C-MUS
Centre for Mobilities & Urban Studies

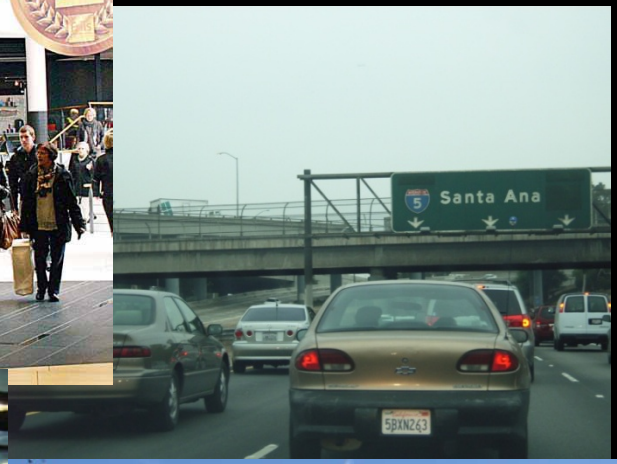
Mobilities Design – towards a new 'material turn'

Presentation at the
'Mobilities and Design Workshop'
Centre for Mobilities Research (CeMore)
Lancaster, UK
April 29-30
2014

Professor
Ole B. Jensen

AALBORG UNIVERSITY
DENMARK

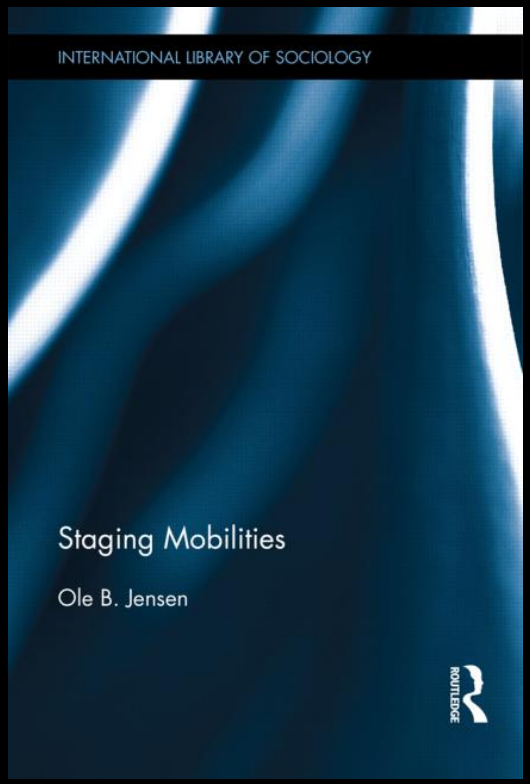
I. We are embedded in multiple mobile ‘stagings’ …



Future mobility systems needs to become

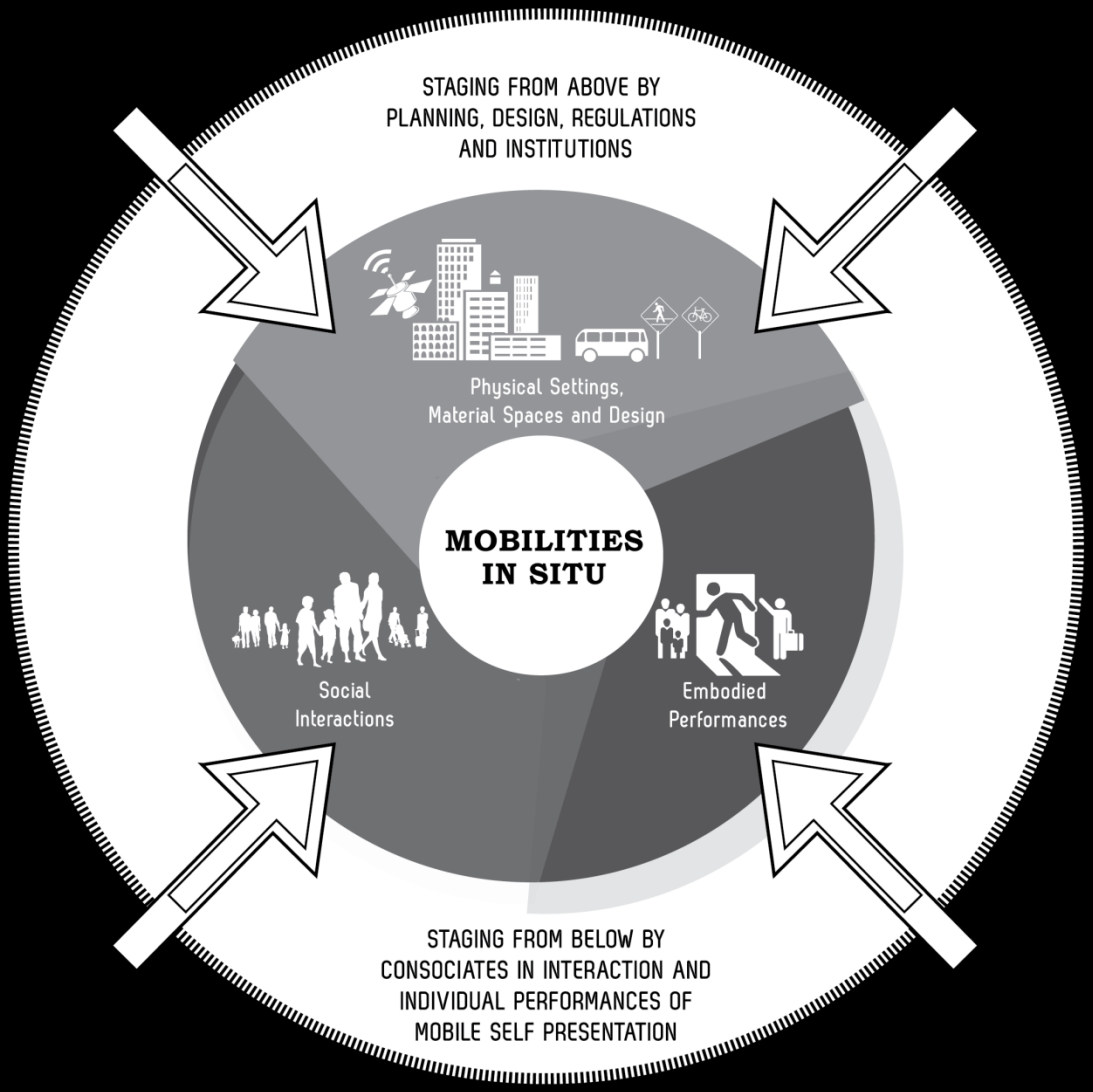
- More socially inclusive
- Less environmentally restraining
- More resilient and risk adverse
- More flexible and less vulnerable
- More inspiring and attractive
- More open-minded and fun
- ……

II. Staging Mobilities



Towards an analytical vocabulary

- ‘Staging’ is a dramaturgical metaphor derived from the work of Erving Goffman (e.g. front stage/ backstage)
- It does NOT mean that social life **IS** a theatre, but that we may understand it **AS** theatre
- Avoid conflating epistemology with ontology!!



Jensen, O. B. (2013) *Staging Mobilities*, London: Routledge

Staging from above

- Planning
  - Documents, procedures, plans
- Design
  - Design manuals, design codes, architecture
- Regulations
  - Legal frameworks, laws
- Institutions
  - Policy arenas, economic interests and actors

Staging from below

- Consociates in interaction
  - The meeting and passing by on the everyday street
- Individual performances
  - The body and its movements
- Mobile self presentation
  - Social dynamics of interaction on the move

Critical Mobilities Thinking

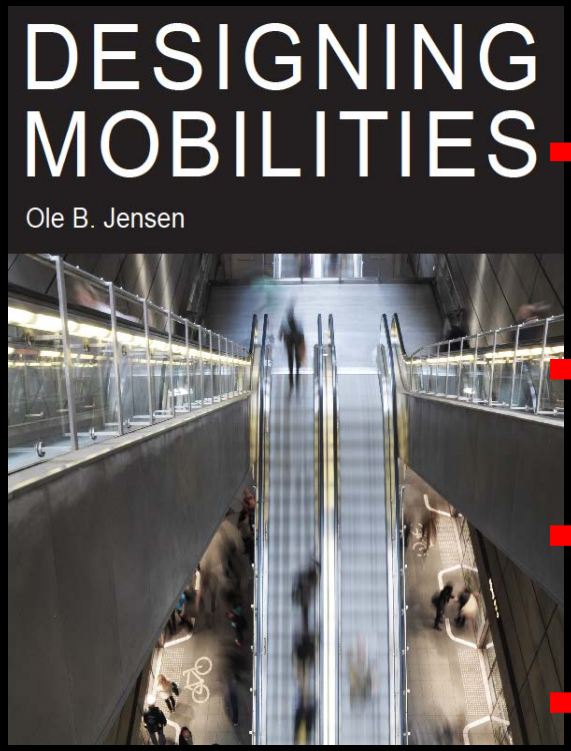
Problems/Dark Sides

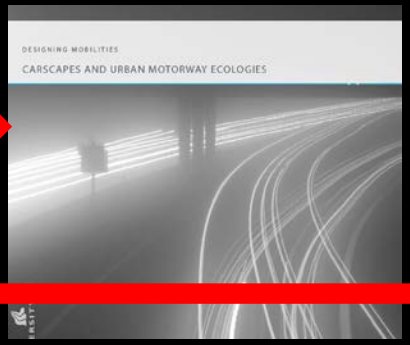
- Power and exclusion
- Failure
- Systems breakdown
- Environmental restrain
- ….

Potential thinking

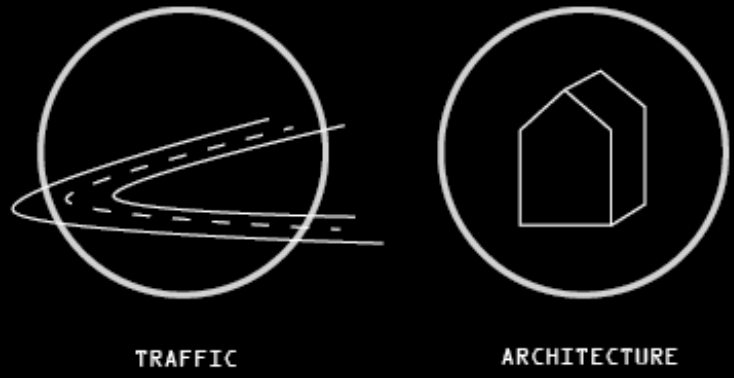
- New experiences
- Empowerment
- Social interaction
- New services
- …..

III. Designing Mobilities





IV. Mobilities Design



TRAFFIC ARCHITECTURE
(Buchanan 1963)

Design is ….

- '*Design*' reaches back to the Latin word '*designare*' which means to *'mark out or designate'* (Websters Dictionary)
- … a verb implying 'to set something apart for someone, to intend, to make an imaginary sketch' (Oxford dictionary)
- *The deliberate shaping of the environment in ways that satisfy individual and societal needs* (Norman 2007:171)
- *The conscious process to develop physical objects with functional, ergonomic, economic and aesthetic concern* (Rune Monö, in Molotch 2005: 263, note 1)
- *Designing means devising a form for an object without having that actual object in front of you* (Gänshirt 2007:57)

A peculiar mix of rationality and irrationality

Design is the playful creation and strict evaluation of the possible forms of something, including how it is to be made. That something need not be a physical object, nor is design expressed only in drawings. Although attempts have been made to reduce design to completely explicit systems of search and synthesis, it remains an art, a peculiar mix of rationality and irrationality. Design deals with qualities, with complex connections, and also with ambiguities

Kevin Lynch (1980) *Good City Form*, p. 290

Design as …

… a way of producing additional attachments that make a variety of actors congregate, forming different groupings and assembling social diversity. Tracing networks with wood, steel, polished surfaces and blinking signals, bip-bing doors and blinking elevator buttons, design connects us differently, linking disparate heterogeneous elements and effects, thus entering a game of producing, adjusting and enacting the social

Yaneva (2009) *Making the Social Hold: Towards an Actor-Network Theory of Design*, p.282

Design as environmental affordances

These moments are made possible by specific conjunctions of experiential corporealities and material surroundings. The physicality of the city constantly interacts, supports and collides with our bodies. And our bodies respond, go along with, or ignore these environmental affordances

Degen, Rose & Basdas (2010) *Bodies and everyday practices in designed urban environments*, p.60

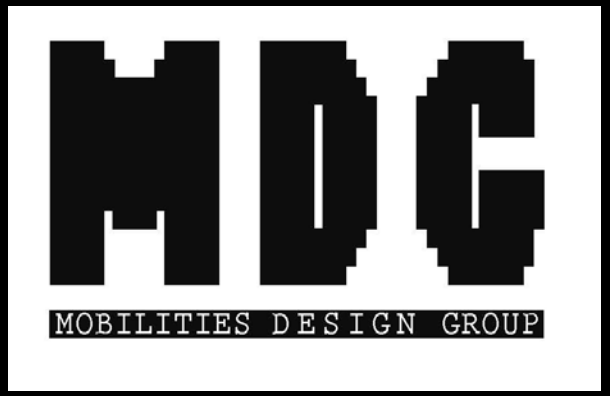
Ingold's 'design manifesto'

- *Environments are inherently variable; therefore design should enhance the flexibility of inhabitants to respond to these variations with foresight and imagination.*
- *The impulse of life is to keep on going. Design unfolds within constantly transforming life conditions, and should open up pathways for creative improvisation.*
- *There is always a tension between hopes and dreams for the future and the material constraints of the present; therefore design should invite people from all walks of life to join a conversation around this tension.*

Tim Ingold (2014) *Designing Environments for Life*, p. 244

The Mobilities Design Group

- Research in the *Mobilities Design Group* poses the pragmatic question; *How are specific mobile situations enabled, afforded, or prevented by concrete design decisions and interventions?*
- http://c-mus.aau.dk/?cat=103



Mobilities design parameters

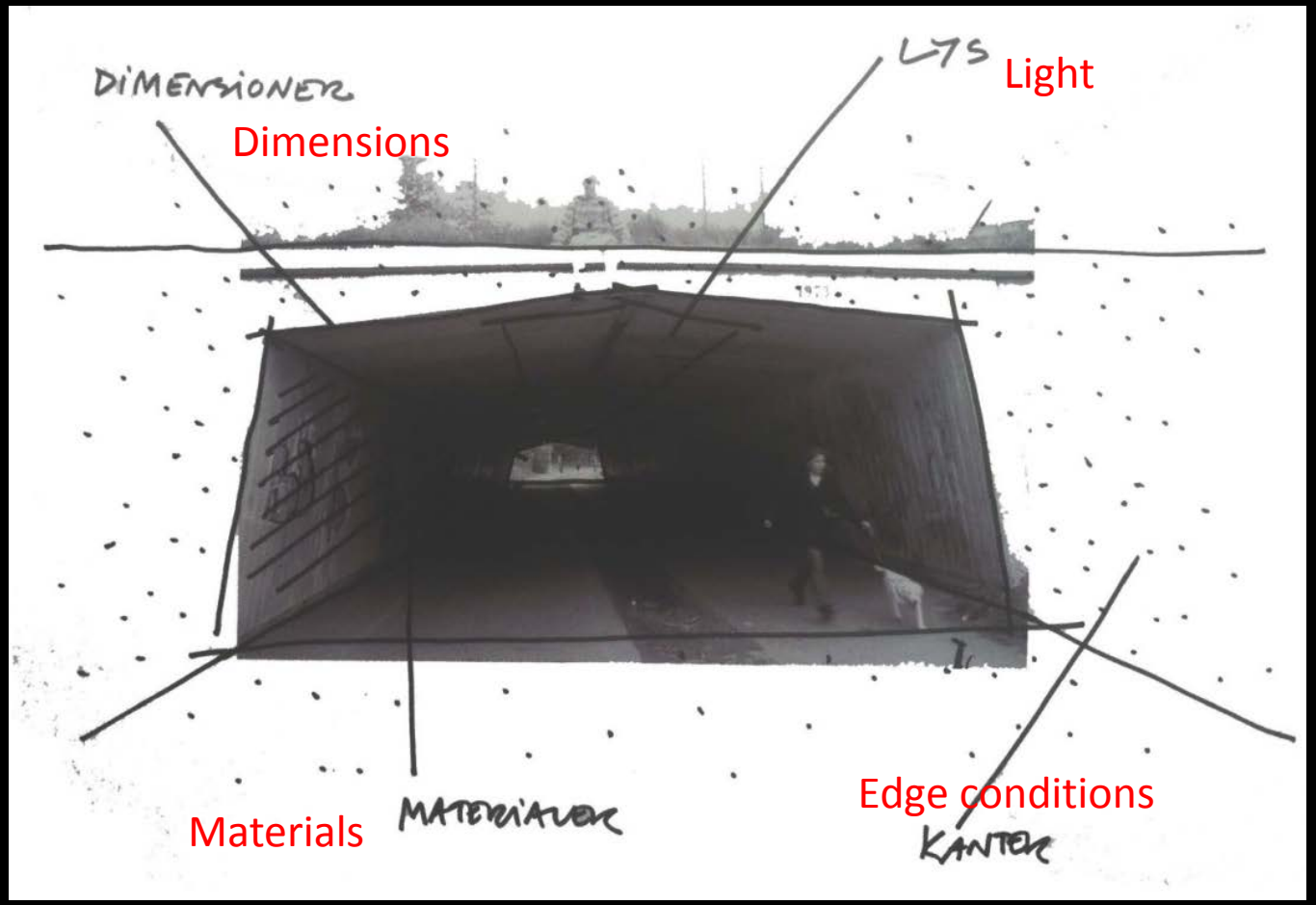


Diagram: Ditte Bendix Lanng

Enacting the multi-sensorial

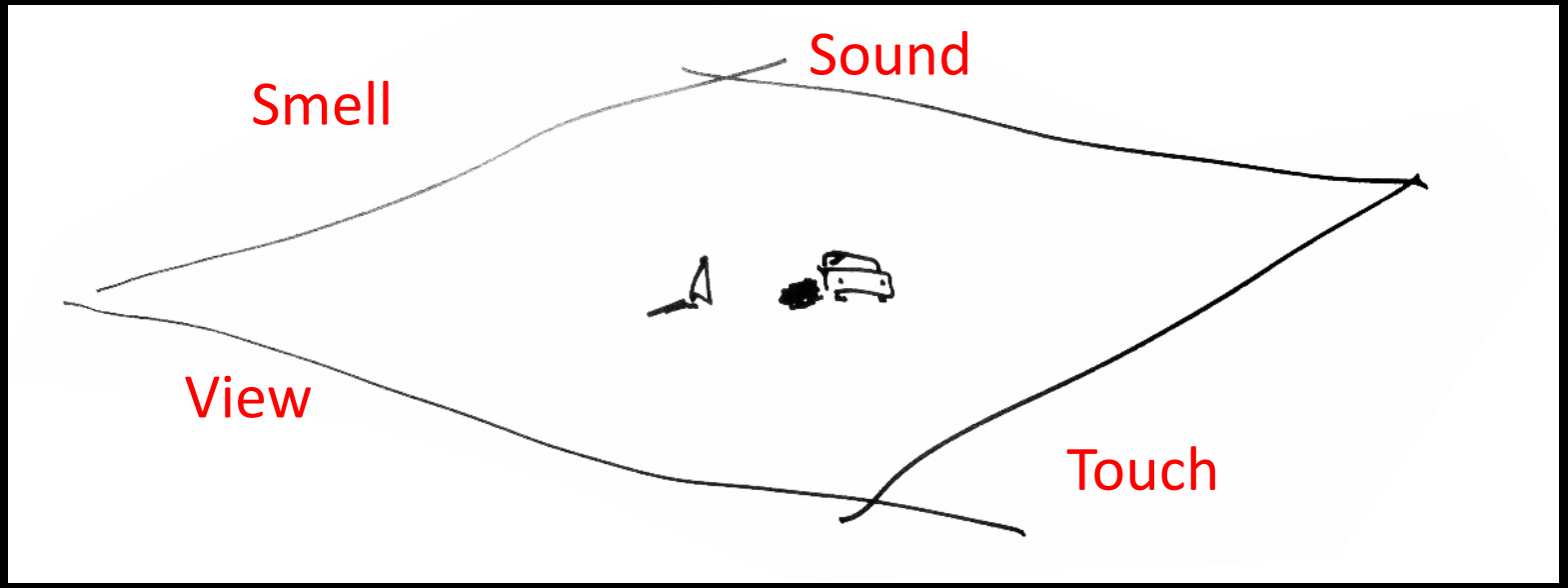
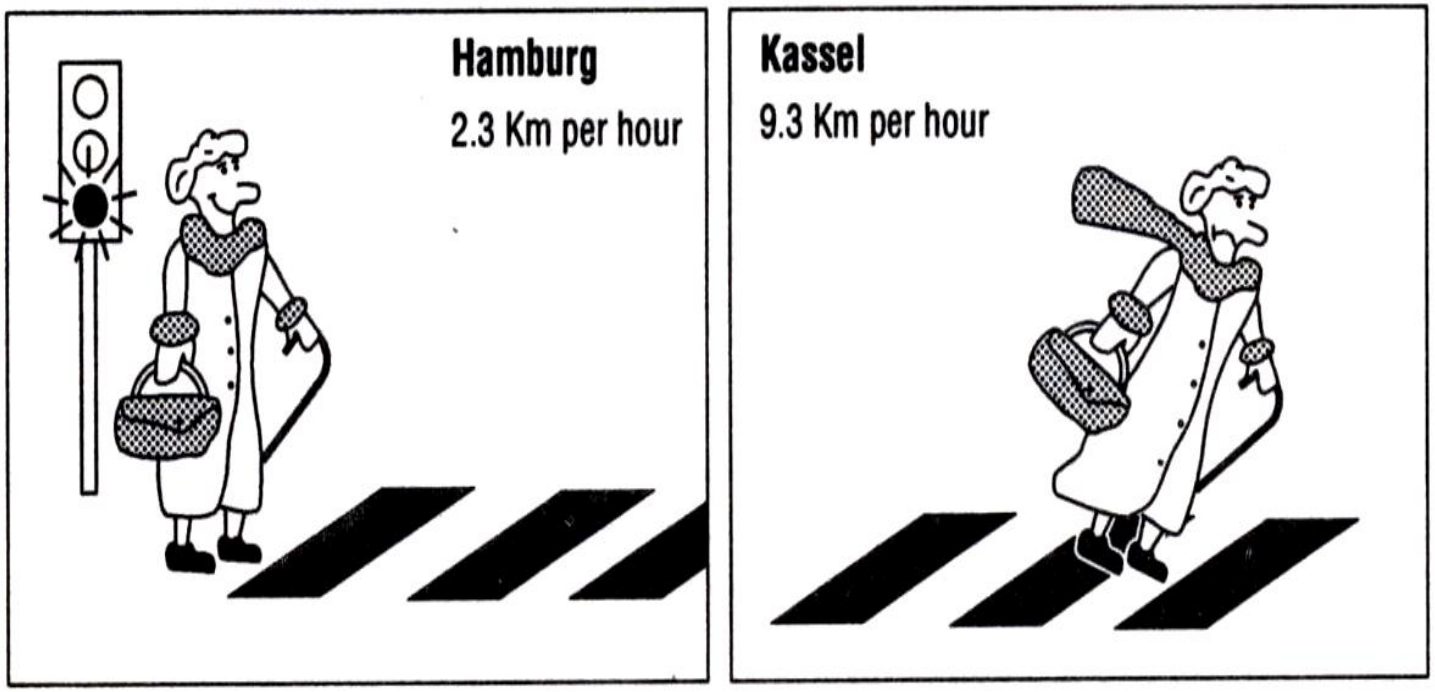


Diagram: Ditte Bendix Lanng

Figure 9.1: How Fast Must Grandma Run?

This is the speed pedestrians must cross the road when the light is green



Source: Seifried (1990)

Blue Skye Matter
– a short excursus to a paper just submitted

The following quotes are from Jensen, O. B. & P. Vannini (forthcoming) *Blue sky matter: toward an (in-flight) understanding of the sensuousness of mobilities design*, Special Issue of the Australian Geographer

Designing for the kinaesthetic sense

- The sense through which humans apprehend movement in space is known as kinaesthesia or the kinaesthetic sense. Kinaesthesia is part and parcel of the broader vestibular system, through which humans are also capable of sensing their body's balance, direction, and acceleration (Goldberg et al. 2012). Kinaesthesia, however, is not the only sense responsible for apprehending the experience of movement. Even when stilled—such as when seated inside an airplane cabin—a body apprehends its movement through a variety of multisensory stimuli (e.g. visual, aural, haptic, etc.). Dissecting which sense is responsible for which kinaesthetic sensation, therefore, is not our concern. Rather, how sensory stimuli are affected by the technological means that mediate the bodily experience of flight 'from above'—such as the design specifications of an airplane cabin—and how they are phenomenologically sensed 'from below' by passengers like us is what will concern us here. Our intention in this section is to exemplify how the distinctly different designs of the Boeing 737 and the DeHavilland Beaver bring forth different stimuli that give rise to sharply different atmospheres aboard the two airplanes

Speed, travel duration, and route

- Speed, travel duration, and route are important elements affecting aircraft design and the resulting atmosphere on-board. Take for example how design and sensations of *speed* intersect. The Boeing 737 ('classic model') has a top speed of 876 km/h and a cruising speed of 780 km/h. In contrast, the DHC-2 has a top speed of 255 km/h and a cruising speed of 230 km/h. An aircraft's speed is determined by many design variables, such as the power of the engine(s) and the weight and shape of the aircraft. The 'Classic' Boeing 737 has a length ranging between 31 and 37 meters and a wingspan of 28.88 meters, a height of 11.07 meters and a passenger seating capacity between 108 and 180 depending on the model. The 'classic' model is powered by two CFM International CFM56 engines. In contrast, the DHC-2 can accommodate six passengers, has a length of only 9.22 meters, a wingspan of 14.63 meters, a height of 2.74 meters, and a maximum gross weight of 2,313 kilos. Its power plant is a Pratt & Whitney R-985 Wasp Jr. Radial Engine.

Differentiated sensations of flight speed

- These dramatically different specifications make for very different sensations of flight speed. On the Boeing 737 the key times when speed is felt are during take-off (acceleration) and during landing (deceleration) where the kinaesthetic sense is stimulated way above any other everyday life experience. In particular the take-off acceleration appeals to many, triggering an almost adrenalin-like rush that is hard to experience elsewhere. As the 737 reaches cruising speed the vehicle speed itself is then hardly felt. Turbulence and directional shifts are felt, but while cruising the 737 feels as 'steady as a rock.' Flying the DHC-2 is instead like traveling on a speeding one-tonne truck. The Wasp Jr. engine is extremely loud. At cruising speed the propeller is deafening enough to prevent passengers from being able to listen to mobile devices with their earphones and even from speaking to one another. During take-off and landing the propeller's roar is even rowdier—so rambunctious that most DHC-2-operating airlines offer passengers ear plugs for the flight. So, while visually the sensation of speed is not particularly acute, the loudness of the Pratt & Whitney engine amplifies the relative velocity of flight.

Preassure cabins …

- A Boeing 737, thanks to its pressure cabin design, is capable of reaching a cruising altitude up to 11,300 meters, which not only takes the aircraft 'above the weather' but also allows operation on relatively longer routes. One of the most striking design features felt by the passengers is precisely the pressure cabin technology. Apart from the fact that this technology enables flying at much higher altitudes it also affects the embodied sensations in the cabin. For one thing, windows are not to be opened. At these cruising altitudes an immediate lack of cabin pressure may lead to loss of conscience within very few minutes. Moreover, the outside temperature at these altitudes would make a sudden open window very dangerous. The pressure cabin design then leans on a closed system of air conditioning and air circulation which most passengers recognize in the form of very 'dry air' (hence the continuous serving of water from the flight attendants on long distance hauls). The 'pressure cabin' will not, however, disallow the passenger's sensation of pressure change. This is predominantly felt in the ears, and anything from chewing gum to various de-pressurizing techniques like blowing one's nose whilst keeping it covered with the fingers, can often be observed during inflight. The pressure changes are mostly felt during altitude changes such as take-off and landing, but can also be experienced mid-air if the plane changes altitude. All-in-all the 'pressure cabin' design contributes to the sensation and atmosphere of an insulated and 'truly artificial environment.'

… or not

- The reality is different on a DHC-2 because of the absence of a pressurized cabin capable of flying above weather. The highest a DHC-2 can fly is 5,486 meters, but this service ceiling is purely theoretical. Most Beavers operate from lakes and seas because of the plane's effective STOL (Short Take-off and Landing) design. This means that Beavers are ideal for travel to/from small islands to mainland towns and cities (it is no accident that most DHC-2s can be found along the North American Pacific Coast and along the Australian and New Zealand coastline)—typically all areas where flight occurs at very low altitude. Flying at an altitude of 60-100 meters means it is impossible to have a God-like landscape view as one does on pressure cabin aircrafts (see Budd 2010). However, the low altitude makes it possible to 'play spy'—for example to glance at neighbours washing their cars and weeding their gardens, or spotting pods of seals frolicking in the water. This may be entertaining but it also makes the body feel vertiginously 'hung' in mid-air—much rather like the sensation of peeking down the balcony of a ten-storey building. It is an atmosphere of suspension which—at best—feels like weightlessly gliding or—at worst—precipitating uncontrollably with every 'bump' (a feeling commonly experienced during bad weather, especially windy, days).

Alien Phenomenology?

The ‘staging mobilities’ model clearly illustrate that we should pay attention to ‘in situ’ practices and how they entangle sites, technologies and artefacts as well as other mobile subjects and their bodily capacities. The ‘in situ’ experiences of either 737 or DHC-2 aeromobility inscribe different sensorial dimensions, but they also invite us to think in terms of a flat ontology bringing the materiality of the two different aircrafts much more forcefully into the story as we developed an inflight understanding of the sensuousness of mobilites design

So, *how does it feel to be a thing?* (Bogost)

- Elsewhere, I have tried a similar thing with my analysis of the earthquake-destruction of the Seattle Seawall in which I carry on an imaginary dialogue with the Seawall speculating on how the world would look from the point of view of a contested infrastructure *… If only it could speak*

See Jensen, O. B. (2012) *If Only it Could Speak: Narrative Explorations of Mobility and Place in Seattle*, in Vannini, P., L. Budd, O. B. Jensen, C. Fisker & P. Jirón (Eds.) (2012) Technologies of Mobility in the Americas, New York: Peter Lang, pp. 59-77

V. Concluding remarks and future perspectives

Towards an emerging research agenda

- Focus of Studies
  - Situated practices, doings, acts and interactions
  - Objects, artifacts, systems, technologies, spaces, the human + non-human
  - Sensed and embodied mobile practices (kinesis)
- Methods and approaches
  - Experimental, creative and performative
  - Situated and empirical
  - Foregrounding the material to the textual
  - *Speculative and realist material narratives*

Epistemologies and frames of thinking

  - Post-phenomenology … or even 'alien phenomenology'
  - Pragmatism … of some sorts
  - More than representational/non-representational

Material pragmatism

- Mobilities often takes place in what some term ‘non-places’ and it’s ‘more than …’ effects are often invisible
- The research into design and mobilities opens up to a ‘material pragmatism’ seeking to understand and provide languages for these mundane, but increasingly important practices
- Mobilities design research explore how human as well as non-human materiality matters by targeting situational mobilities

The ‘Dark Sides’ of Mobilities Design

- In this talk I have spoken much about ‘potentials’ and nice options for understanding how mobilities design may enhance human flourishing … but, but … moblities design may indeed also work in de-humanizing, exclusionary, and power-ridden ways … and that’s the focus for the next iteration of my research into mobilities design where my first case of attention is …

… ‘Urban Drone Surveillance’

… ‘Urban Drone Surveillance’

… to be continued!!

C-MUS
Centre for Mobilities & Urban Studies

AALBORG UNIVERSITY
DENMARK