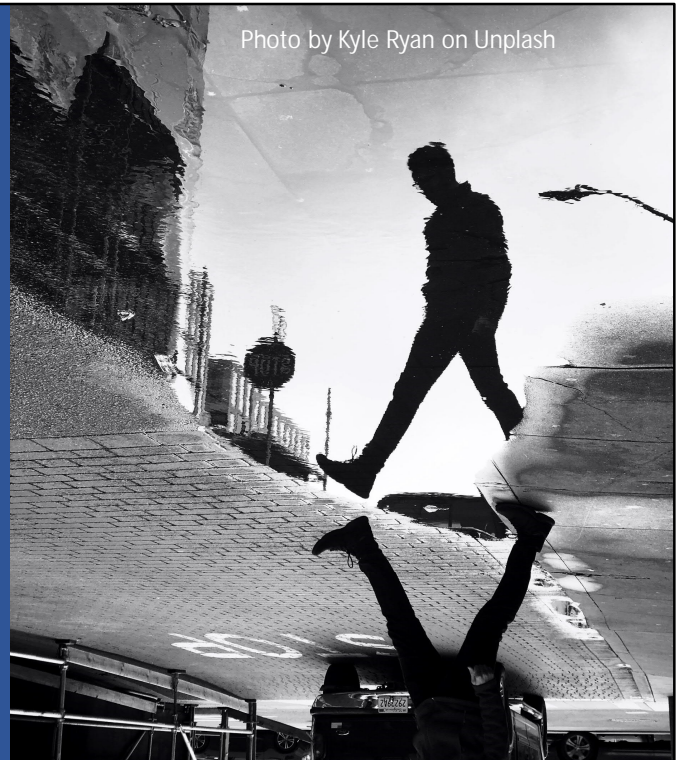# Functional Environments

SPT-E5020
Marketta Kyttä

Functional relationship is in the core of urban experience. Without concrete, mundane relationship with the setting it is impossible to create a personal relationship with the environment – at least in any other level than purely abstract level.

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...

Functional relationship with the environment concerns a variety of settings in different levels of the environment. We can evaluate the functional quality of individual objects but also larger settings like dwellings, neighbourhoods and urban environments. It is crucial to understand that not a single person can evaluate the functional quality of a settings only from his/her perspective – not even if he/she happens to be a designer or planner. You have to test the functional quality by other users. Especially those user groups with specific physical functional capabilities or disabilities, like children the elderly or persons using a wheelchair are especially relevant in the evaluation of the functional quality of a setting. Let us come back to the question of functional quality later.

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

De Houwer, J. (2011) Why the Cognitive Approach in Psychology Would Profit From a Functional Approach and Vice Versa. Perspectives on Psychological Science, 6(2) 202–209.

Now; lets have a short theoretical part in this presentation. Think about a one of the most fundamental question in psychology: which factors explain behavior? Here I would like you guys to tell me which of the two you think explain behavior more: 1. Mental constructs, anything that happens inside our heads? Beliefs, values attitudes, social norms? OR 2. Environment. Do you think that the specific characteristics of the context – are these things more responsible for our behavior?

Well this is classic question in psychology that clearly has not yet been solved at all.

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.

I would say that the majority of psychological research focus clearly more to what happens inside our heads. In social sciences also more generally the fear of determinism has prevented us from taking the role of environment very seriously. This is s pity because taking seriously the role of the environment does not automatically mean determinism. There is for example POSSIBILISM that is highlighting that it is ultimately the individual who choses the way how she/he reach to the stimuli of the environment. Or there is PROBABILISM that highlight that some choices are more likely in certain contexts than others. This framework can be especially interesting from the point of view of urban planning and design, because planning becomes a creation of place potentials.

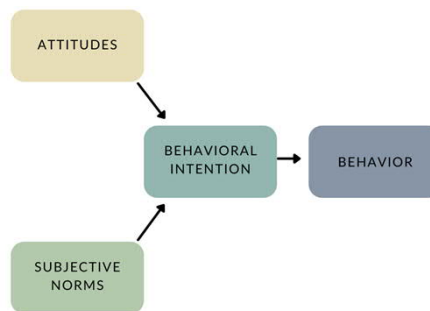# Theoretical approaches in psychology highlighting functionality

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

In psychology there are surely several theoretical approaches that are focusing on the functional perspective. For example, the activity theory, that originates to the Sovjet psychology by Lurija, Vygotski and Leontjev, they studied human behavior situated within a historical, social, and cultural context. So this approach concentrated on that side of the coin where environment is seen as fundamental in modifying behavior. Then, one of the most popular psychological theories is the theory of planned behavior (or the theory of reasoned action) that is pretty much arguing that our attitudes and values, things that happen inside our heads, are responsible for our behavioral intentions and ultimately our overt behavior.

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) .

ENVIRONMENT

INDIVIDUAL

AFFORDANCES shaped

potential used

perceived
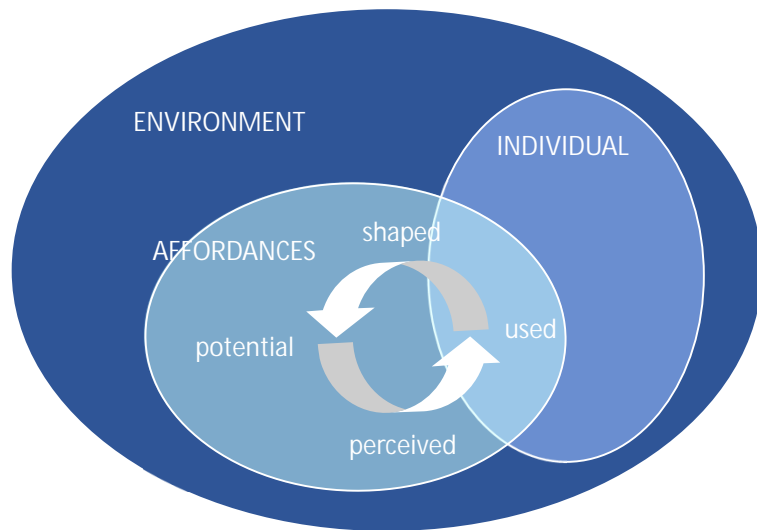
If you still remember what I said in the Introductory lecture might not be surprised when I say that I am personally not a big fan of neither of these approaches. You may remember that I favoured so called transactional approaches that take seriously the active role of both person and the environment – this means that I certainly believe that human behavior is modified both by mental constructs and environment.

 I last time already quicky referred to the ecological perceptual psychology by James J Gibson as one of the few truly transactional approaches. In this perceptual psychology Gibson really argues that what we primarily perceive in the environment are the functional possibilities that the environment offers for us. Maybe you remember that Gibson's key concept it that of an affordance: what environment affords to YOU to do.

Affordances are related to the bodily capabilities and dimensions of an individual
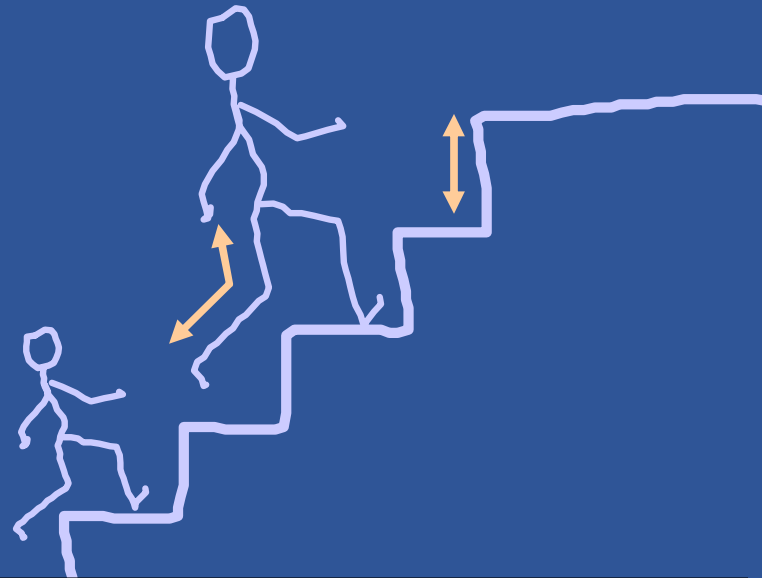
Warren (1995) developed a formula for optimal step height:

π = R/L

where R = the hight of a step
L = the length of the leg of the person

π_0 = optimal relationship, that fits to the majority of people

What we perceive as an affordance depends on our bodily capabilities and dimensions. Let's take a simple example: does the staircase afford climbing? Well, it depends on our leg length and the heigh of the steps for sure. So, for a normal adults, standard steps afford stepping up easily but for a small child not so easily. Warren even developed an equation where he defined the optimal step height. I am afraid that as the standard person here was taken an adult without further questions....

Urban affordances

(11-1) (10-8) (6-6) (3-7) (3-8)

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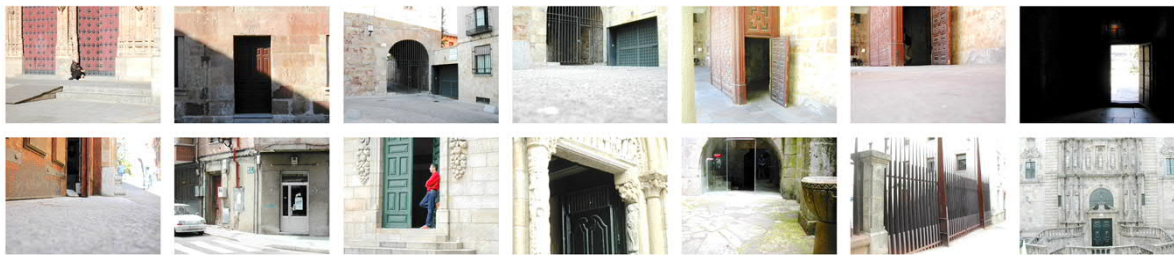
Richard Coyne (2021) Reflections on Technology, Media & Culture. https://richardcoyne.com/2021/10/30/urban-affordances/

One way to approach the functional quality of urban environment would be to evaluate them from the perspectives of affordances. In one study Racher Kaplan and her colleagues asked people to rate various photographs and rate for example which settings afforded or supported social interaction and which simply sitting. The settings in these picture afforded both. In the latter set of pictures there are entrances. We can also evaluate them so that we rate how easily various entrances afford entering the house. Not all these entrances afford entrance to all possible users for sure!

Jan Gehl: Public life in cities

Necessary Activities

Optional Activities

Social Activities
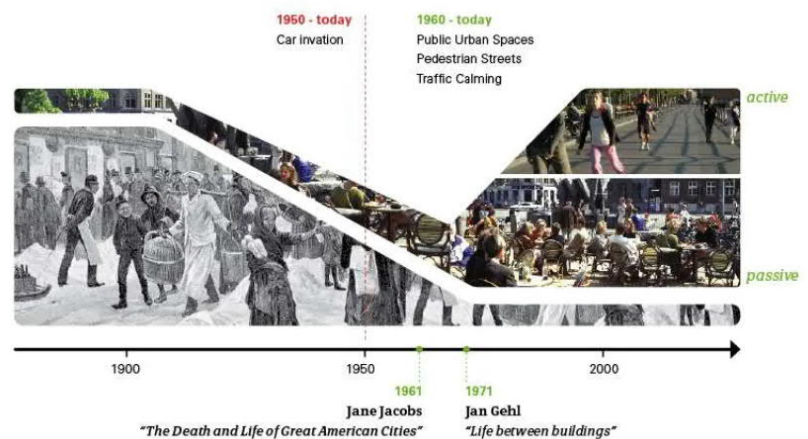
Gehl, J. & Gemzøe, L. (1996) Public Spaces, Public Life. Copenhagen: The Royal Danish Academy of Fine Arts Architectural press.

Jan Gehl, whose work is surely very familiar to most of you, has classified urban activities to three different types: necessary, optional and social activities. According to him environmental quality does not affect vey much to the necessary activities that we have to carry out regardless of the quality of settings: we visit grocery store and walk our child daily to the day care center even if the paths are not attractive. Optional activities occur only when we want to carry out these activities and when the place and time are favorable. For example sitting outside in a nice place when sun is shining. In a good environment, optional activities occur with high frequency. "Social activities" emerge when people meet in a place and socialize. These activities are often spontaneous and can occur in a wide variety of settings. Jan Gehl says that social can evolve from activities in the other two categories as people in the same space meet, if only briefly.

According to Jan Gehl during last century fundamental changes have taken place in the use of public spaces – not least because of car invasion.

100 years ago nearly all people were engaged in some type of necessary activities. People were in urban space because they had to be, regardless of whether quality is provided or not. Use of public spaces was an important part of daily life, and the spaces were filled with all kinds of activities. Today much fewer people use public spaces out of necessity. Some are walking to and from work, but many others have alternative options for transport, for reaching services and for shopping. The overall picture of the present-day public space scenes reveal that most of the people are there not because they have to be, but because they want to be. The optional character of most activities places very high demands on the quality offered by public spaces.

Functional quality
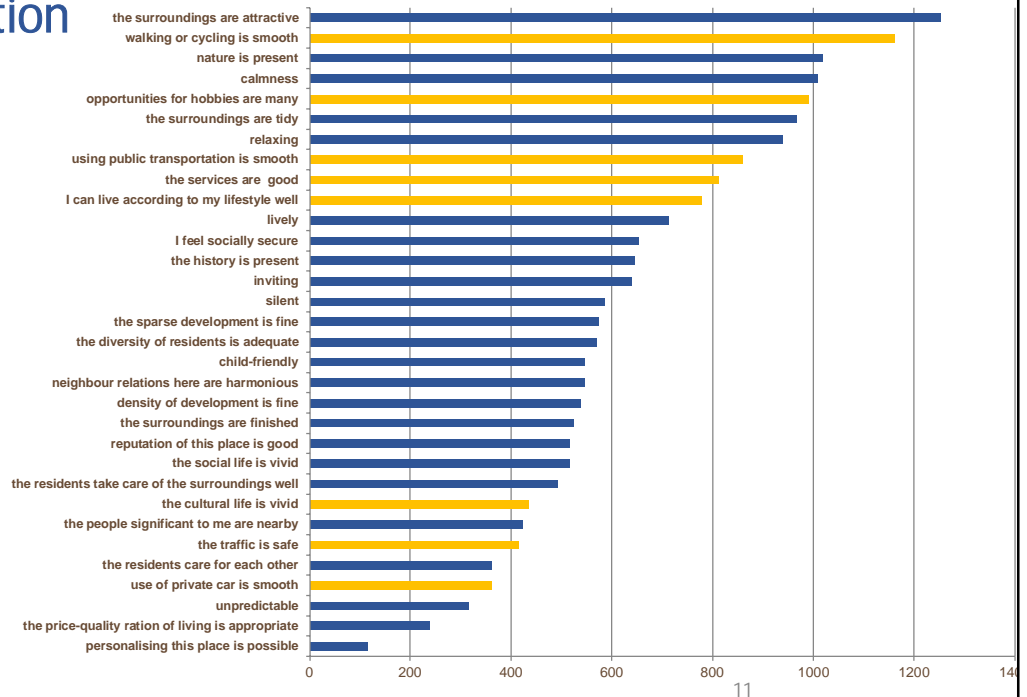
NOT guaranteed by
functionalistic planning!

Rather by:
• Mixed structure
• Accessibility
• Close by services
• Polymorfic space
• Etc.

So, let's go back to the functional quality of urban spaces. Sorry to tell you but I am pretty convinced that functionalistic city planning did NOT manage to guarantee high quality functional environments. At least not from the perspective of people. The separation of various urban functions, that was in the core of functionalism, meant increasing distances to daily services and the need to use motorized transport. In my view, totally different urban planning ideals, like mixed structure, accessibility with active transport modes and close-by services promote functional quality. Perhaps also the existence of so called polymorphic spaces. This means spaces that can be used to many different functions, not only for one single purpose. For example so called close-by sport areas that have been built in Finland: they are not meant only for one single sport but support many different types of sports and games – also the use as picnic fields.

Operationalization of functional quality
(Urban Happiness –study)

Chart showing ratings (0–1400) for functional quality factors:
- the surroundings are attractive
- walking or cycling is smooth
- nature is present
- calmness
- opportunities for hobbies are many
- the surroundings are tidy
- relaxing
- using public transportation is smooth
- the services are good
- I can live according to my lifestyle well
- lively
- I feel socially secure
- the history is present
- inviting
- silent
- the sparse development is fine
- the diversity of residents is adequate
- child-friendly
- neighbour relations here are harmonious
- density of development is fine
- the surroundings are finished
- reputation of this place is good
- the social life is vivid
- the residents take care of the surroundings well
- the cultural life is vivid
- the people significant to me are nearby
- the traffic is safe
- the residents care for each other
- use of private car is smooth
- unpredictable
- the price-quality ration of living is appropriate
- personalising this place is possible

In Unban Happiness study here in Helsinki metropolitan area we operationalized functional quality in a certain way: as smoot possibility for walking, cycling and public transport use as easily accessible services etc. As you can see, functional quality factors were among the most important for people here in Helsinki. We will come back to this study later in this course.

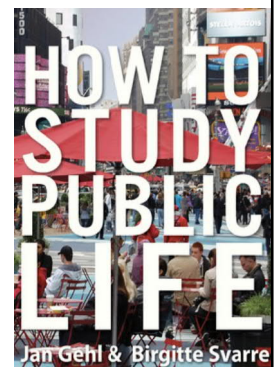# Evaluation of functional quality

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 STUDY PUBLIC LIFE

Jan Gehl & Birgitte Svarre

By now you are probably not surprised if I say that I consider it very important to evaluate functional quality of settings after they have been built and after they have been used for some time. In building level this kind of evaluation has rather established traditions. So called POE post occupancy evaluation methods have been developed. In the city or neighbourhood level this kind of ex post evaluation is unfortunately not done as often at least in Finland. An exception is surely Jan Gehl who has spoken about the need of systematic monitoring and evaluation for decades. Also the work of my team has tried to contribute here.

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

Steg,L. van den Berg, A. & de Groot, J.I.M. (2012) Environmental Psychology : An Introduction. John Wiley & sons.
NOTE: available in Aalto Primo!

Let me finally come back to the basic question that I raised
in the beginning one again and NOW from the perspective
of pro-environment behavior. The question how to change
our behavior is naturally most burning here. The same
basic strategies, one focusing on changing the inner views
of people and the other focusing on structural changes
have been discussed there. I have to say that I was quite
disappointed to notice that in the recent Handbook of
Environmental Psychology by Linda Steg and colleagues
(this book you can find in our reading list), they almost
entirely only focused on the first type of strategies,
informational strategies.

What really works?

Education	Tailored information & feedback
Information campaigns	Social influence
Financial motivation	Nudging

Abrahamse, W. (2020) Encouraging pro-environment behavior: what works and what doesn't. BECC webinar https://www.youtube.com/watch?v=_jirhj6mevgw

Although this is not my core field of expertise (some of you might know better), my understanding is that the evidence saying what really works does not support to sole focus on informational strategies. Instead of educational or information campaigns, nudging seems to work better. When it comes to information, only individually tailored information and feedback seems to work better. Also social influence seem to be a promising strategy.

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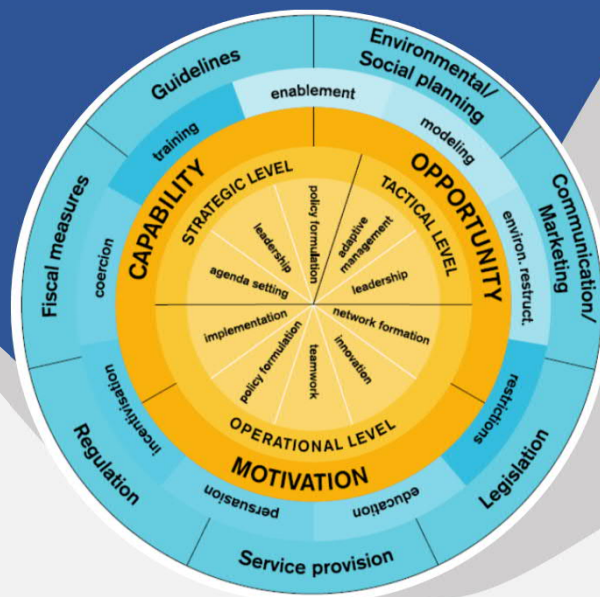
Hendriks, A. -., Jansen, M. W. J., Gubbels, J. S., De Vries, N. K., Paulussen, T., & Kremers, S. P. J. (2013). Proposing a conceptual framework for integrated local public health policy, applied to childhood obesity - the behavior change ball. Implementation Science, 8(1)

Other fields besides psychology have developed great ways to modify behavior. I take as an example the so called behavior change wheel developed in the field of public health. This model consists of three different layers. The inner core of a wheel, the orange part of the circle, focuses on individual's behavior. The next circle refers to the intervention functions, like education or the modification of the environment. The final part of the model, the outer ring of the wheel refers to the policy categories like legislation. People who have developed this model have highlighted that the existing systems can really influence or hinder any attempts to promote behavior change. Therefore, they have located to wheel, or actually ball to a mountanous landscape. So, my takeaway from this is that when we are dealing with some of the biggest challenges of our time, when learning to function more ecologically, it is not enough to have psychological perspectives. We need multilevel understanding and multisectoral collaboration. I will leave this to here now.