

# Functional Environments

SPT-E5020

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Photo by Kyle Ryan on Unplash



# The functional quality of the environment

## VARIOUS SETTINGS:

Objects

Dwellings

Blocks

Neighbourhoods

Urban environments

Etc...



## VARIOUS USER GROUPS:

Children

Adults

Again population

People with disabilities

Mothers with strollers

Etc...



# Two basic approaches to explain behavior

Which  
explain  
behavior  
more?

1

## COGNITIVE APPROACH

Mental constructs (beliefs, values, attitudes, social norms) mainly guide behavior

2

## FUNCTIONAL APPROACH

Environment (physical, social, cultural) mainly responsible for behavior that we engage

# Fear of determinism...

## Determinism

One-way, determining influence of the physical environment on human behaviour.

## Possibilism

The choice regarding how to behave in a certain environment lies ultimately with the resident.

## Probabilism

Some choices are more likely in certain contexts than others. In this framework, urban planning and design becomes rather a creation of place potentials than of place-making

Dempsey, (2009) Are good quality environments socially cohesive? 1Measuring quality and cohesion in urban neighbourhoods. *Town Planning Review*, 80(3), 315–345.

# Theoretical approaches in psychology highlighting functionality

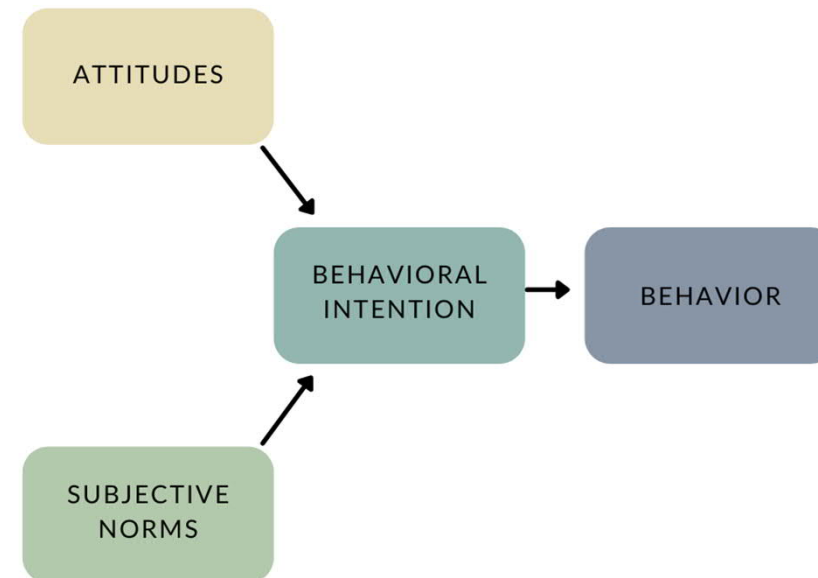
## ACTIVITY THEORY

By Luria, Vygotsky, Leontjev

- Mental functions developing from the performance of external actions
- Activity situated within a historical, social, and cultural context
- Mediation tools essential that facilitate performance

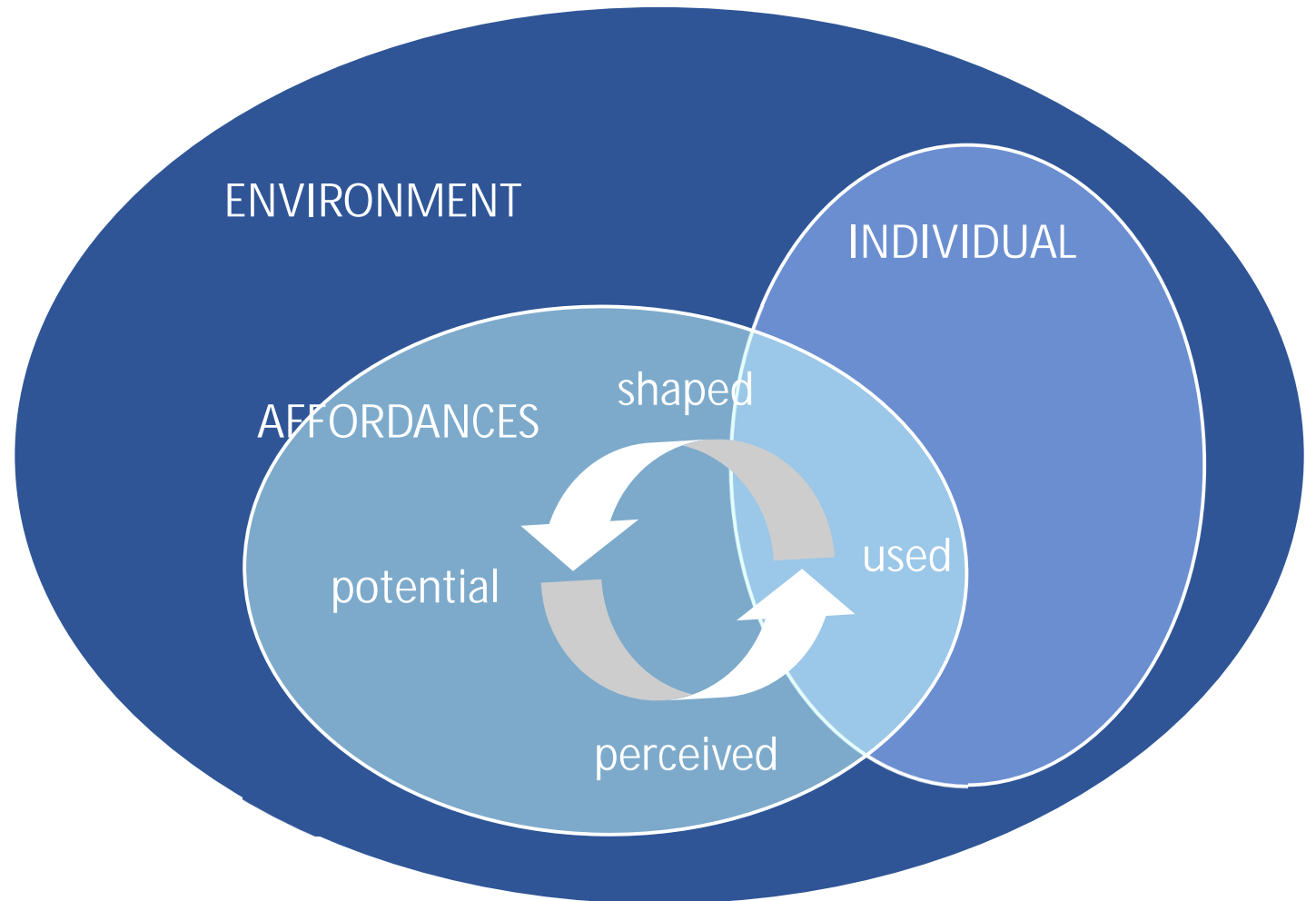
## THEORY OF PLANNED BEHAVIOR (or THEORY OF REASONED ACTION)

By Fishbein & Ajzen



# James J. Gibson's ecological perceptual psychology

*The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. The verb to afford is found in the dictionary, but the noun affordance is not. I have made it up. I mean by it something that refers to both the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment. (Gibson, 1979/1986, p. 127).*



# Affordances are related to the bodily capabilities and dimensions of an individual

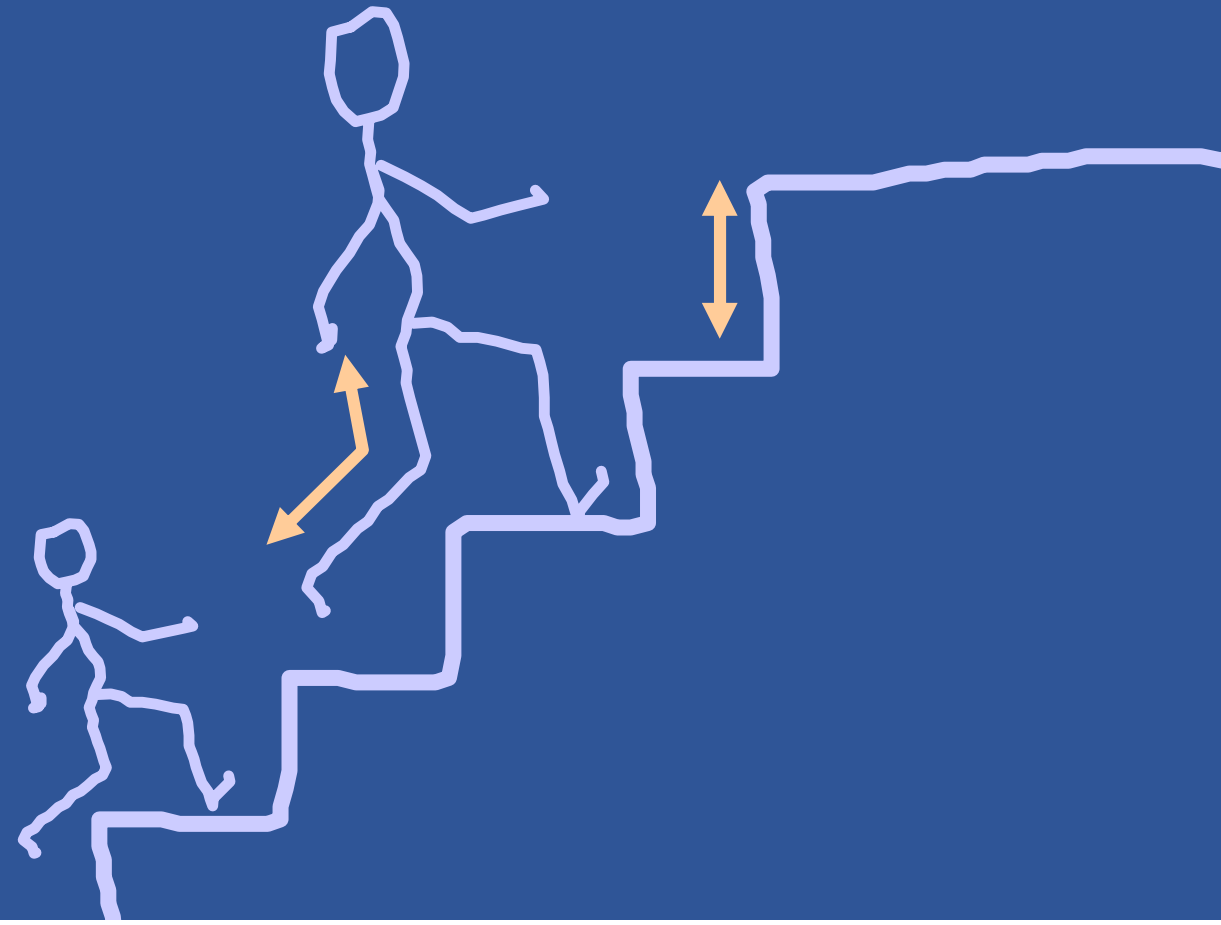
Warren (1995) developed a formula for optimal step height:

$$\pi = R/L$$

where R = the height of a step

L = the length of the leg of the person

$\pi_0$  = optimal relationship, that fits to the majority of people



# Urban affordances



Hadavi, S. Kaplan, R. & Hunter, M.C.R. (2015) Environmental affordances: A practical approach for design of nearby outdoor settings in urban residential areas. *Landscape and Urban Planning* 134, 19–32.



Richard Coyne (2021) Reflections on Technology, Media & Culture. <https://richardcoyne.com/2021/10/30/urban-affordances/>

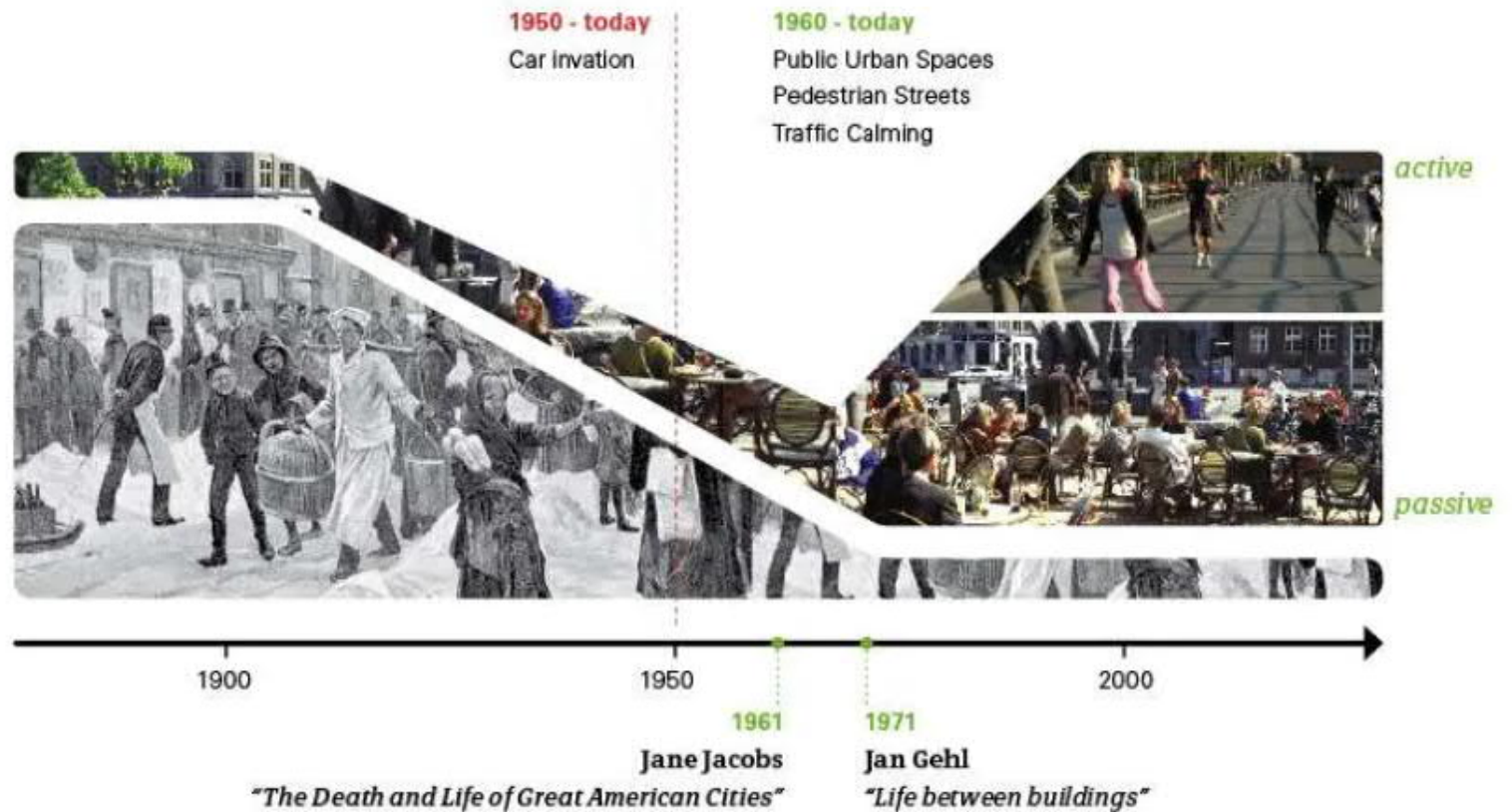


# Jan Gehl: Public life in cities

Necessary Activities

Optional Activities

Social Activities



# Functional quality

NOT guaranteed by  
functionalistic planning!

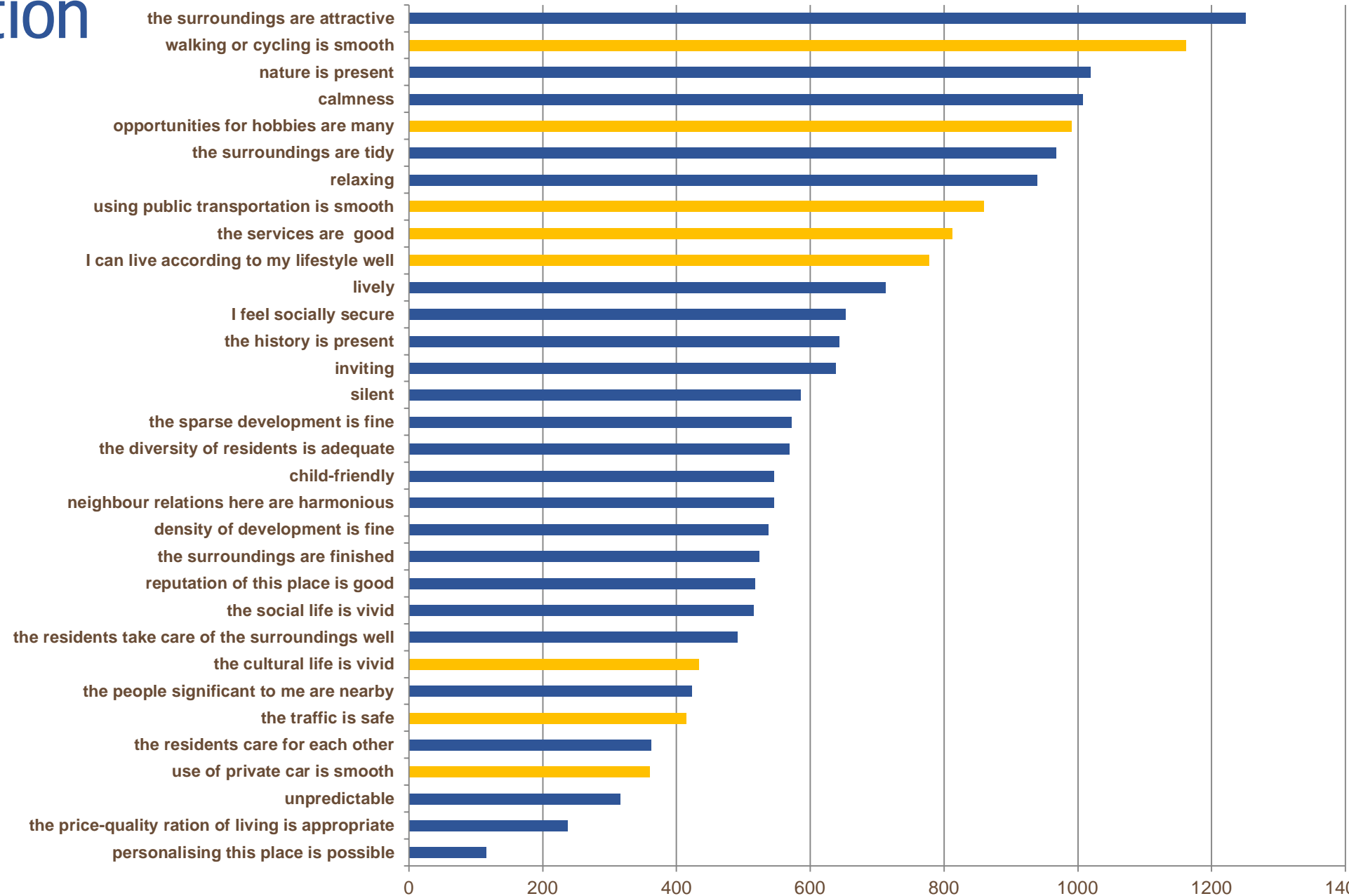
Rather by:

- Mixed structure
- Accessibility
- Close by services
- Polymorphic space
- Etc.



# Operationalization of functional quality

(Urban Happiness –study)



# Evaluation of functional quality

## BUILDING LEVEL EVALUATION

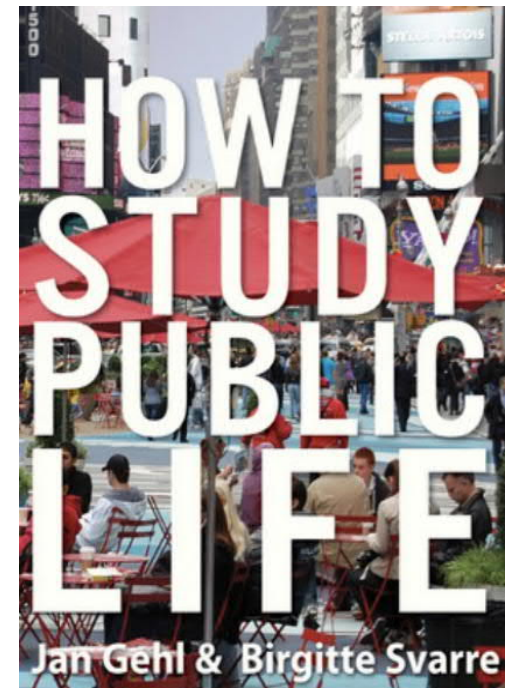
- POE Post Occupancy Evaluation
- Preiser: "The process of evaluating buildings in a systematic and rigorous manner after they have been built and occupied for some time"



- Methodology:
  - Walkthroughs
  - Observations
  - Surveys
  - Interviews

## NEIGHBOURHOOD LEVEL EVALUATION

- Ex-post evaluation
- Not done very often
- Except for Jan Gehl and us...



# How to promote pro-environmental behavior?

Again:  
Two main  
approaches

1

## INFORMATIONAL STRATEGIES

Aim to change knowledge, values, attitudes, beliefs, social norms

2

## STRUCTURAL STRATEGIES

Aim to change environmental circumstances and change habits or automatic behavior

# What really works?

Education  
Information campaigns  
Financial motivation

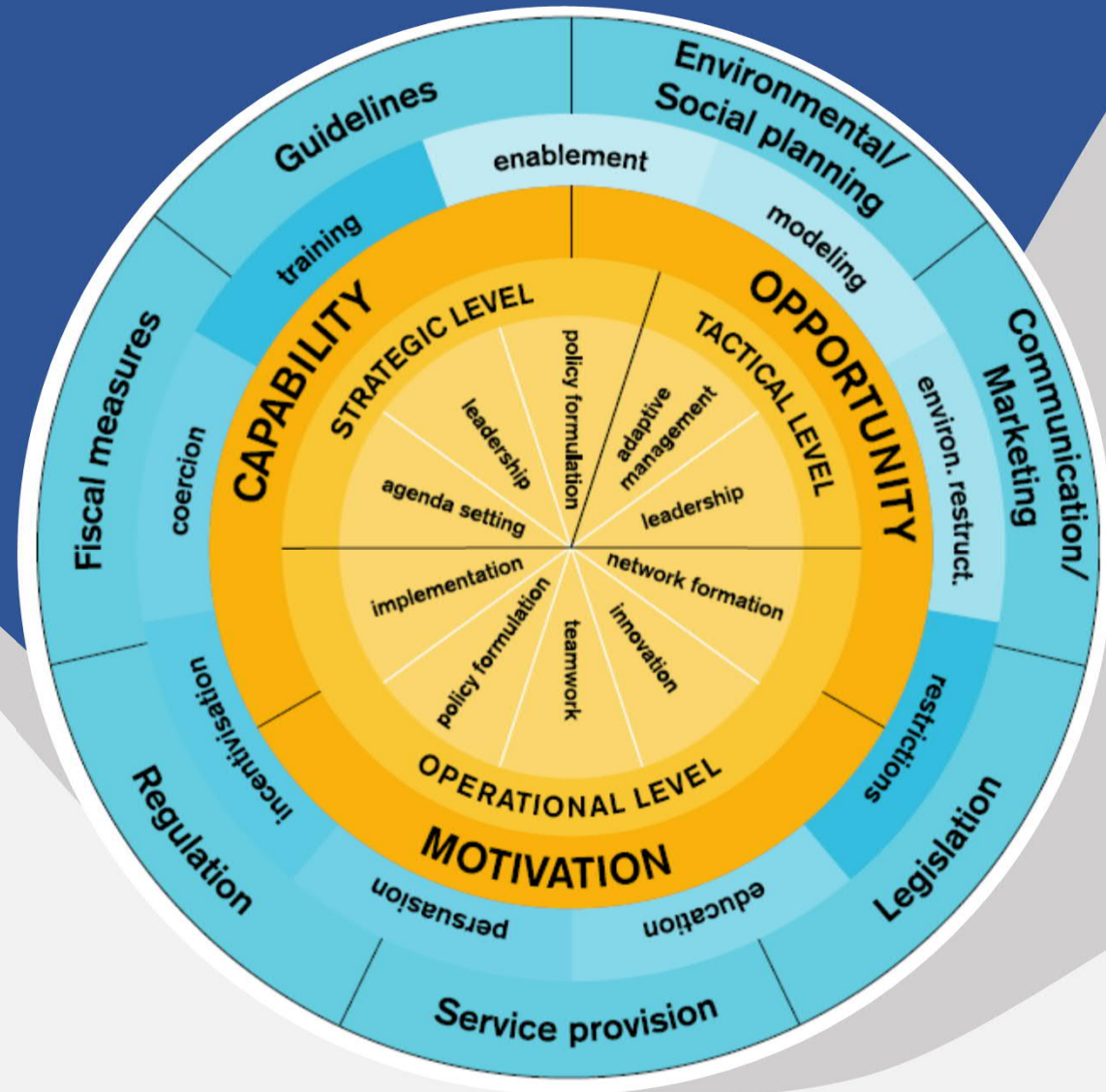


Tailored information &  
feedback  
Social influence  
Nudging



Abrahamse, W. (2020) Encouraging pro-environment behavior: what works and what doesn't. BECC webinar <https://www.youtube.com/watch?v=tlzObZnwq6w>

# Behavior Change Wheel (BCW) ... or Ball



Hendriks, A. -, Jansen, M. W. J., Gubbels, J. S., De Vries, N. K., Paulussen, T., & Kremers, S. P. J. (2013). Proposing a conceptual framework for integrated local public health policy, applied to childhood obesity - the behavior change ball. *Implementation Science*, 8(1)