Introduction to WG1 – Brighton 2012

- **Understanding soundscape :**
  - Theoretical work inspired by fundamental knowledge on psychophysics, psychology, neurobiology, …
  - COST TD0804 = bringing together ongoing initiatives and various views

- **Better understanding leads to better design**

Drivers for soundscape research

The living environment should provide

- Personal control of the sonic environment at home

- A space for (psychological) restoration

- Enjoyable soft travel links between functions

Drivers for soundscape research

- **Personal control** of the sonic environment at home
    - Classical noise reduction of sound intruding in the personal living environment
    - Some city sound to bring in the vibrancy of big city life BUT at the discretion of the dweller
- A space for (psychological) restoration
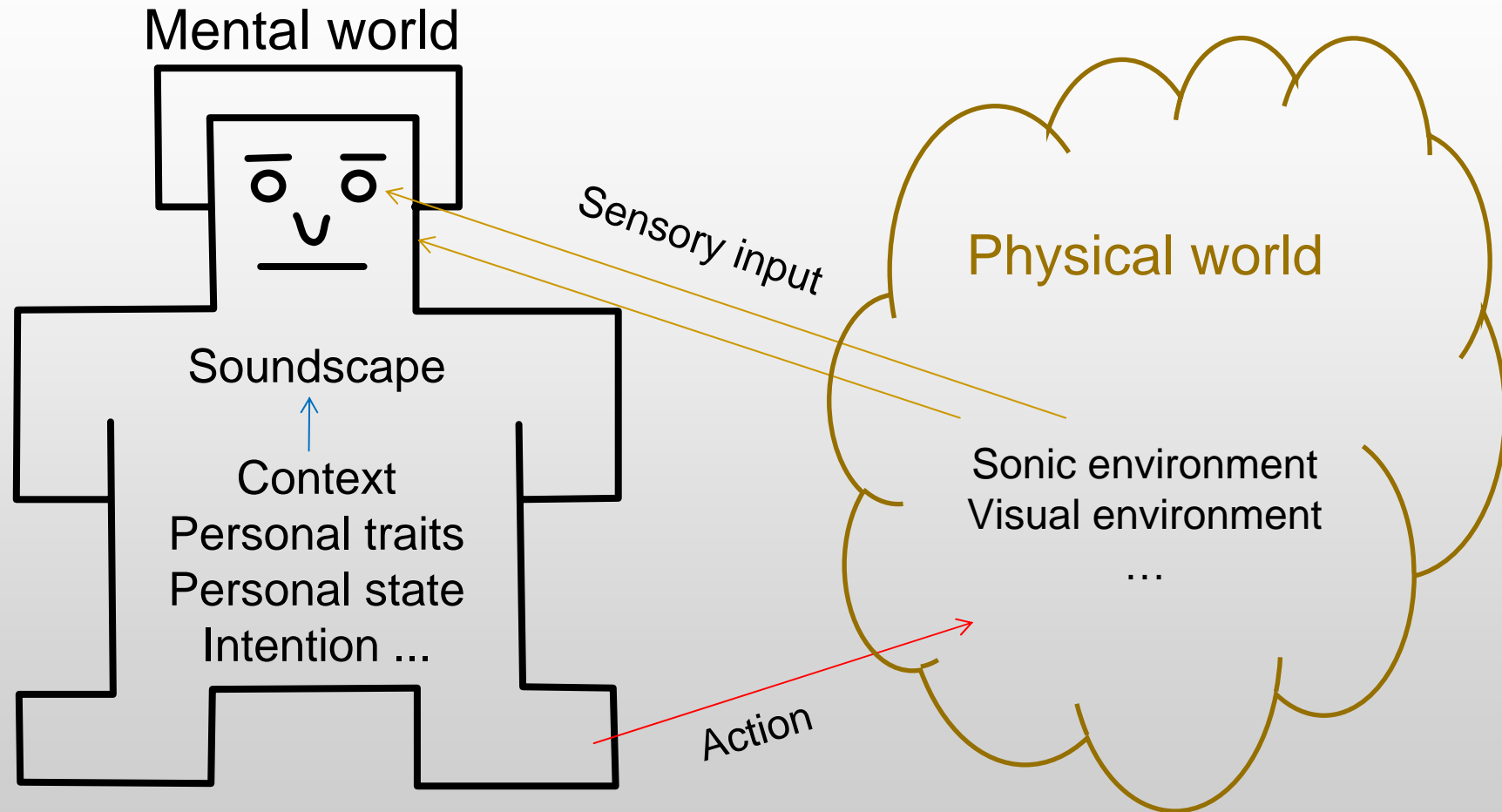- Enjoyable soft travel links between functions

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Drivers for soundscape research

- Personal control of the sonic environment at home

- A space for (psychological) restoration
  - Natural, historical, …
  - Optimized based on restoration theory, for example providing opportunities for non-focused attention triggered by multisensory experience

- Enjoyable soft travel links between functions

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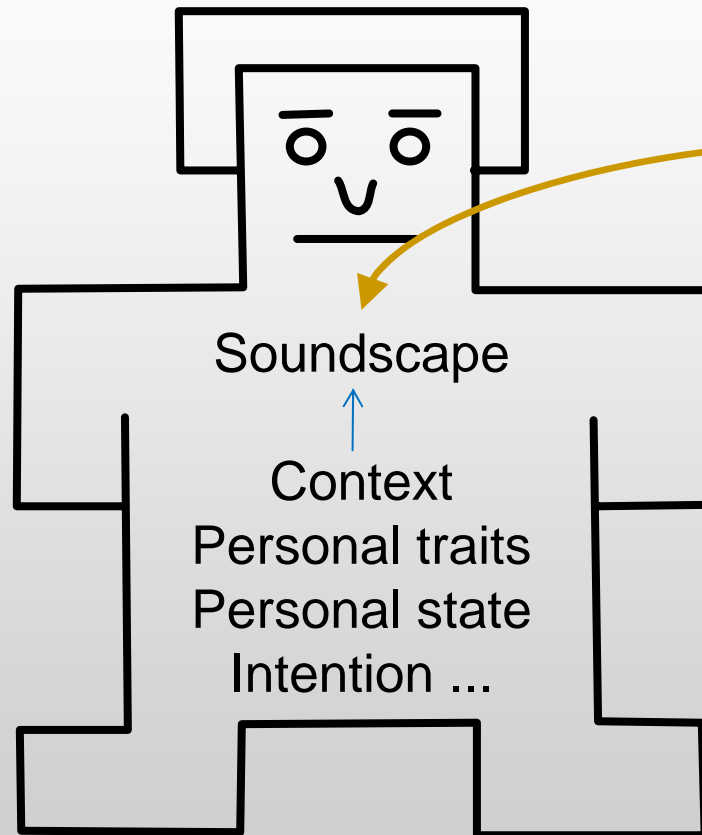EUROPEAN COOPERATION
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Drivers for soundscape research

- Personal control of the sonic environment at home

- A space for (psychological) restoration

- Enjoyable soft travel links between functions
  - Promote the use of bicycle and on foot for short distance travel
  - Restoration "on the move"

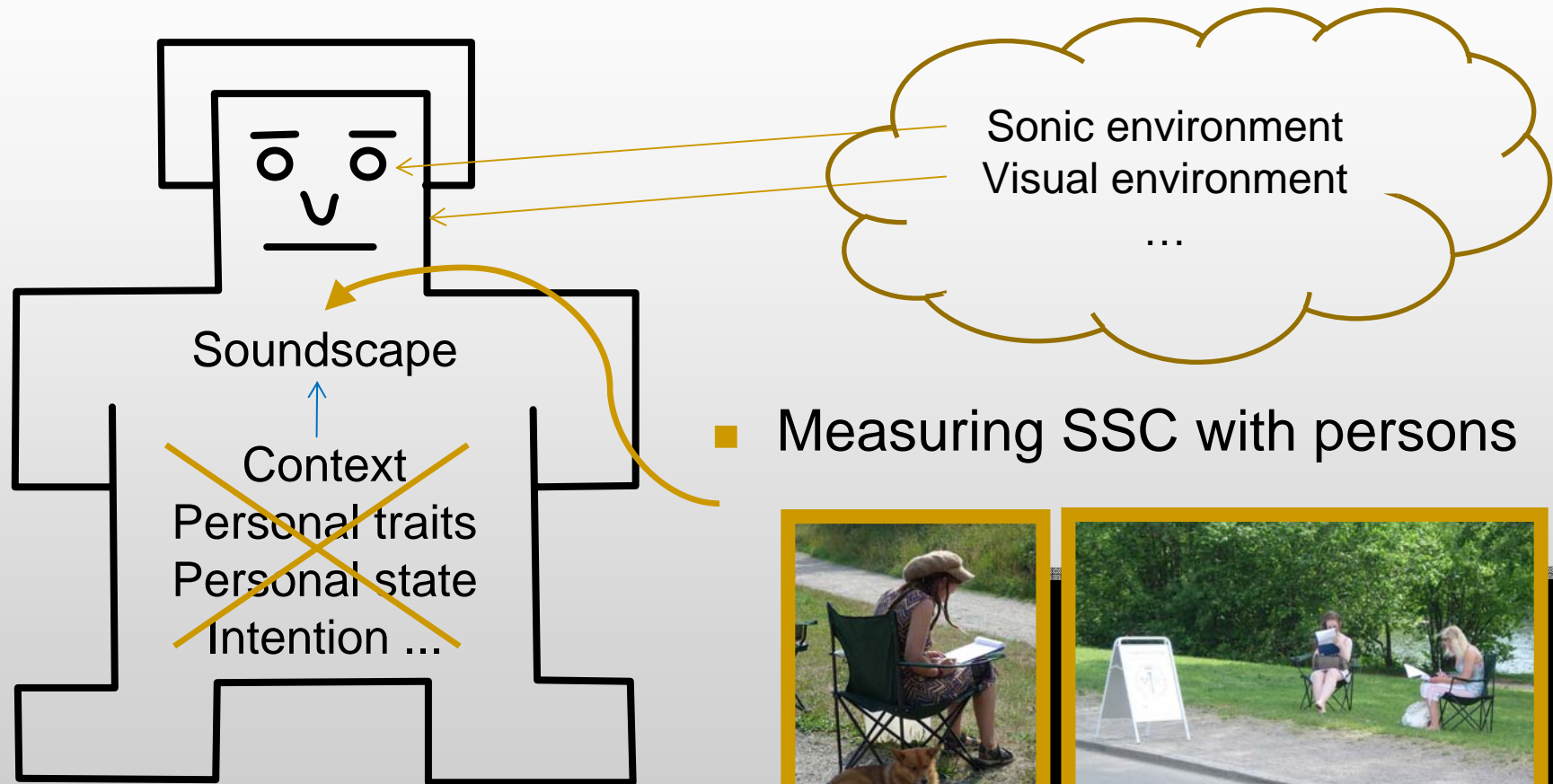# Soundscape as an object in the mental world

Mental world

Soundscape

Context
Personal traits
Personal state
Intention ...

Sensory input

Physical world

Sonic environment
Visual environment
…

Action

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How to "measure" soundscape?

Soundscape

Context
Personal traits
Personal state
Intention ...

- **Measuring how SSC affects persons**
  - in depth
  - holistic

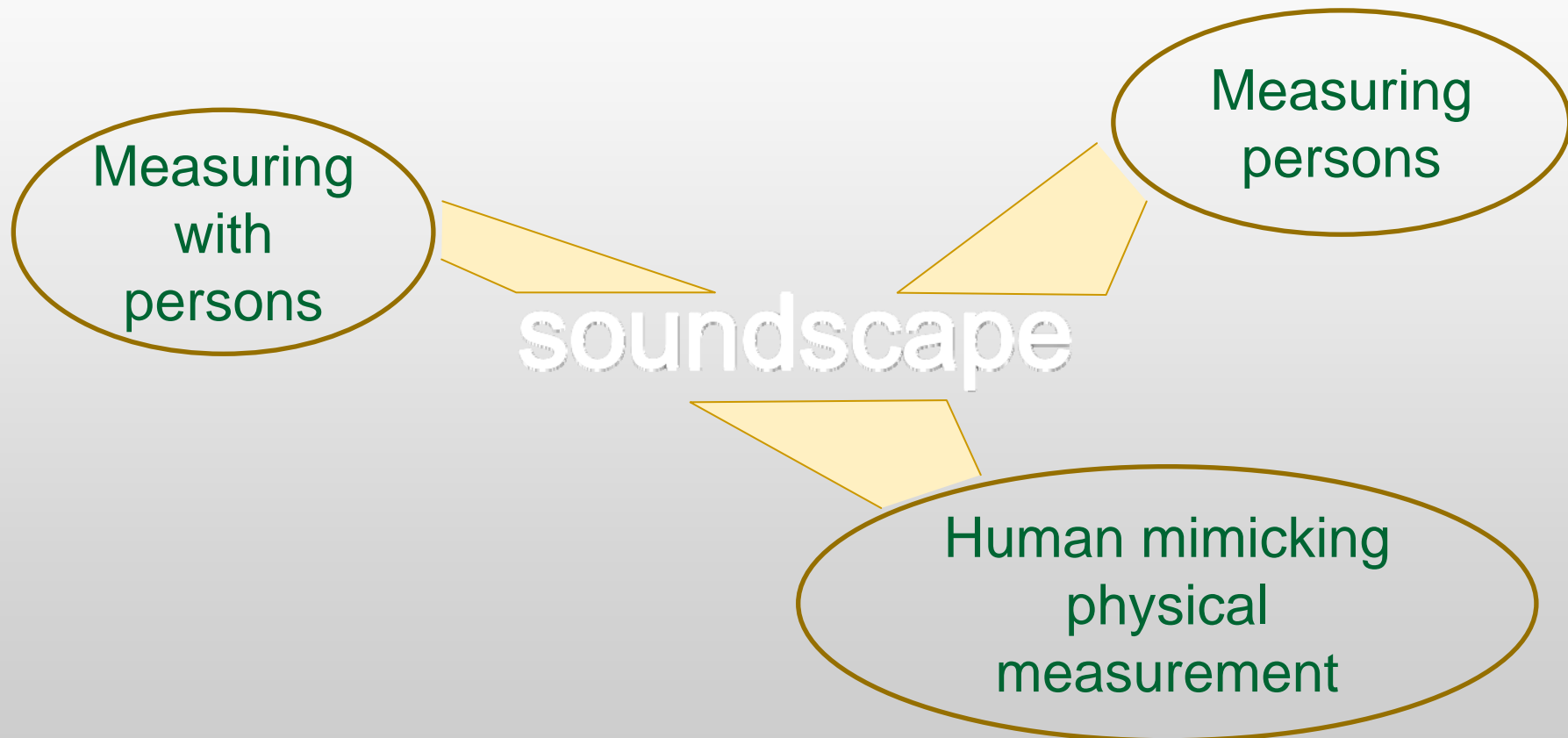**Soundscape of European Cities and Landscapes**

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How to "measure" soundscape?

Sonic environment
Visual environment
…

Soundscape

Context
Personal traits
Personal state
Intention ...

- Measuring SSC with persons

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How to "measure" soundscape?

Sonic environment
Visual environment
…

Soundscape

Context
Personal traits
Personal state
Intention ...

- Measuring in a human mimicking way

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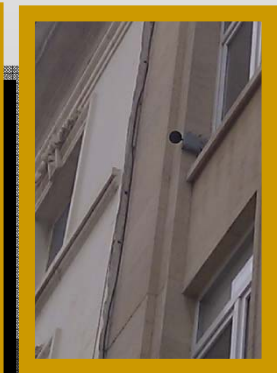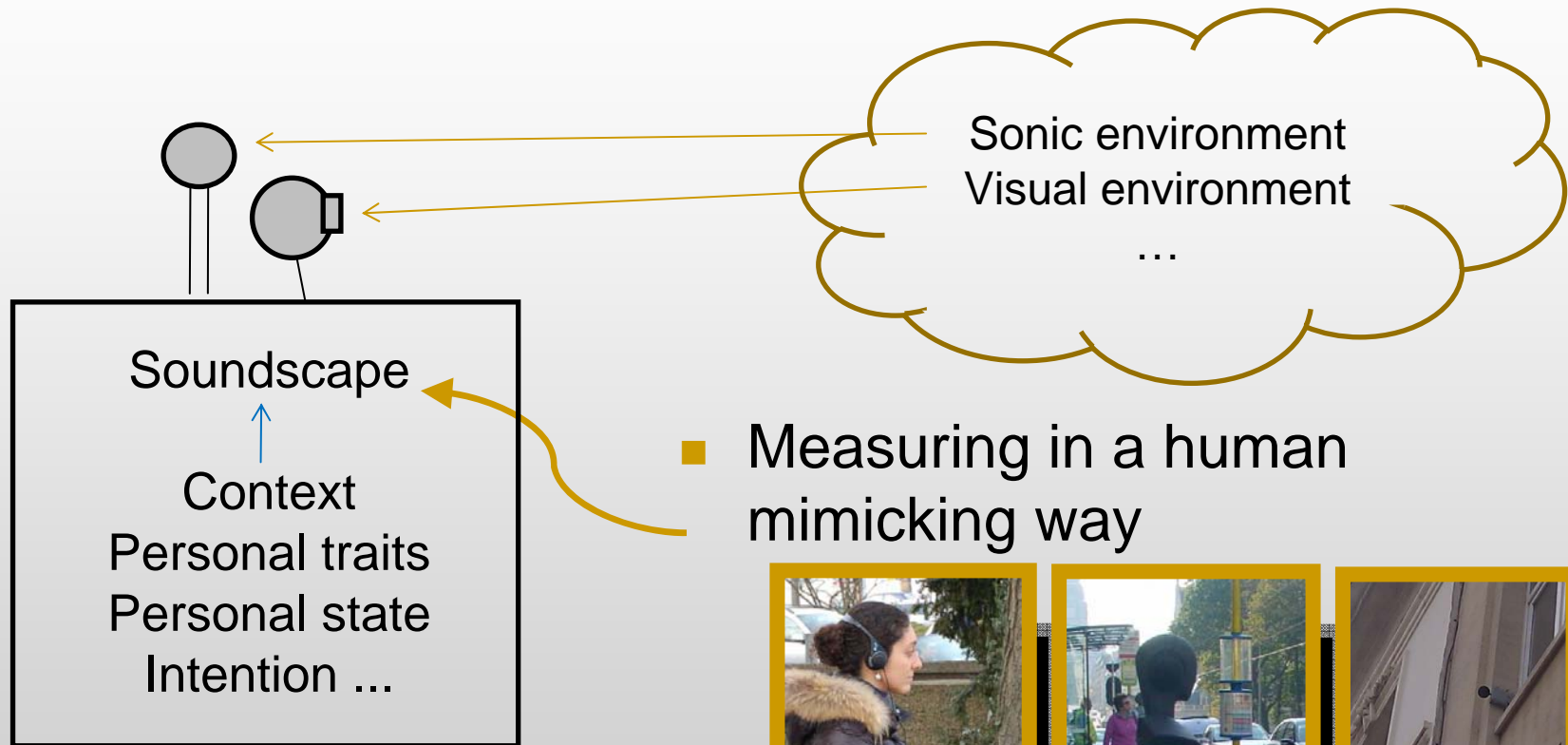
Hence: methodological triangulation

- Multiple ways of looking at the same object

Measuring with persons

Measuring persons

soundscape

Human mimicking physical measurement

Understanding how soundscape emerges

- A man/woman enters a place … what happens?
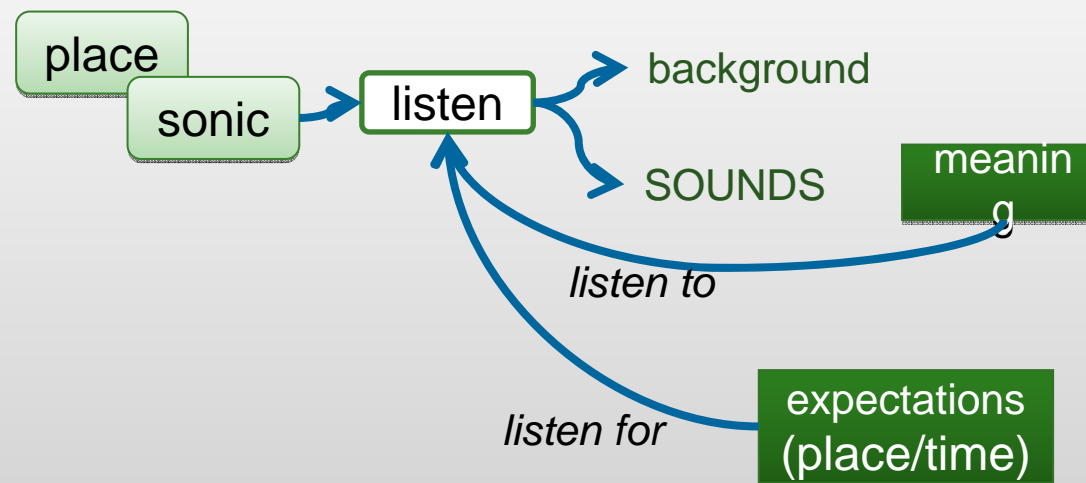
Understanding how soundscape emerges

- ## A man/woman enters a place … what happens?
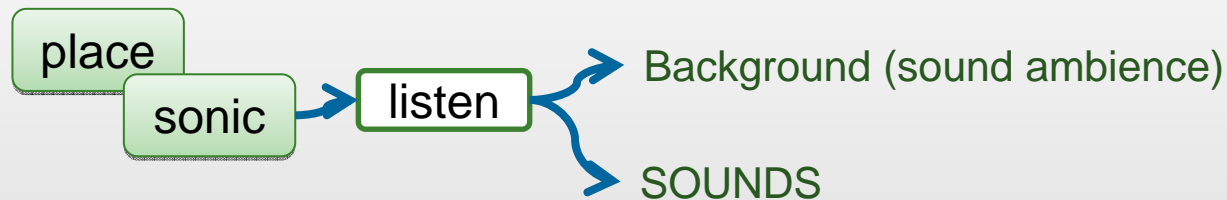
- ## Listening, a complex process
  - Foregrounding, attentive / analytic / descriptive → the SOUNDS (close = easier to detect sounds)
  - Backgrounding, holistic listening → overall sound climate
- ## Attention driven:
  - Listening in readiness, listening in search, story listening

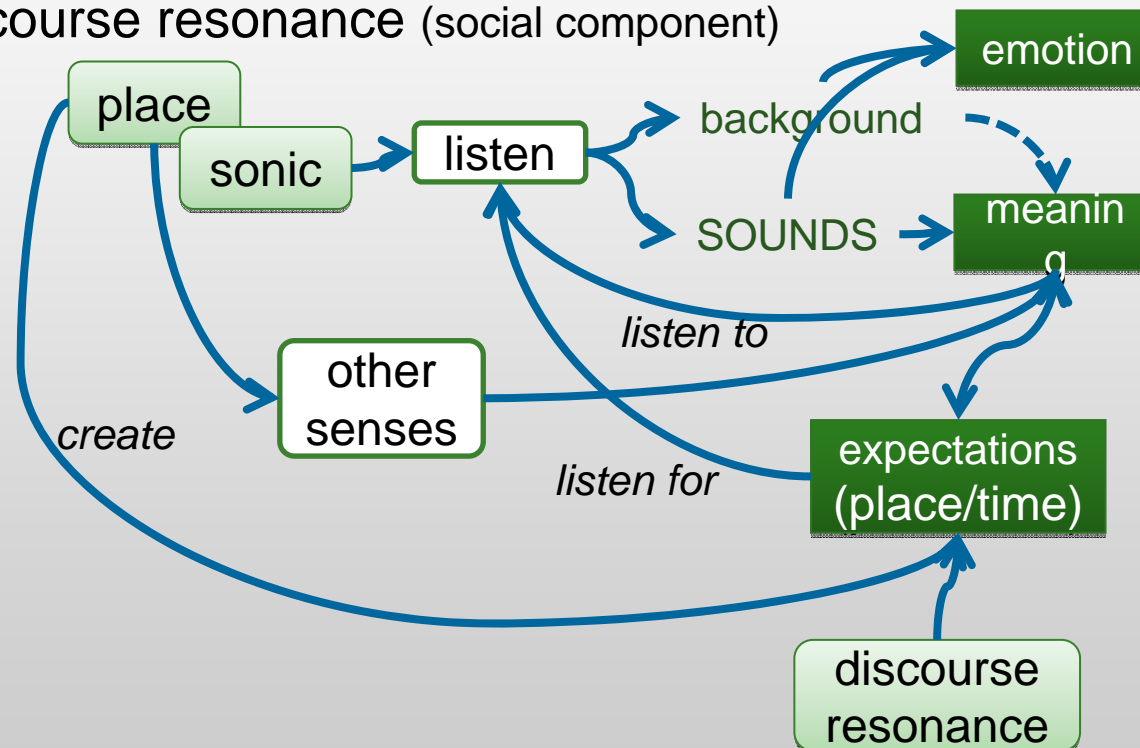# Understanding how soundscape emerges

- A man/woman enters a place … what happens?

place → sonic → listen → background / SOUNDS

meaning

listen to

listen for ← expectations (place/time)

- Expectations and meaning determine listening mode

Understanding how soundscape emerges

- Sounds in a context (other observations and expectations) have meaning and trigger emotions
- Expectations are triggered by the place, influenced by meaning and discourse resonance (social component)

Understanding how soundscape emerges

- Appraisal includes matching expectations and valuating against a frame of reference
- Value is what soundscape designer is after
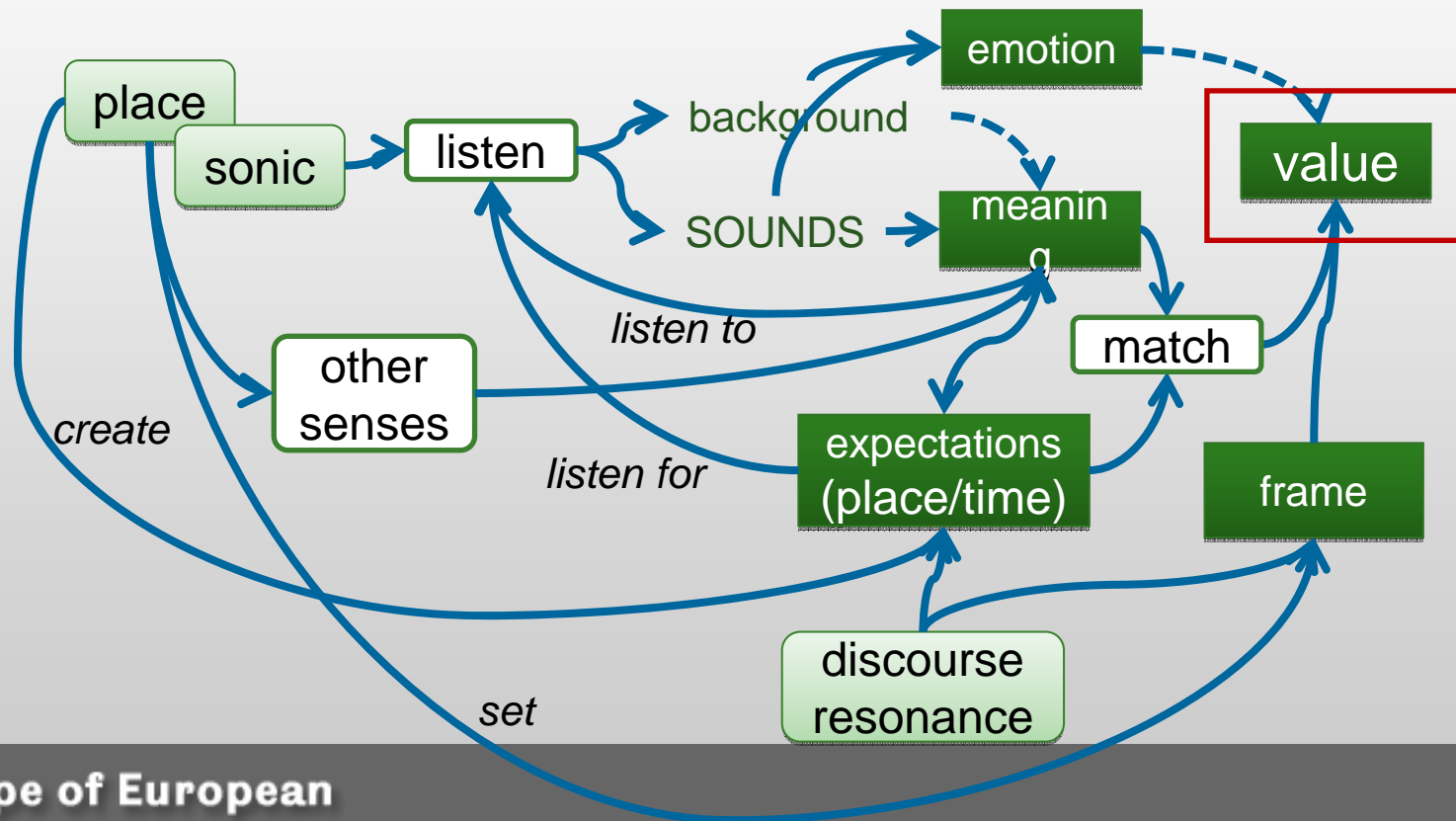
Consequences for design

- **Creating value for intended users**
  - Know the expectations (at different times of the day)
    → consult the intended users
    → create clear vision on intended use of the place
  - Be aware of the frame of reference
    → needs are not the same everywhere
    and for everyone
  - Follow discourse resonance
    but be aware that media attention is volatile
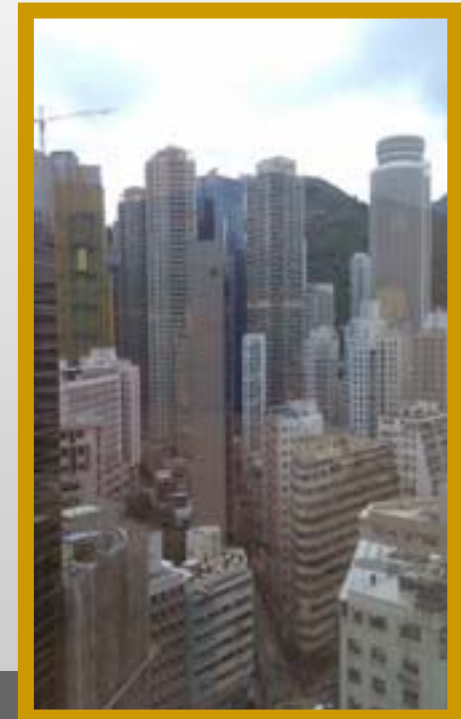
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Consequences for design

- Creating value for intended users
- Creating realistic expectations
  - Expectations created by visual setting, knowledge about the place, signs, …
  - Hiding obvious disturbance from vision might be bad practice

This is a quiet area

Consequences for design

- Creating value for intended users
- Creating realistic expectations
- Directing attention and listening mode
  - Sounds with high saliency → attract attention
  - Sounds with meaning → retain attention
  → users listen to what the designer wants them to listen to

Old building in Brugge seen through the Toyo Ito pavilion (photo Rolf Thum)

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Consequences for design

- Creating value for intended users
- Creating realistic expectations
- Directing attention and listening mode
- Create supportive environment for your composition
  - Backgrounded sound depletes resources and can influence emotion, meaning, and valuation
  - Other senses: vision, smell, … can help focus attention or distract from unwanted sound
  - Create a supportive discourse by communication

WG1: work in progress

- **Thank you for your attention**

- **Watch out for**
  - JASA special issue
  - WG1 publications
  - COST edited book

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Example wind turbine

- **Some sounds are less annoying if origin is unknown**
  - E.g. wind turbine noise is often found to be more annoying, but in experiment below with naïve listeners this does not show

	Herkend (absoluut aantal)	Herkend (%)	Aanwezig
Wegverkeer	48	96	✓
Vliegtuiggeluid	24	48	✗
Windturbine	22	44	✓
Machinegeluid	19	38	-
Zee geruis	14	28	✗
Geruis van bladeren	11	22	✗
Treinverkeer	10	20	✗
Geluid van fontein of vallend water	6	12	✗
Pratende mensen	3	6	✗
Watertransportgeluid	3	6	✗

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