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Potentials and barriers of superblocks to contribute towards a low carbon transition in Vienna

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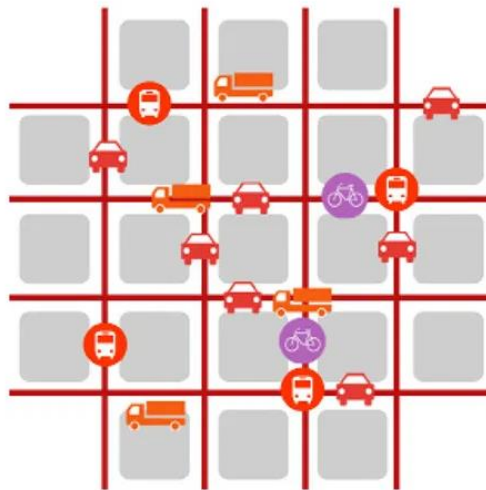


The superblock urban planning intervention



SUPERBLOCKS MODEL

Current Model



Superblocks Model



- | | | |
|--|--|--|
|  PUBLIC TRANSPORT NETWORK |  PRIVATE VEHICLE PASSING |  DUM PROXIMITY AREA |
|  BICYCLES MAIN NETWORK (BIKE LANE) |  RESIDENTS VEHICLES |  ACCESS CONTROL |
|  BICYCLES SIGNPOSTS (REVERSE DIRECTION) |  URBAN SERVICES AND EMERGENCY |  BASIC TRAFFIC NETWORK |
|  FREE PASSAGE OF BICYCLES |  DUM CARRIERS |  SINGLE PLATFORM (PEDESTRIANS PRIORITY) |

Source: Ajuntament de Barcelona

Three “Supergrätzl” application areas in Vienna



Three potential superblock application areas in Vienna (results by SUPERBE): 1a) map of the location of the selected superblocks in Vienna 1b) detailed map that shows exemplary proposed changes to traffic organisation, allocation of street spaces, potential morphological changes. Maps of superblock application area: 1c) 7th district. 1d) 10th district. 1e) 17th district.
 Source: Florian Lorenz and Georg Wieser, 2021

Research questions and scope:

What are the socio-spatial conflicts and coalition-building opportunities?

- stakeholder perspectives on the transformative change through “Supergrätzl” in the strategic action field of place governance?

How do socio-spatial conflicts shape the potential intervention depth of “Supergrätzl” that has an impact on changes in mobility patterns?

What are the potential climate and health benefits due to reduced car-bound mobility:

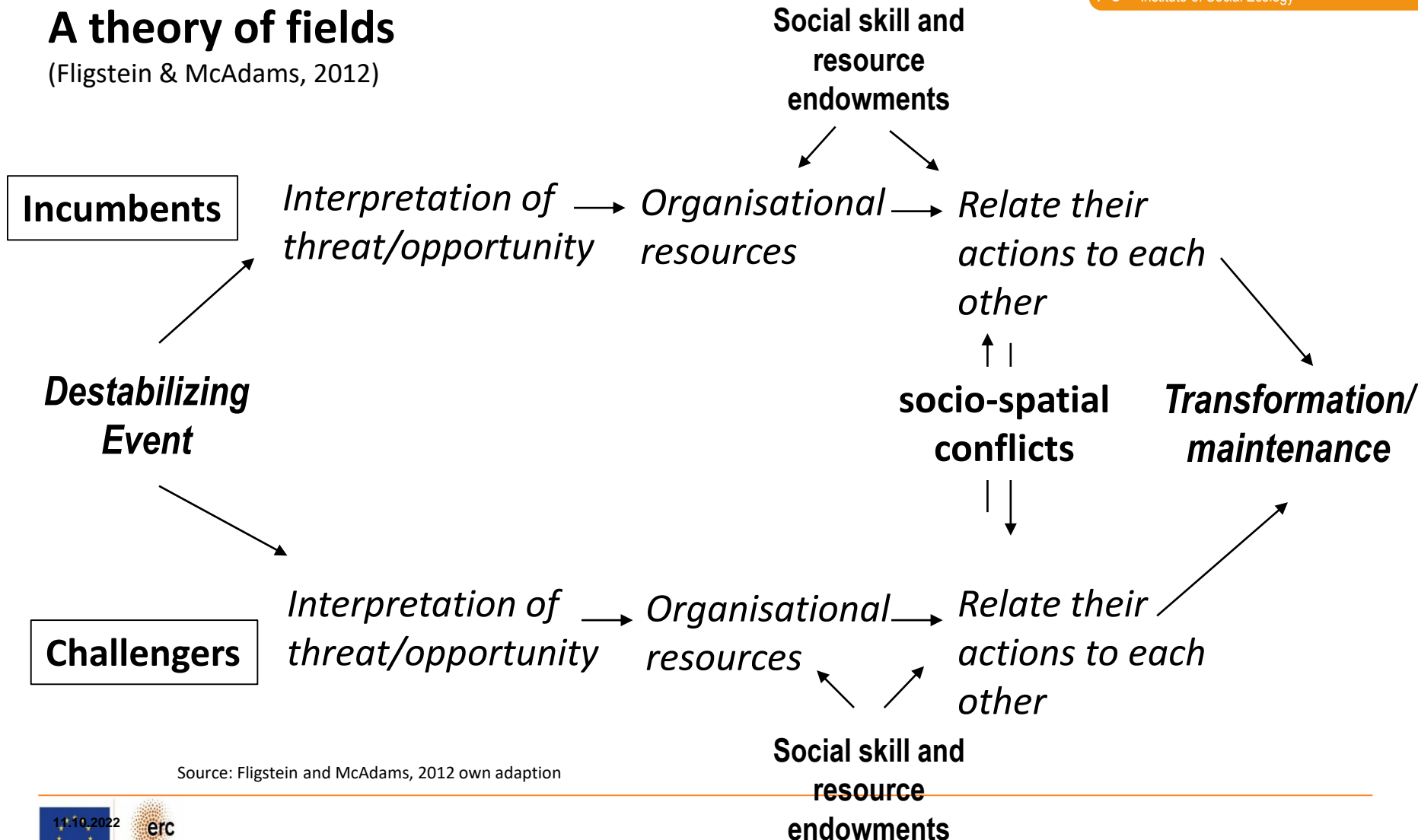
- energy/emission savings?
- public health improvements due to increase in active modes of mobility?

Socio-spatial conflicts and coalition building



A theory of fields

(Fligstein & McAdams, 2012)



Source: Fligstein and McAdams, 2012 own adaption

Climate and health benefits

The Stock-Flow-Service Nexus

(Haberl et. al 2017,2019, Kalt et al. 2019)

Stocks Buildings, infrastructure, machines



Services mobility, shelter, public health etc.



Flows Energy, material, waste, emissions



Source: wien.gv.at



Source: pixabay

The integrated mix-method approach

- **Stakeholder Interviews:**

Semi-structured interview guide and coding informed by the theory of fields by Fligstein & McAdams (2012)

- **Traffic modeling that was informed by stakeholder interviews**

Latent Class Model (Greene & Hensher, 2003) that was estimated on data collected in a Mobility-Activity-Expenditure Diary (Hössinger et al. 2020) to predict the mode choice behavior of people traveling in and out the "Supergrätzl"

- **Modelling of potential energy and related CO₂_{equ} emission savings:**

Car use related energy and CO₂_{equ} conversion factors (Environment Agency Austria, 2020)

- **Modelling of health improvement:**

Changes in mortality due to increased activity levels (Δ min/person/week) by calculating a hazard ratio based on a time-mortality function (Arem et al., 2015) adopted to Vienna mortality rates (Statistik Austria, 2020)

Results: Socio-spatial conflicts and coalition building



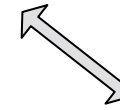
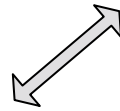
- **Place governance:** Provision of built environments for car-bound mobility is highly institutionalized.
- **External Event:** Climate crisis and its' impacts (e.g. heat islands) cause contestation of car-bound built environments by actors in all levels.
- **Organisational resources:** Challengers know each other and the role they take quite well. Coalition-building is chaotic and unstructured yet.
- **Central conflict on a local scale:** Reduction of parking space.
- **Resource endowments:** Reconstruction measures cause high budgetary costs.
- **Transformation:** City- or district-level political commitment to raise and spend necessary funds and provide further planning capacities



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Results: Supergrätzel's climate and health benefits



Districts

7th district

10th district

17th district

Car-bound CO₂_{equ} savings

51% (9kg/cap/year)

21% (49kg/cap/year)

11% (20kg/cap/year)

Reduced mortality due increased activity

7 deaths per 100.000 people

26 deaths per 100.000 people

26 deaths per 100.000 people

Concluding remarks

- **The next steps:** realization of a first experimental “Supergrätzl”
 - Resistance and expected conflicts as stumbling block
 - inclusive superblock planning and design
 - immediate reconstruction measures
- Our research indicates that potential climate and health benefits are the highest in the more deprived urban area whereas resistance is expected to be less in the more well-off district.
- **Limitations:** This study cannot account for potential negative side-effects of superblocks such as traffic relocation or gentrification.

“Supergrätzl” could find a future-oriented continuation of Vienna’s spatial justice approach.

Once locally realized, “Supergrätzl” might scale up as urban dwellers can experience related benefits that might increase the demand for “Supergrätzl” in the city.

Thanks for your attention

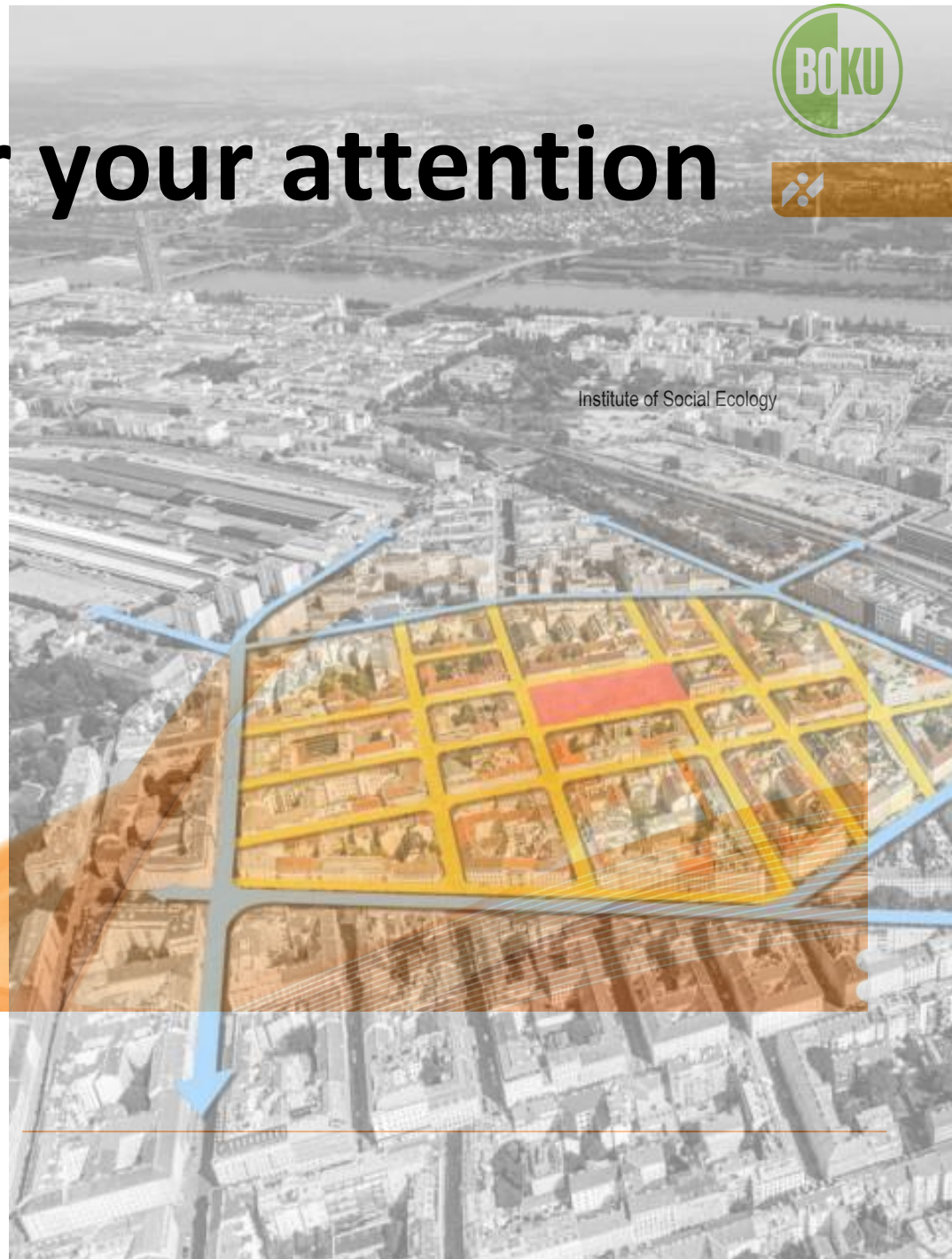


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