„Pathways to sustainable mobility: Radical socio-technical change or sustained path dependencies?"

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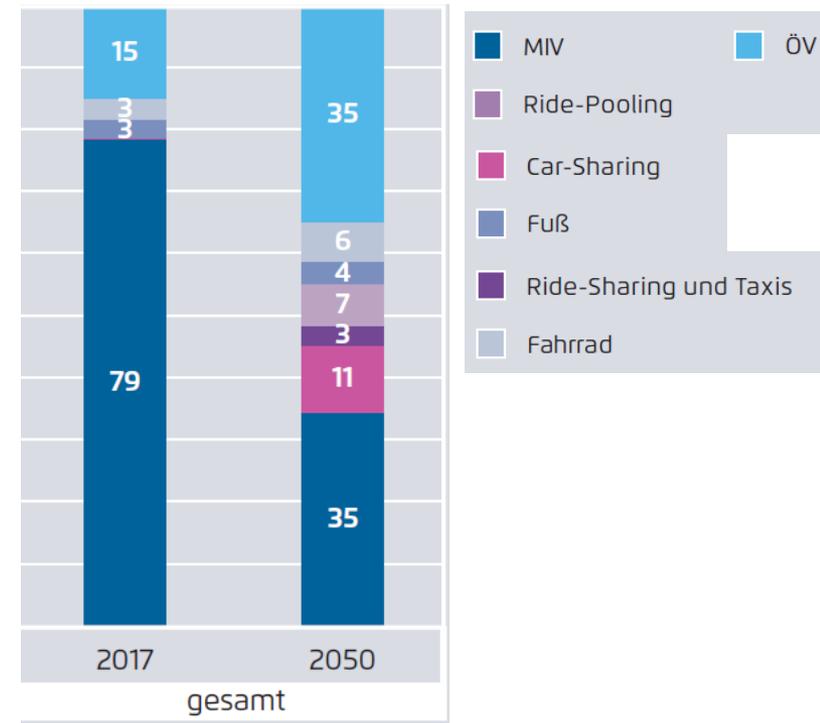
Growing and unequal resource consumption, high CO2-emissions from transport.

Can mobility pathways be moved from growth to suffienciency and resourse conservation?

— Crisis of society-nature relationship (Dörre 2020).

— Scenarios show: To reach climate goals a transition to carbon-neutral vehicles will not suffice.

— Scenarios estimate necessary **reduction of travel demand** (up to 30 percent), **reducing the modal share of the car** from around 75 to 50 percent of kilometers travelled, doubling the modal share of Public Transit (2050).

Legend:
- MIV
- ÖV
- Ride-Pooling
- Car-Sharing
- Fuß
- Ride-Sharing und Taxis
- Fahrrad

2017 — 15, 3, 3, 79
2050 — 35, 6, 4, 7, 3, 11, 35

gesamt

Quelle: Agora Verkehrswende 2020

Contours of a sustainable transport system are becoming apparent.

Transition to sustainable mobility is not a technical challenge, but a societal challenge.

— Transition to a transport system centered around non-motorized transport (cycling and walking) and „multioptional" Public Transit (including flexible services, carsharing, bikes, micromobility…)

— Fewer trips through „virtual mobility".

https://sharingcitiesalliance.knowledgeowl.com/help/copenhagen

The future of mobility has become political again.

Mobility politics will be closely intertwined with the politics of digitization.

— Increasing public discourse on measures to build back car-centered infrastructure and regulation (Ruhrort 2019).

— Many Europeam cities are reducing space for cars (e.g. Paris, Gent).

— Beginning discourse on effects of digitization: How to use digital technologies (e.g. home office, automated driving),while avoiding growth effects (WGBU 2019, Canzler et al. 2019)?

Quelle: Changing Cities

The biggest challenge, but also potential is in suburban communities.

Interdisciplinary research group studying processes of transition in a regional context.

- **Spatial planning:** Role of mobile work and co-working spaces for reducing travel demand

- **Transport planning:** Role of micromobility services in suburban settings

- **Psychology:** Support for transport policy measures in suburban communities
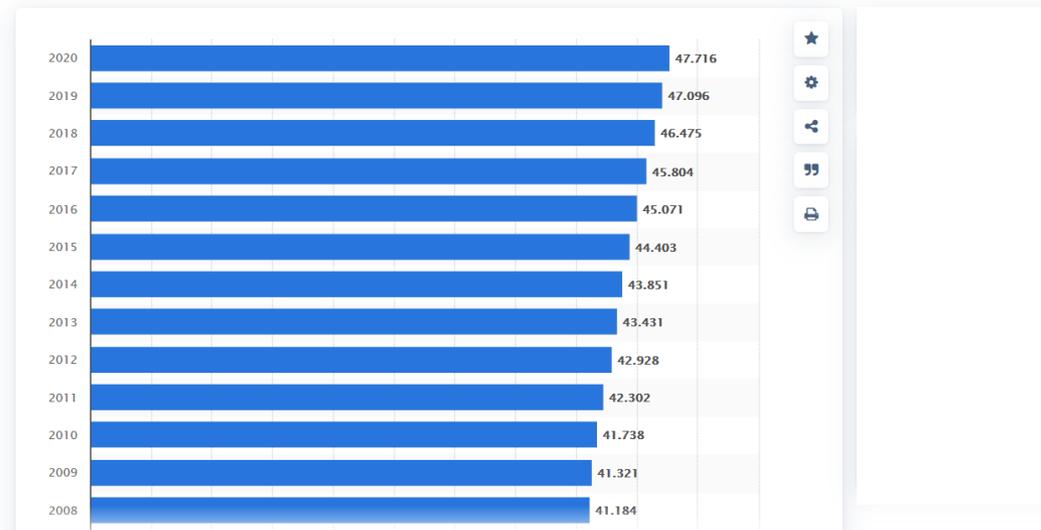
- **Sociology: ...**

https://www.bbsr.bund.de/BBSR/DE/forschung/programme/exwost/Studien/2010/SuburbanerRaumLebenszyklus/01_Start.html?pos=2

Sociological research questions: How can large-scale socio-technical change become possible?

Strong path dependencies in the socio-technical system of mobility.

— Can social „normality" be changed?

— Sociology can analyse the institutional embededdness of a car-based mobility sytem (Urry 2004) and tansport growth and study shifts in „collective conventions" of mobility (Shove 2021).

Anzahl der gemeldeten Pkw in Deutschland in den Jahren 1960 bis 2020
(Bestand in 1.000)

2020	47.716
2019	47.096
2018	46.475
2017	45.804
2016	45.071
2015	44.403
2014	43.851
2013	43.431
2012	42.928
2011	42.302
2010	41.738
2009	41.321
2008	41.184

State of research: Sociological insights on the barriers to socio-technical change in mobility.

Institutional setting is oriented towards growing
car use and growth of travel demand.

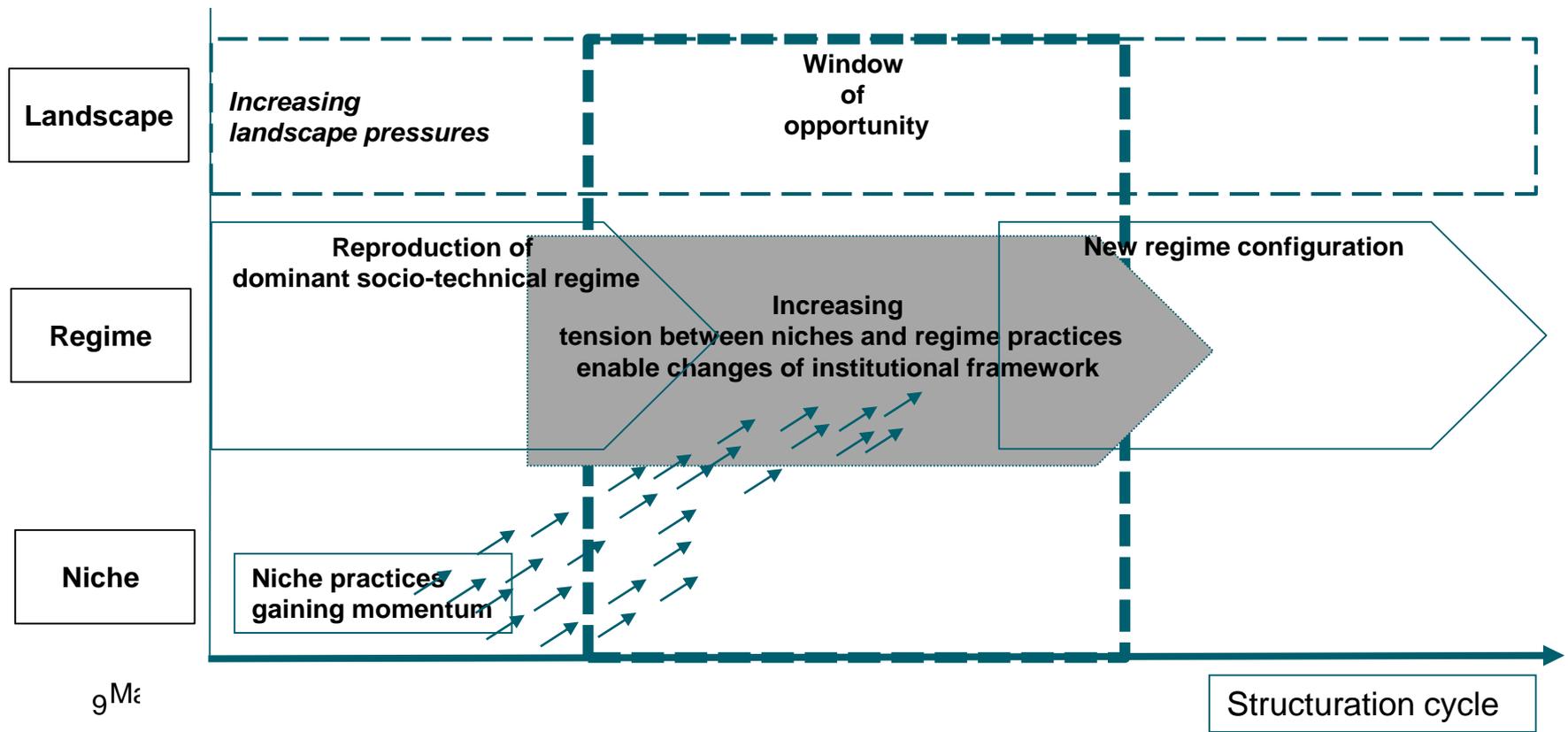|	
Macro-level	Key role of mobility in modern society: Growth imperative (Dörre 2020), *acceleration* (Rosa 2016/2005); Digitization as a „fire accelerant" of resourse consumption (WGBU 2019)
Meso-Level	Regulation and transport policy have fostered automobility as a socio-technical regime (Canzler et al. 2018), **especially regarding the distribution of public space**; „Political economy of car-dependence" involves incumbent interests (Mattioli et al. 2020), „System of automobility" re-produces car-dependent spaces (Urry 2004);
Micro-Level	Car ownership and use as key elements of an „Imperialistic lifestyle" (Brand and Wissen 2017); Mobility as capital (Kaufmann et al. 2004) and medium of social distinction;

Theories of social change: What explains reproduction or change of social formations?
Change resulting from interaction between structure and agency on different societal levels.

— **Structuration Theory** (Giddens 1986): Social structures condition individual actions; Outcomes of agency reproduce or change social structures.

— **Social Practice Theory** (Shove et al. 2015): Studying social practices as amalgamations of „material components", „meanings" and „competencies"; Evolution of „collective conventions" as the unit of sociological analysis.

— **Socio-Technical Transitions Theory** (Geels et al. 2018): Struggles between „niche" and „regime"; Key role of regime structures such as regulations (Canzler et al. 2018); Feedback Loops and Tipping Points (Urry 2004).

Socio-technical transitions: In windows of opportunity, regulatory changes become possible…

…niche practices can break through into the mainstream (Geels et al. 2018).

Landscape | Increasing landscape pressures | Window of opportunity

Regime | Reproduction of dominant socio-technical regime | Increasing tension between niches and regime practices enable changes of institutional framework | New regime configuration

Niche | Niche practices gaining momentum

Structuration cycle

Indications of beginning dynamics of change in the mobility sector.

Empirically studying interactions between different societal levels.

Macro-level   Climate policy and demands for urban quality of life as drivers of change: Can alternative narratives of mobility futures diffuse into different social groups/ spatial settings (Andor et al. 2020)?

Meso-Level   Intensifying struggles between socio-technical regime and niche practices in the realm of regulation: Studying actor-strategies of cities and service providers in the re-distribution of public space (Ruhrort 2020).

Micro-Level   Diffusion of new social practices of „multioptional mobility": Studying meanings attached to new mobility services. How are they connected to overarching narratives?

Example of carsharing: Studying the evolution of social practices and processes of their institutionalization.

Relation between carsharing and narratives of car-free cities; regulatory strategies of city authorities: reducing space for private cars?
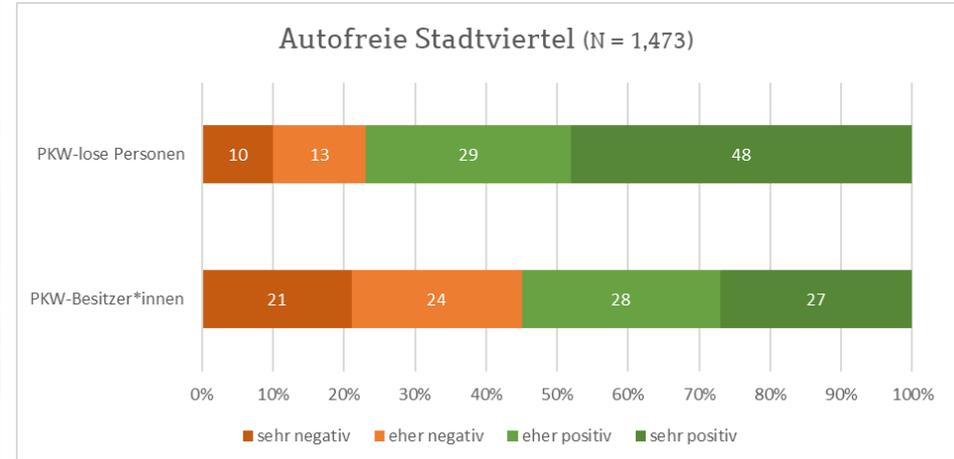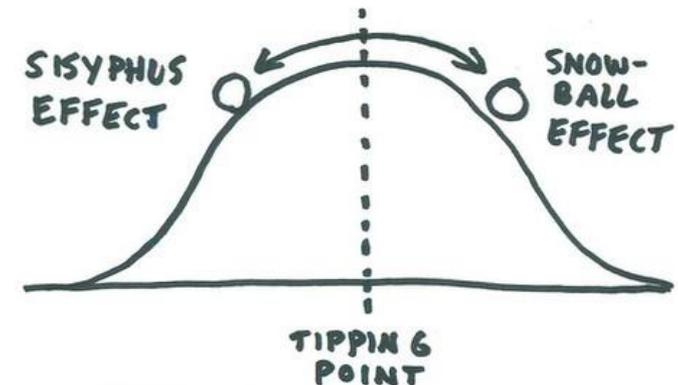

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hare%20Berlin_UBahn_300dpi_7.jpg

Autofreie Stadtviertel (N = 1,473)

	sehr negativ	eher negativ	eher positiv	sehr positiv
PKW-lose Personen	10	13	29	48
PKW-Besitzer*innen	21	24	28	27

Ruhrort et al. (2020)

Towards a sociological „theory of change" in the field of mobility.

Change becomes possible when multiple de-stabilizing trends converge (Urry 2004).

— Beginning change dynamics are visible on multiple levels.

— Pandemic is an example of Windows of opportunity: Change of „collective convention" becomes conceivable.

— Digitization is beginning to transform mobility;

— **Open questions:** Can change dynamics be instituationalized in such a way that resourse consumption is actually reduced? How can change dynamics be translated into a socially sustainable transition?

SISYPHUS EFFECT

SNOW-BALL EFFECT

TIPPING POINT

WZB

Wissenschaftszentrum Berlin
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Thank you for your attention!

Dr. Lisa Ruhrort