Human Scale in Transport Systems

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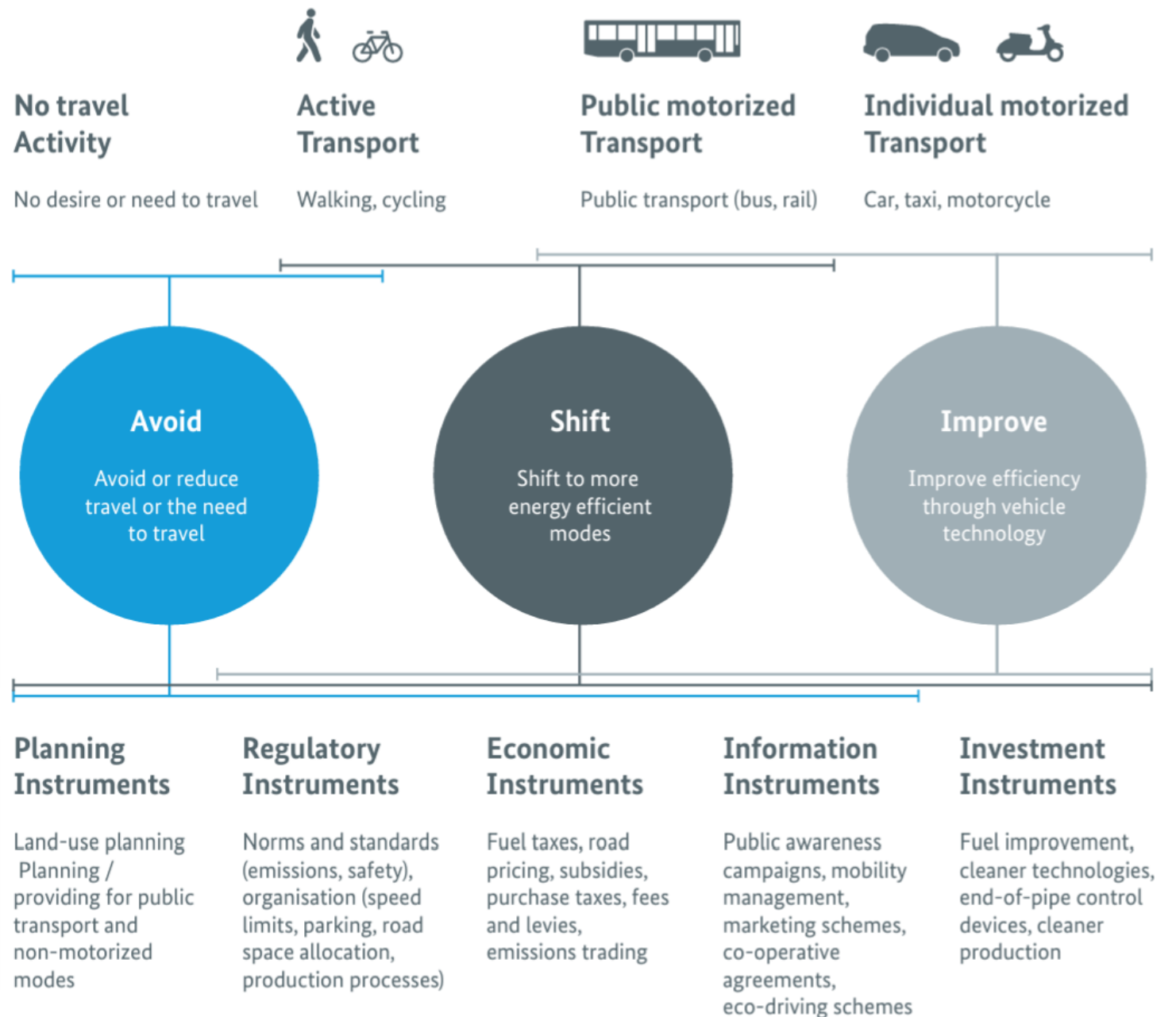
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Outline

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1. The need to understand human behavior

Actions in order of priority:
1. Avoid
2. Shift
3. Improve

No travel Activity

No desire or need to travel

Active Transport

Walking, cycling

Public motorized Transport

Public transport (bus, rail)

Individual motorized Transport

Car, taxi, motorcycle

Avoid

Avoid or reduce travel or the need to travel

Shift

Shift to more energy efficient modes

Improve

Improve efficiency through vehicle technology

Planning Instruments

Land-use planning Planning / providing for public transport and non-motorized modes

Regulatory Instruments

Norms and standards (emissions, safety), organisation (speed limits, parking, road space allocation, production processes)

Economic Instruments

Fuel taxes, road pricing, subsidies, purchase taxes, fees and levies, emissions trading

Information Instruments

Public awareness campaigns, mobility management, marketing schemes, co-operative agreements, eco-driving schemes

Investment Instruments

Fuel improvement, cleaner technologies, end-of-pipe control devices, cleaner production

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https://www.transformative-mobility.org/

First-order Human-related Impacts

- **Direct and indirect safety**

- **Percent of family budget**

- **Daily time spent travelling**

- **Available mode combinations**

- **Location accessibility**

- **Particle pollution exposure**

- **Sedentary time duration**

- **Overall social isolation**

- **Negative discrimination**

(Roukouni & Correia, 2020)
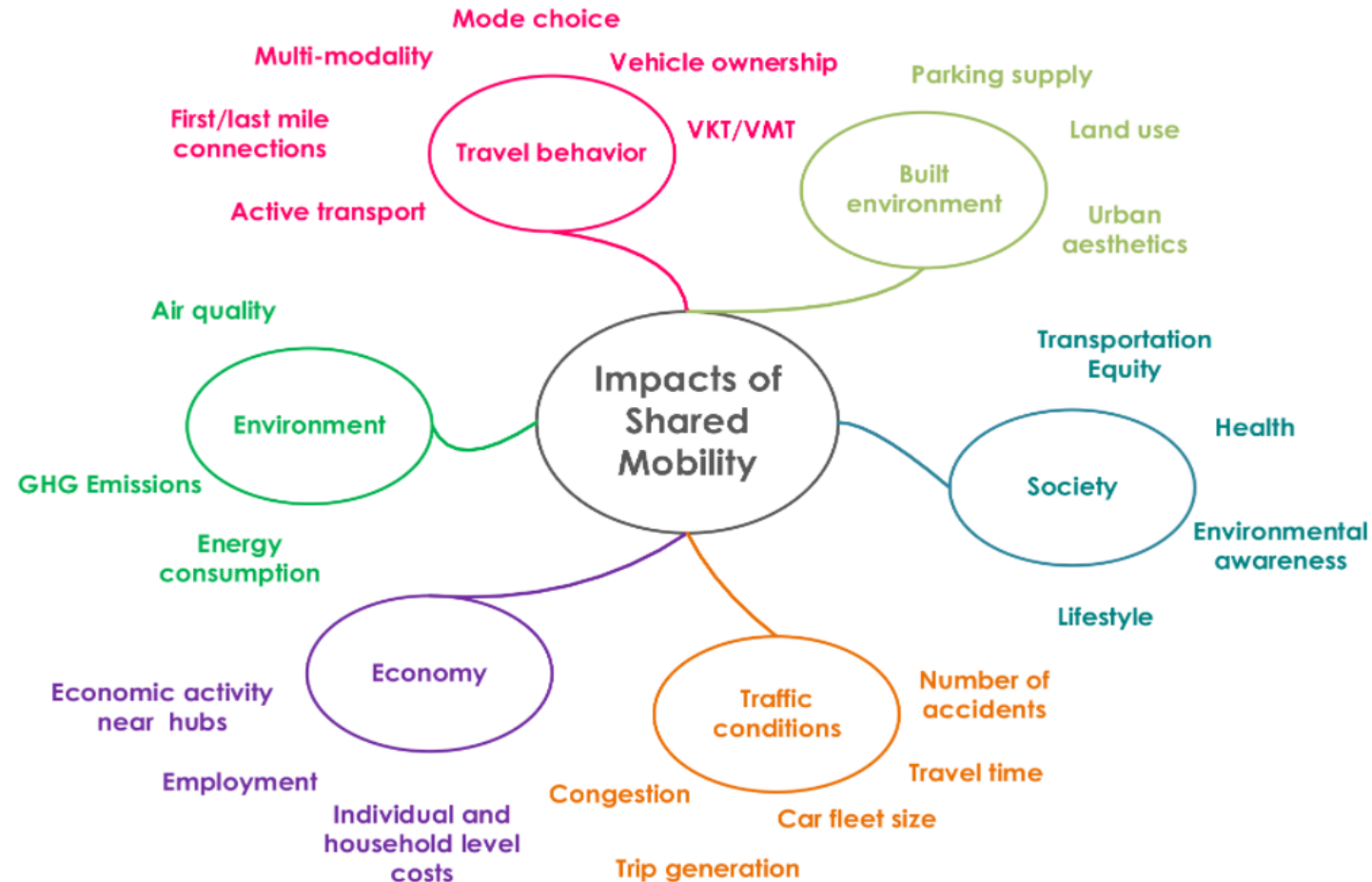
Transformation of Transport System relies on changes in human behaviors and lifestyles

If we are to enable and steer **Change,** we should understand what **Mobility Behavior** is

2. The conventional perspective on behavior change

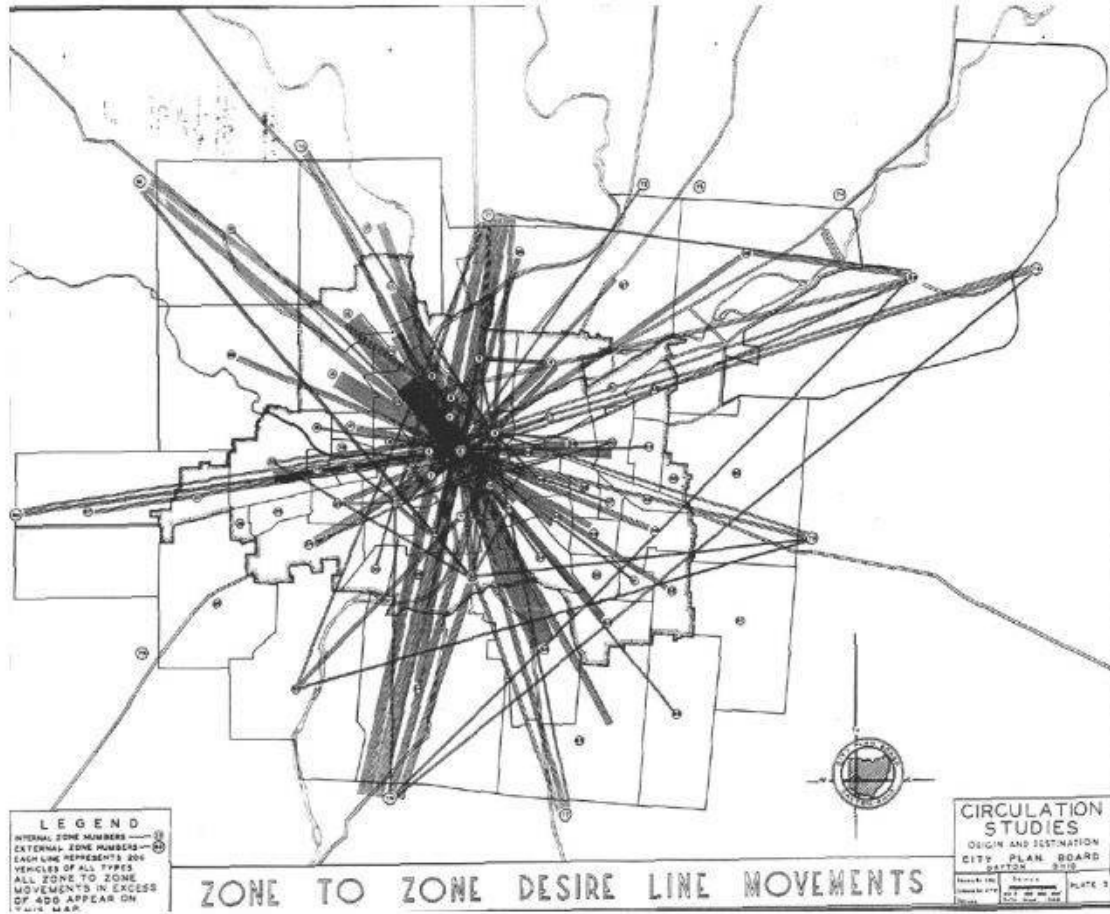# Conventional perspective of Mobility Behavior focuses on:
1. Homo economicus
2. Aggregation

Homo Economicus (in Brief)

- **Capable of perfectly discriminating between alternatives**

- **Capable of calculating total costs and benefits of those multiple alternatives**

- **Capable of choosing the alternative that maximizes the utility**

- **Has permanent consistency of choice**

Aggregation of Travel Patterns
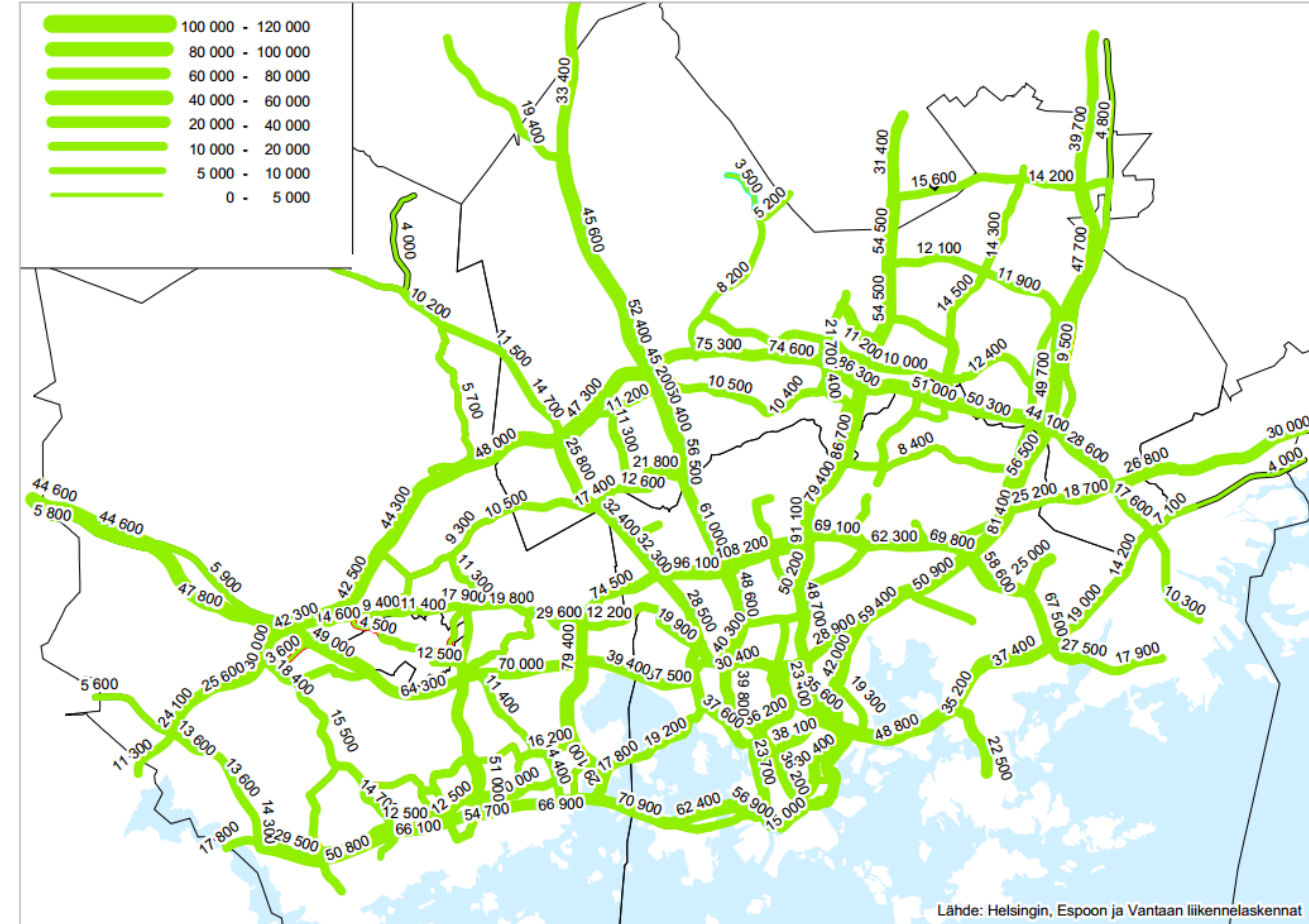
Conventional perspective on Mobility Behavior
can narrowly describe some aspects of actual behavior and
is ineffective in identifying proper mechanisms for change

# 3. The 21st century perspective on human mobility behavior

In reality – Multidimensional and Habitual Homo Mobilis

- We are not always calculating narrowly rational beings

- We do not always act in our own best interest

- Our behavior is often a function of attitudes and intentions, as well as situational constraints

- Our behavior is often habitual and based on mental shortcuts and routines

- Our attitudes and intentions are shaped by normative social pressures and affective factors, situated in time-space
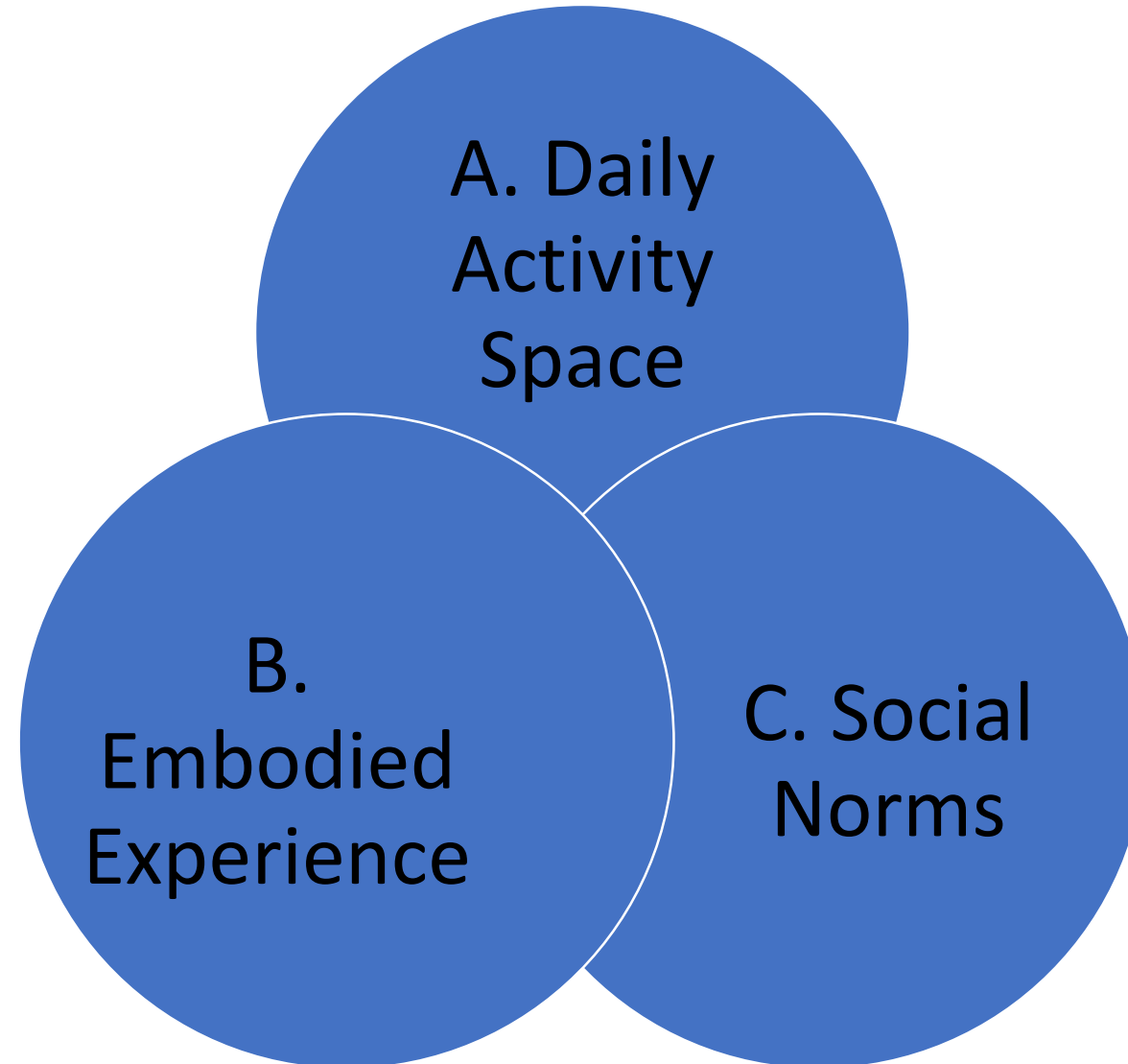
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An Example of a Heuristic Bias:
Loss Aversion

- **People value gains and losses differently**

- **The feeling of pain due to loss is at least double than the similar amount of gain**

- *Satisfycing ≈ simplify decisions to a manageable level + use simple heuristics and rules of thumb + as long as it works, keep on using, unless you reach a critical failure*


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(Kahneman, Knetsch & Thaler, 1991)
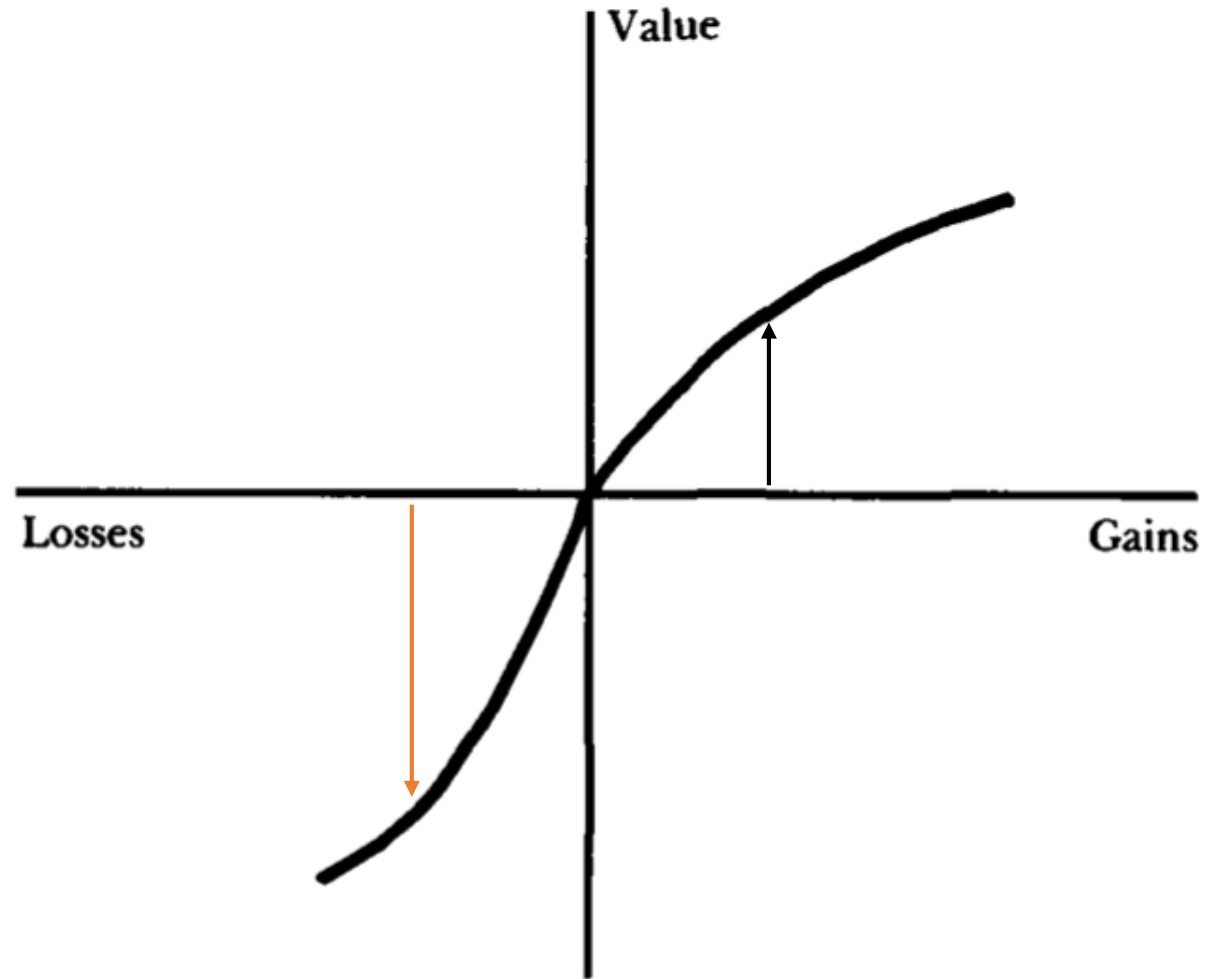
3 Aspects of Human Scale

A. Daily Activity Space

B. Embodied Experience

C. Social Norms

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A. Daily Activity Space: Beyond Trip Chains

- **Interdependence of travelling and other daily activities**

- **Relative stability over life periods**

- **Distance decay and directional bias**

- **Changes at (un)planned transitional points in life**

- **Windows of opportunity for change when habits can be (temporarily) broken**

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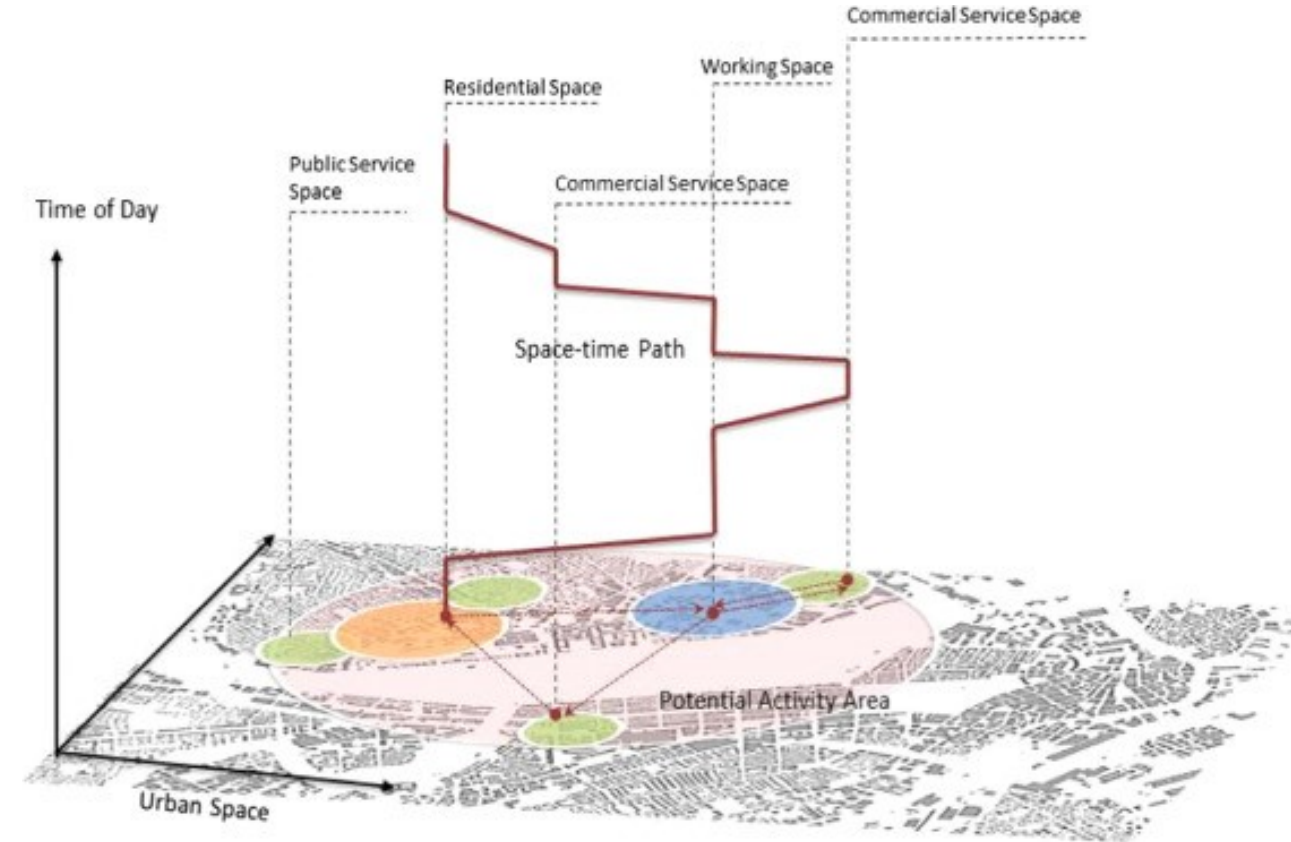
B. Embodied Experiences: Affect and Cognition

- **A relation between challenges for body-mind & competences (e.g., anxiety, relaxation, boredom)**

- **First (negative) impressions can be crucial for future attitudes**

- **Experiencing (positively) new behavior changes attitude and leads to stabilization of that new behavior**

Two dimensions	Three dimensions	Negative	-3	-2	-1	0	1	2	3	Positive
Affective dimension	Positive activation – Negative deactivation	Bored	O	O	O	O	O	O	O	Enthusiastic
		Fed up	O	O	O	O	O	O	O	Engaged
		Tired	O	O	O	O	O	O	O	Alert
	Positive deactivation – Negative activation	Stressed	O	O	O	O	O	O	O	Calm
		Worried	O	O	O	O	O	O	O	Confident
		Hurried	O	O	O	O	O	O	O	Relaxed
Cognitive dimension	Cognitive evaluation	Travel was worst I can think of	O	O	O	O	O	O	O	Travel was best I can think of
		Travel was low standard	O	O	O	O	O	O	O	Travel was high standard
		Travel did not work out well	O	O	O	O	O	O	O	Travel worked out well

(De Vos et al., 2015)

C. Social Norms: Relational Beings

- Socio-cultural processes and values affect formation of "appropriate" habits (e.g., equality, proximity to nature, children's independent mobility)

- Social sanctions and copying what "normal/significant" others are doing "rightly" (e.g., parents, employer, best friend, movie character, Instragram influencer, etc.)

- Meanings are actively constructed by infrastructure, policy, and media but also other policy domains (e.g., health and social policy)


NO EXIT   © Andy Singer

LOOK AT THAT POOR WOMAN WALKING! HER CAR MUST HAVE BROKEN DOWN. MAYBE WE SHOULD OFFER HER A RIDE.

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In Conclusion

IF we are to live within
the safe and just operating space
for humanity
and other life

1. We need **to understand** the multidimensional Human Scale in addition to Aggregate Scale

2. We need **to use existing** participatory, design and social science methods for understanding human behavior change

3. We need **to envision** lifestyles and important values as part of the transport system
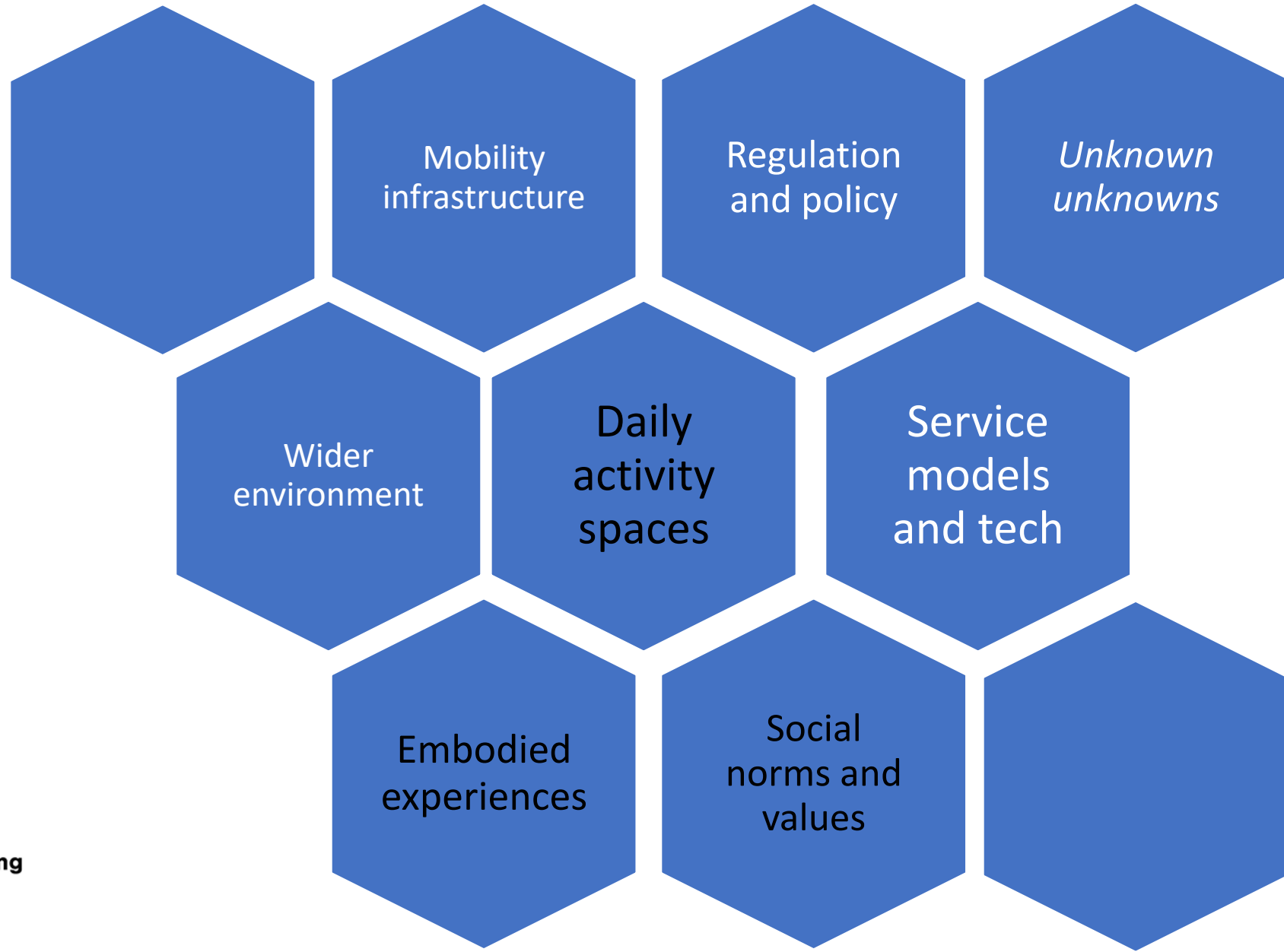
Thank you!

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