

More space – for better or worse

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Agenda

- Historical context
- Theoretical understanding of power
- Study setup
- Tentative results from work in progress
- Reflections



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Contesting Bicycle Lanes as Tools of Discipline, 1920–1950

- ‘As the Swedish engineer Einar Nordendahl for the Regional Plan for Greater Stockholm bluntly remarked in 1936, “The construction of special lanes for bicyclists and pedestrians is to a large degree motivated by the urge to free the main lane from such traffic elements’” (Oldenziel & de la Bruhèze 2011, p.35)
- ‘Bicycle lanes became the instrument governments used to deal with increasing traffic flows, framed in neutralizing terms of speed and safety’ (ibid., p.36)
- “‘It is wrong in principle that a cyclist should be required to put himself to considerable trouble and expense to keep from being run into by a driver who is not obeying the common law of England’” (ibid., p.37)



Erasing Bicycles as Paths toward Modernity, 1950–1975

- ‘In postwar reconstruction, the nation-states in Europe all reinforced the shift toward anti-cycling sentiments and pro-car attitudes’ (ibid., p.38).
- ‘Influenced by American models, urban planners cast cars as modern and progressive; bicycles were anachronistic and unsafe’ (ibid., p.38).
- ‘The future belonged to the car. Therefore, policy initiative should prepare cities for such an inevitable future’ (ibid., p.38).
- ‘Cycle lanes […] offered planning opportunities to increase urban car space once cyclists had disappeared from the urban landscape’ (ibid., p.39).

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Bike Lanes as Symbols of Sustainability, 1975–1995

- ‘Grass-roots organizations demanded a regime shift from car-governed cities to public transport, bicycle-, and pedestrian-governed cities, reviving and (re)empowering bicycle organizations’ (ibid., p.40).
- ‘Now cycle lanes transformed into symbols of bicycle power, health, and sustainability’ (ibid., p.40).
- ‘Since the 1970s, safe and segregated bicycle lanes have been resurrected from the ashes of negative bicycle images, but recast in a very different mold’ (ibid., p.42).



Swedish context


https://www.visitaskersund.se/bo/privat-uthyrare/rosendal

- The Swedish parliament adopted a goal on increased travel by sustainable modes of transport in 2018 (Riksrevisionen 2025)
- Separated cycle infrastructure is stressed as important in this policy (ibid.)
- A reallocation of space, from car lanes to sustainable modes of transport (mainly wider cycle lanes/paths), has been and is occurring in major Swedish cities (Larsson & Svensson 2021)
- So far there is no evident effect of an increase in cycling levels in general (Trafikverket 2024), but there are indications on increased levels in bigger cities (Region Skåne 2023)

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What is a bicycle?



https://www.intersport.se/product/1297817/01/020?gclid=CjwKCAiAzNj9BRBDEiwAPsL0d3SpH_jU77uMqEA6uu6G2JyRB5aqK4eGkCOZNRlJPngVgL1PvJC_QBoCmBkQAvD_BwE&gclsrc=aw.ds



https://www.jula.se/catalog/fritid/cykel/cykl ar/sparkcyklar/elscooter-008015/



https://auctionet.com/sv/392308-permobil-shoprider-deluxe-samtida



red/747=960&aid=526220&utm_source=google&utm_medium=cpc&utm_campaign=Performance%20Max%20-%20Bikes&gad_source=1&gad_campaignid=17335788456&gclid=CjwKCAjwtKrUBhAhEiwAr77Zohdek0n42_5zCEJeLSPUbbD2T6HbAxyCy1j8afLy7vNsp1YOCFyVmhoCQQUQAvD_BwE





https://www.cykelkraft.se/laddcykel-cargobike-flex-svart?srsltid=AfmBOooh_EoaFTpOxn9Lo-Gr82vByHcppEm4uQTZLcVwrcdrUcDQWmxb



https://www.skatepro.se/426-20117.htm



https://www.transportnet.se/article/view/683763/schenkers_cykelsatsning_borjar_i_linkoping

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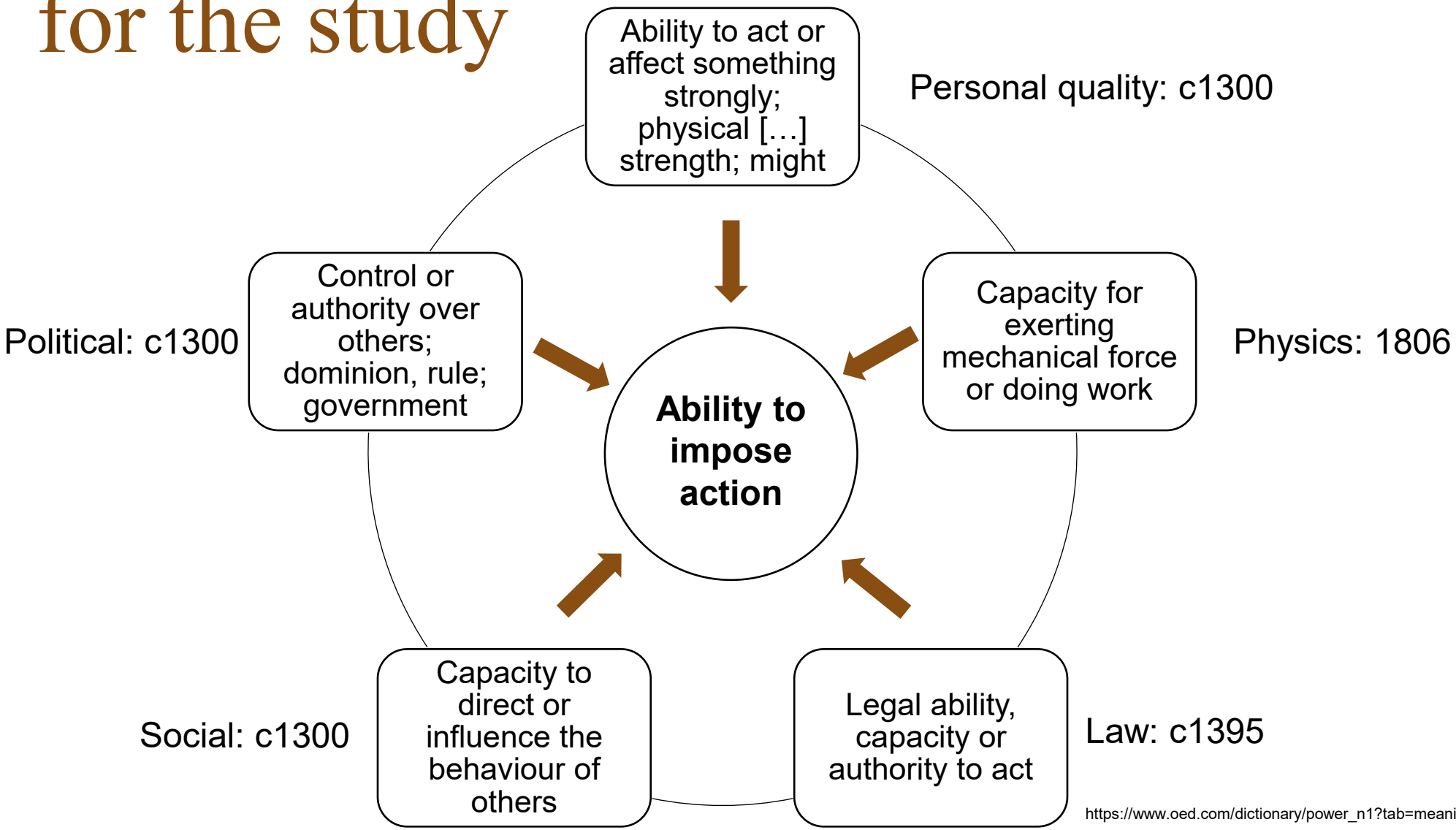
https://www.transportstyrelsen.se/sv/vagtrafik/fordon/fordonsregler/regler-for-olika-fordonsslag/cykel/

Theoretical framework of Power for the study



https://www.oed.com/dictionary/power_n1?tab=meaning_and_use#28683627

The application of Power

- Might makes right – biggest goes first



https://www.vlt.se/vasteras/okad-trafik-oroar-barnen-far-fly-undan-bilarna/

…as not only size matters, but also, speed!



- However, not entirely true...

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Power analysis

- It is the kinetic energy (E_k) that determines the impact effect
- The kinetic energy is a product of the mass (kg) of the road user and its velocity (m/s) through the equation: $E_k = \frac{m \times v^2}{2}$
- Physical power is the amount of kinetic energy exerted in a period of time
- Due to this relationship, for the analysis we therefore use the kinetic energy as a representation of physical power which in turn is understood as (one form of) social or political power

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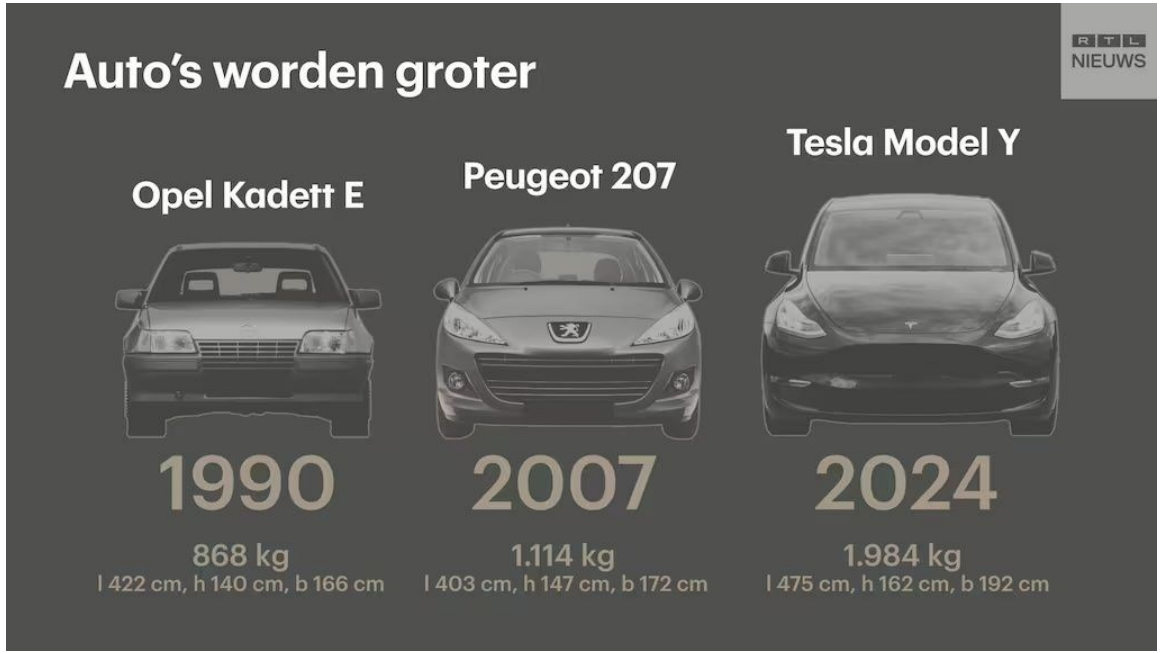
Analysis example I

- In recent years base speed limits in urban areas have been reduced from 50 km/h to 40 km/h, and in some cases even 30 km/h
- At the same time cars have become bigger and heavier
- What is the effect on the kinetic energy of these changes?



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Analysis example II

- It has been shown that a speed limit reduction from 50 km/h to 40 km/h in practice only implies 1–4 km/h reduction of the average speed (Trafikanalys 2017).
- We therefore benevolently assume that the real speed reduction went from 50 km/h to 46 km/h between 1990 and 2007 and from 40 km/h to 36 km/h between 2007 and 2024.
- Calculations reveal:

$$E_{k1990} = \frac{868 \times 13.89^2}{2} = 83{,}719J \quad E_{k2007} = \frac{1114 \times 12.78^2}{2} = 90{,}942J \quad E_{k2024} = \frac{1984 \times 10^2}{2} = 99{,}200J$$

- In practice this means that the kinetic energy, i.e. the power of the cars, actually increased during this period, despite the reduction in speed limits (ceteris paribus)

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Method

- Document analysis
  - Municipal policies
  - General infrastructure planning along with traffic flows and speed
- Empirical observations of road users on cycle paths
  - Quantitative observations – flows, speed, infrastructure geometry and design by video recording and manual observations
  - Qualitative observations – roadside interviews with pedestrians and, if feasible, survey with cyclists

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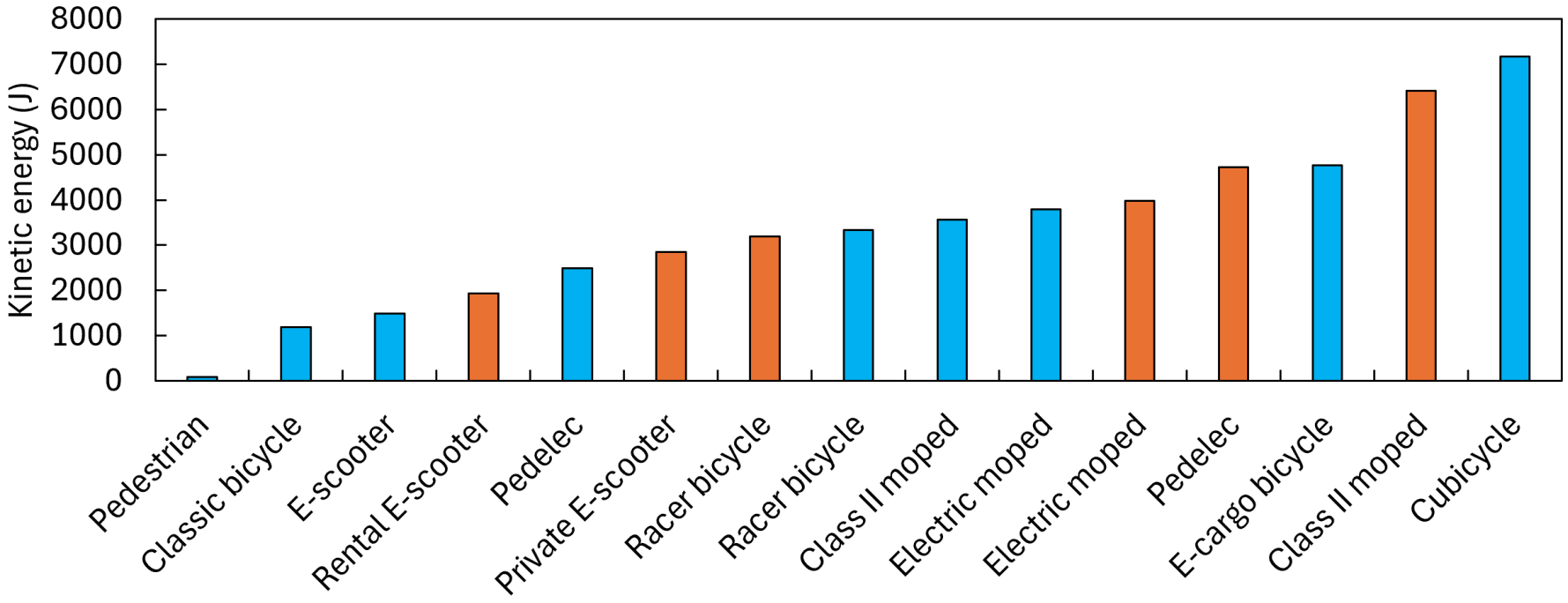
Tentative results



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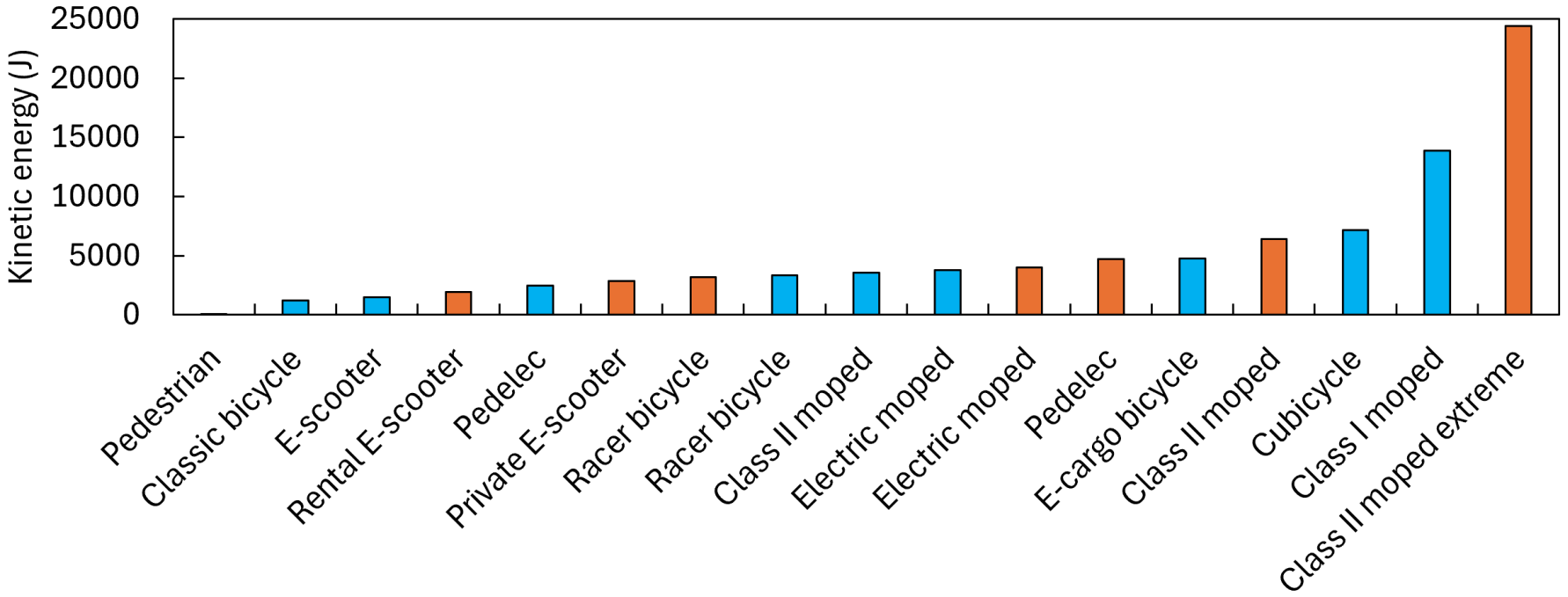
Tentative results



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Final reflections

- “Without a comprehensive view of mobility, an exclusive focus on building segregated bike lanes will result in lightly travelled bicycle lanes” (Oldenziel & de la Bruhéze 2011, p.42)
- Without sufficient will to impose control and authority over bicycle infrastructure policy, i.e. political power, more space may paradoxically risk leading to disempowerment rather than empowerment of “selfpedalling” cyclists.

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References

- Larsson, M. & Svensson, H. (2021). *Effekter av stadsmiljöavtalet: Utvärdering av försöksperioden 2015–2018*. Lund: K2 - Nationellt kunskapscentrum för kollektivtrafik. K2 Working Paper, 2021:10
- Oldenziel, R. & de la Bruhèze. (2011). Contested Spaces Bicycle Lanes in Urban Europe, 1900–1995. *Transfers* 1(2), pp. 29–49. doi: 10.3167/trans.2011.010203
- Region Skåne. (2023). *Så reser vi i Malmö stad*. Downloaded from: https://utveckling.skane.se/siteassets/publikationer/kommunrapporter-2023-rvu/sa-reser-vi-i-malmo-stad-rvu-2023.pdf
- Riksrevisionen. (2025). *Statens arbete med att förbättra förutsättningarna för cykeltrafiken*. Stockholm: Riksrevisionen.
- Trafikanalys. (2017). *Sänkt bashastighet i tätort*. Stockholm: Trafikanalys
- Trafikverket. (2024). Nationellt cykelbokslut 2023. Borlänge: Trafikverket

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