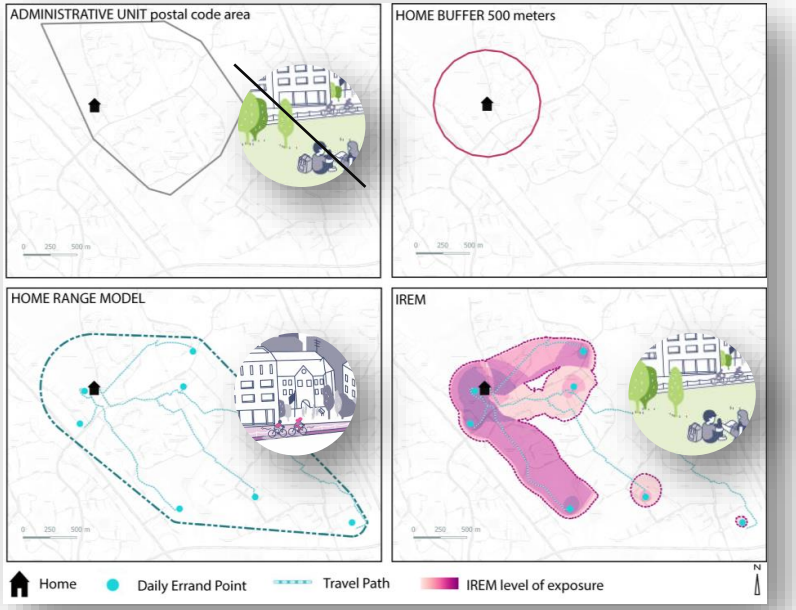
- Does different residential and activity space units of analysis yield distinct results regarding the association between the built environment and older adults' perceived health?

- What are the challenges and opportunities of the different spatial units of analysis for environmental health-related research?

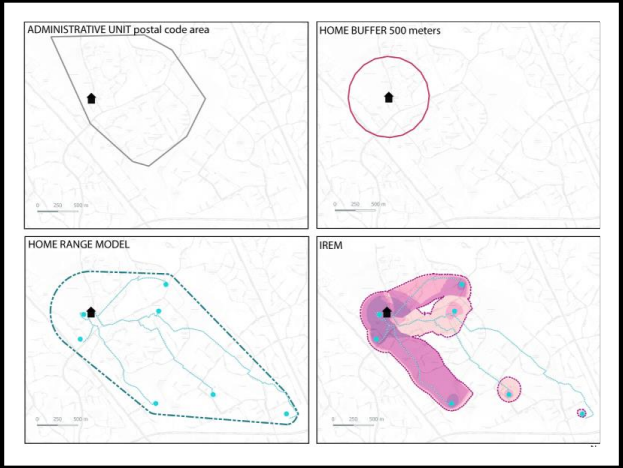


Capturing exposure and the association between the built environment and health

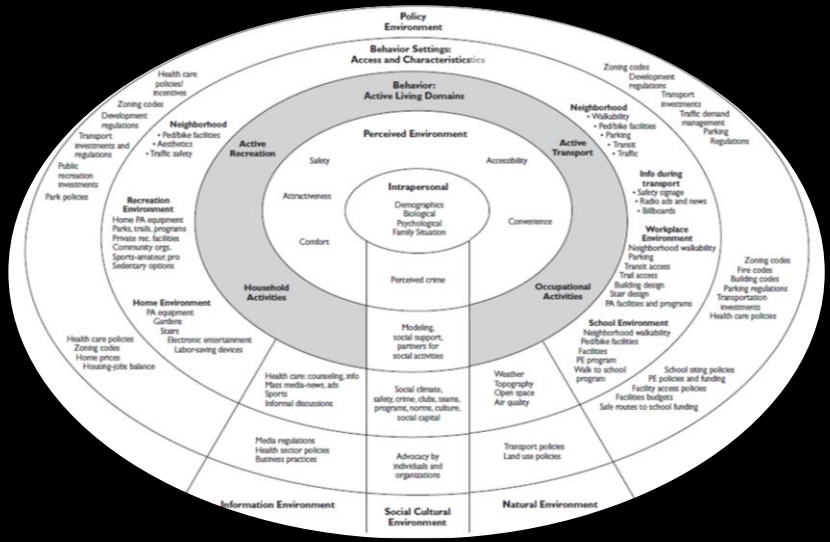
- All four models yield distinct results: different models result in considerably different measurements of built environment
- Different spatial units seem to considerably affect the associations between environment characteristics and wellbeing measures



How are the conceptual and methodological aspects of capturing the spatial context taken into account in physical activity research?



How about different dimensions of the ecological models?



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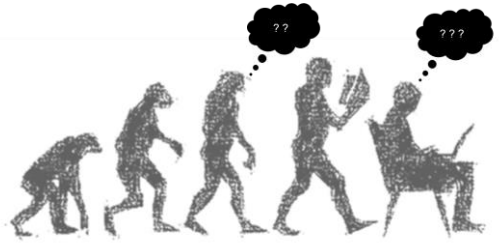
Capturing the spatial context

Subjective approach	Perceived Neighborhood	276	67 %
Objective approach	Administrative Unit	118	29 %
	Single point location	11	3 %
	Single point buffered	40	10 %
	Multiple points	22	5 %
	Multiple point buffered	8	2 %
	Activity Space approach	10	2 %



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Capturing different layers

Which layers?

Only Physical Environment	4	1 %
Physical Environment + 1 layer	**98**	**24 %**
Physical Environment+ 2 layers	**189**	**46 %**
Physical Environment+ 3 layers	75	18 %
Physical Environment+ 4 layers	41	10 %
Physical Environment+ 5 layers	5	1 %

Physical Environment + 1 layer (n=98)	Intrapersonal	Socio-Cultural	Nature	Information	
	92	3	2	1	
	94 %	3 %	2 %	1 %	
Physical Environment+ 2 layers (n=189)	**Intrapersonal + Socio-Cultural**	Intrapersonal + Nature	Intrapersonal + Information	Intrapersonal + Policy	Socio-Cultural + Policy
	172	8	3	5	1
	91 %	4 %	2 %	3 %	1 %
Physical Environment+ 3 layers (n=75)	**Intrapersonal + Socio-Cultural + Nature**	Intrapersonal + Socio-Cultural + Information	**Intrapersonal + Socio-Cultural + Policy**	Intrapersonal + Information + Policy	Socio-Cultural + Information + Policy
	36	8	**25**	2	4
	48 %	11 %	**33 %**	3 %	5 %
Physical Environment+ 4 layers (n=41)	Intrapersonal + Socio-Cultural + Nature + Information	Intrapersonal + Socio-Cultural + Nature + Policy	**Intrapersonal + Socio-Cultural + Information + Policy**	Socio-Cultural + Nature + Information + Policy	
	7	14	**19**	1	
	17 %	34 %	**46 %**	2 %	

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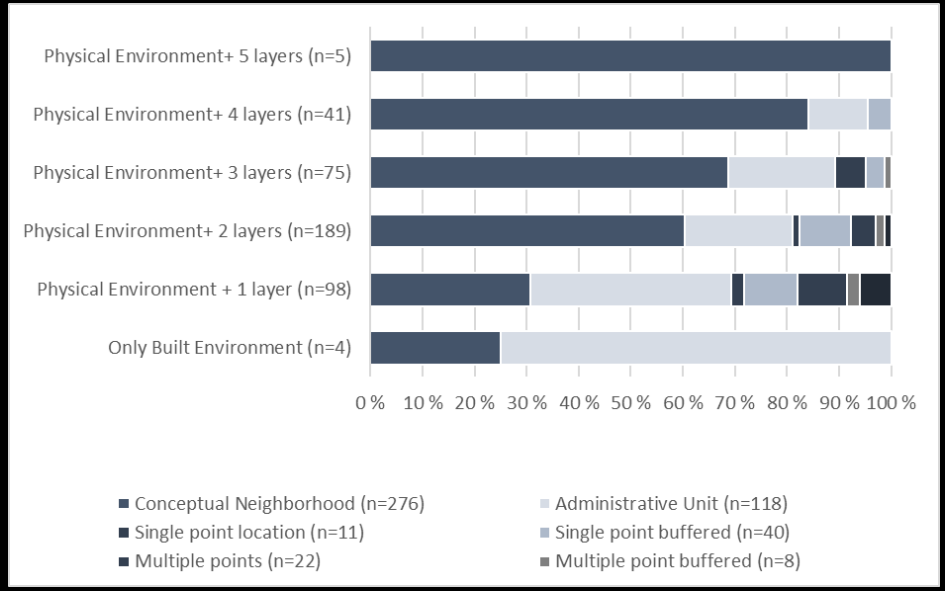
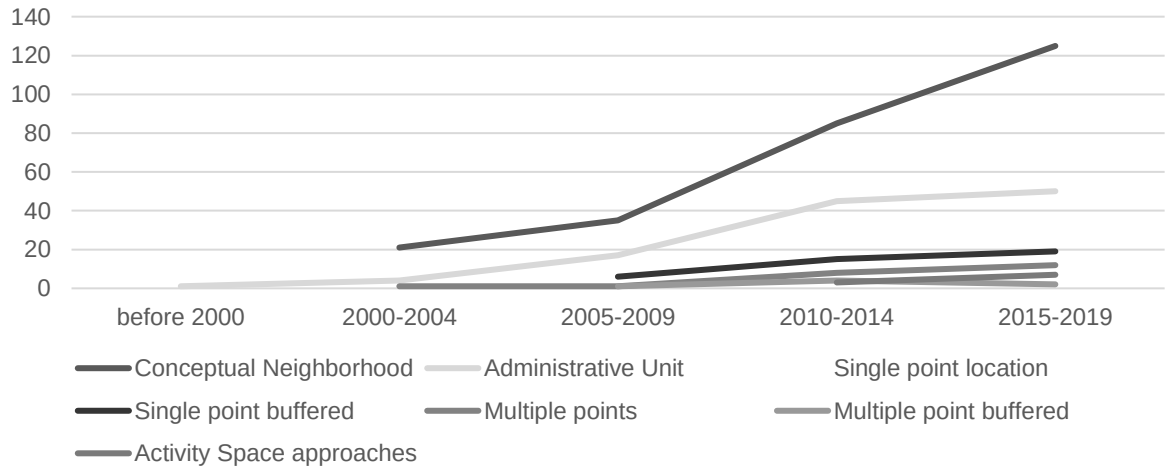
Capturing the spatial context with different layers applied



Periodic distribution



I would argue that we are still far from understanding the multiple level effects on human health behavior as suggested by the ecological models.

A throughout methodological and theoretical update is needed.