

Computational Methods in Urban Studies

*Week 5 : Space – You can't Build your Way out of
Congestion*

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Plan

1. **Theory | Contentious politics and planetary urbanization**
→ Why do people fight over space? Geographies of unevenness.
2. **Example | The highway debate in Switzerland (and elsewhere...)**
→ A voyage from pragmatic engineering to reflexive and social engineering.
3. **Policies | Motonormativity and unsustainable urban policies**
→ Against “spatialism” – the built environment is embedded within a society.
4. **Practice | Assisted qualitative research : on the Highway to R**
→ Web-scraping, automatic transcript & discourse analysis.



The Plot

- **Can you spot the difference?**

« The automobile is not only a mark of upward social mobility, it is truly a sign of individual liberation. It is a symbol of modernity that marks the individual's desire to break free from the group, to retain their personality, their pace, and the ability to go wherever they want, whenever they want, however they want. [...] It can be said that the automobile has transformed people's lives as well as the face of many nations. »

« Ever since I got into politics, I have been committed to a free country. And what better symbol of freedom than the car? When people drive, they feel free. Car allow us to go wherever we want and to transcend distances. They are the triumph of individuality. With a car, we are independent, which is a vital need. »



The Plot

- Can you spot the difference?

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Georges Pompidou
France's Prime Minister
53rd Salon de l'automobile (Paris)
13.10.1966



« Ever since I got into politics, I have been committed to a free **country**. And what better symbol of **freedom** than the car? When people drive, they feel **free**. Car allow us to go wherever we want and to **transcend** distances. They are the **triumph** of **individuality**. With a car, we are **independent**, which is a vital need. »



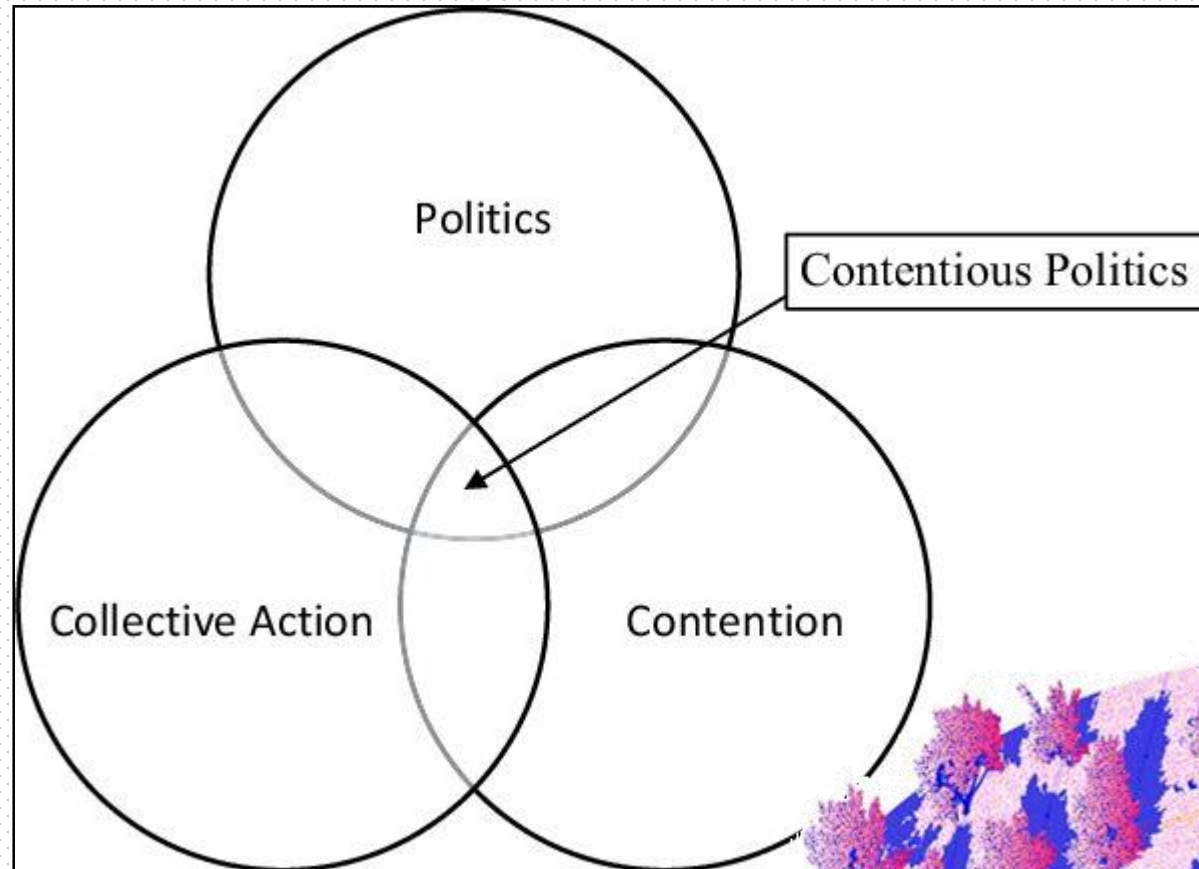
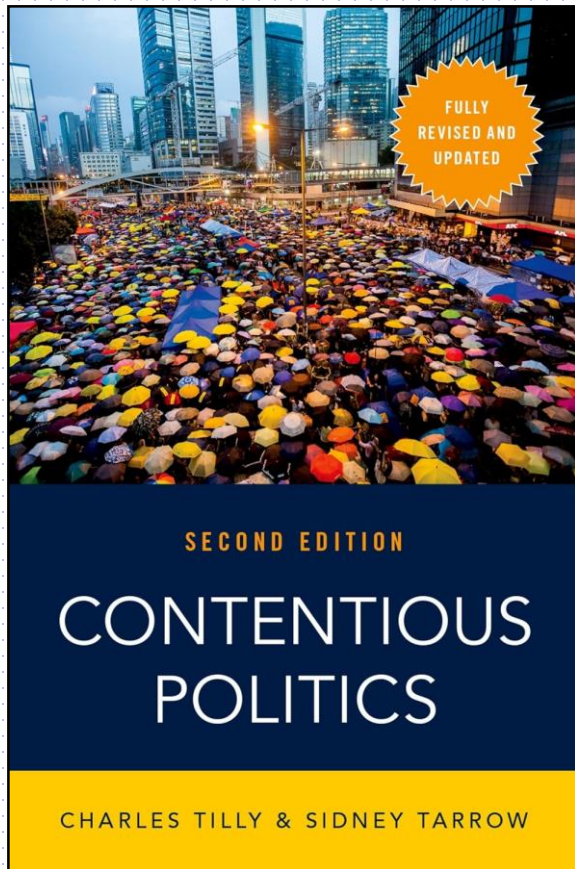
Albert Rösti
Swiss Minister of Transport
18th Symposium from UPSA
16.01.2024



1 : Geographies of Contentious Politics

- **Contentious politics and social movements**

réf.: Tilly & Tarrow (2015) ↓



1 : Geographies of Contentious Politics

- **Contentious politics and social movements**

- *Relational* = highlight how (groups of) individuals create networks and organize to defend opposing claims – interactions within the contentious.
- *Agonistic* = identify the structural power relations/struggles that these (groups of) individuals (do not) face – arena of the contentious.
- *Contextual* = understand how specific physical spaces, political systems and/or time periods shape the debate and are reshaped by the debate – opportunities through the contentious.



1 : Geographies of Contentious Politics

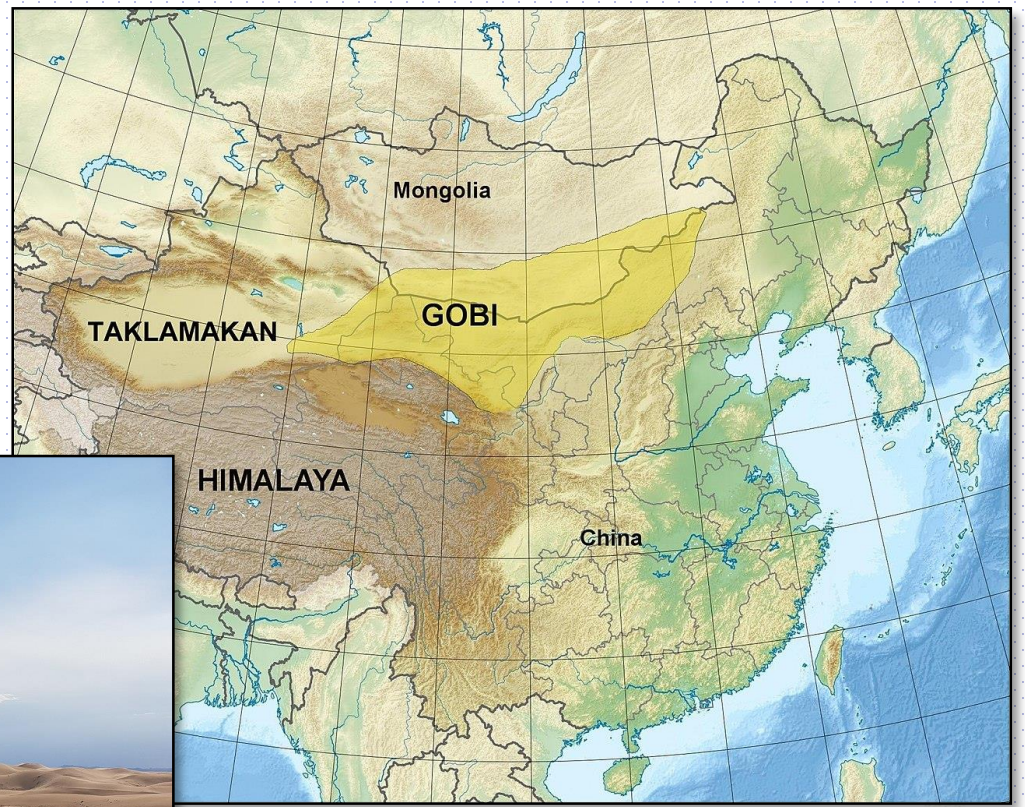
- **Contentious politics and social movements**

- “New” social movements are rooted in concerns about regaining autonomy and control over identities and culture (sexuality, environment and energy use, minorities, regionalism).
- Physical space can be the setting, the means, and the stake of social movements.
 - Topological urban studies (physical space vs. two others).
 - Theory of social practices (a material sustaining bundle of practices).
 - Theory of the habitus (acquired dispositions to and through physical space).
- Changing an infrastructure (transport, housing, energy, etc.) might come with uneven consequences and therefore potential resentment.



1 : Geographies of Contentious Politics

- Geographies of unevenness

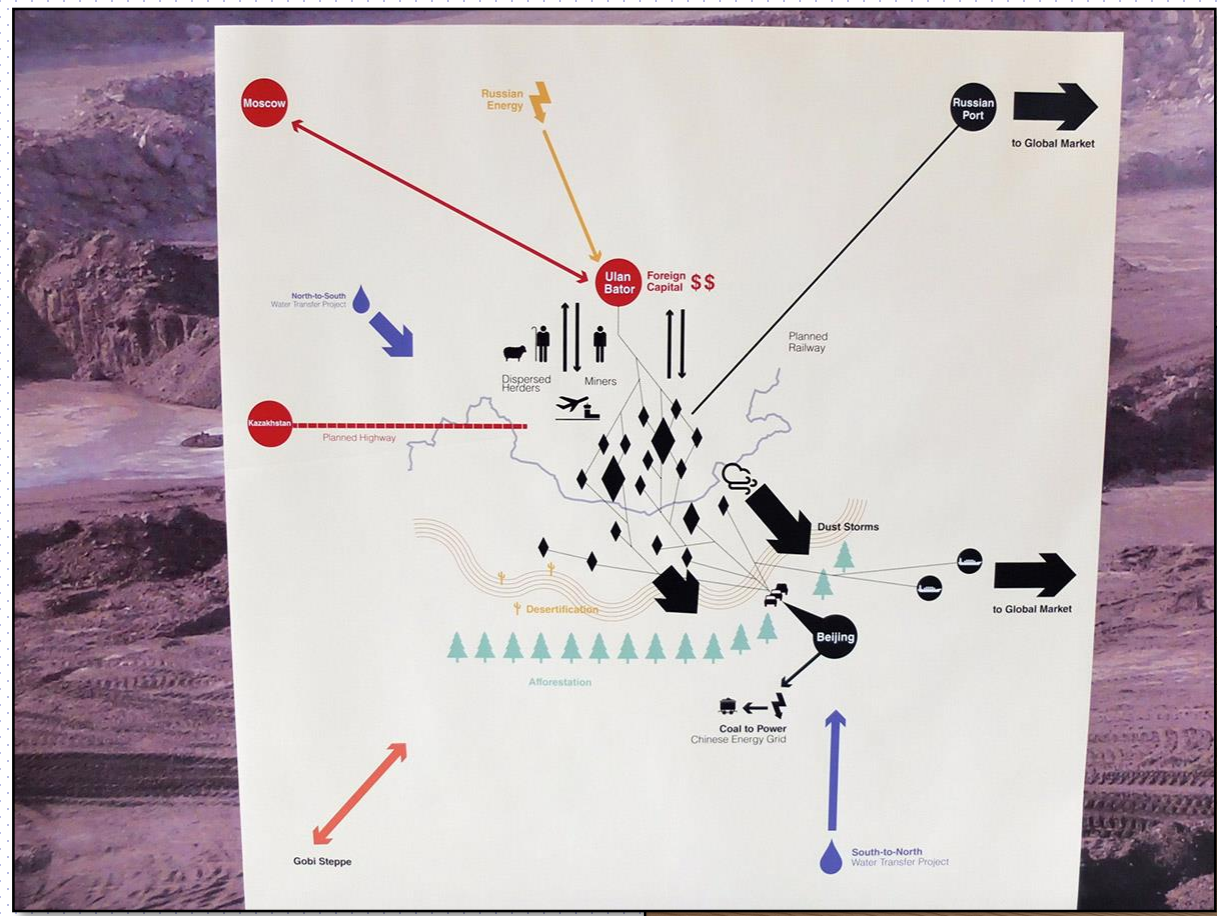


↓ *réf.: Wikipédia* →



1 : Geographies of Contentious Politics

- Geographies of unevenness



↑ ref.: [Society & Space](#)

1 : Geographies of Contentious Politics

- **Geographies of unevenness**

→ Some of the most prominent theses shared among prominent radical/critical/Marxist geographers...

1. Capitalism thrive on spatial differences (and produces new ones – *spatial fix*).
2. Urbanization concentrates power within city centers.
3. New technologies implode barriers to the flow of capital.
4. Urban cores exploit peripheries or rural areas.
5. The urban vs. rural divide is not operational.



1 : Geographies of Contentious Politics

- **Geographies of unevenness : why is it useful?**
 - Reframes the role of physical space as a mediator of social inequalities.
 - Enlarging a highway infrastructure declared of public interest...
 - ...depending for whom and what interest!
 - Challenges the depoliticization of space in top-down urban planning or policies.
 - Car dependence is not a technical problem, but a social problem (with environmental consequences).



2 : The Lausanne – Geneva highway debate

- **Context**

→ From a public radio broadcast to scientific engagement (or duty).

Interviewee: *As I mentioned earlier, I don't believe there's a correlation between the opening of a new lane and increased traffic...*

Interviewer: *But researchers say this, don't they?*

Interviewee: *No, no... No, these are people doing urban sociology. I listen to traffic engineers...*

– RTS, “Prise de terre. Autoroutes: stop ou encore ?”, 27.01.2024 ([link](#)).


→ What does this mean for the Mobilities, for social science, and for interdisciplinarity more broadly?



2 : The Lausanne – Geneva highway debate

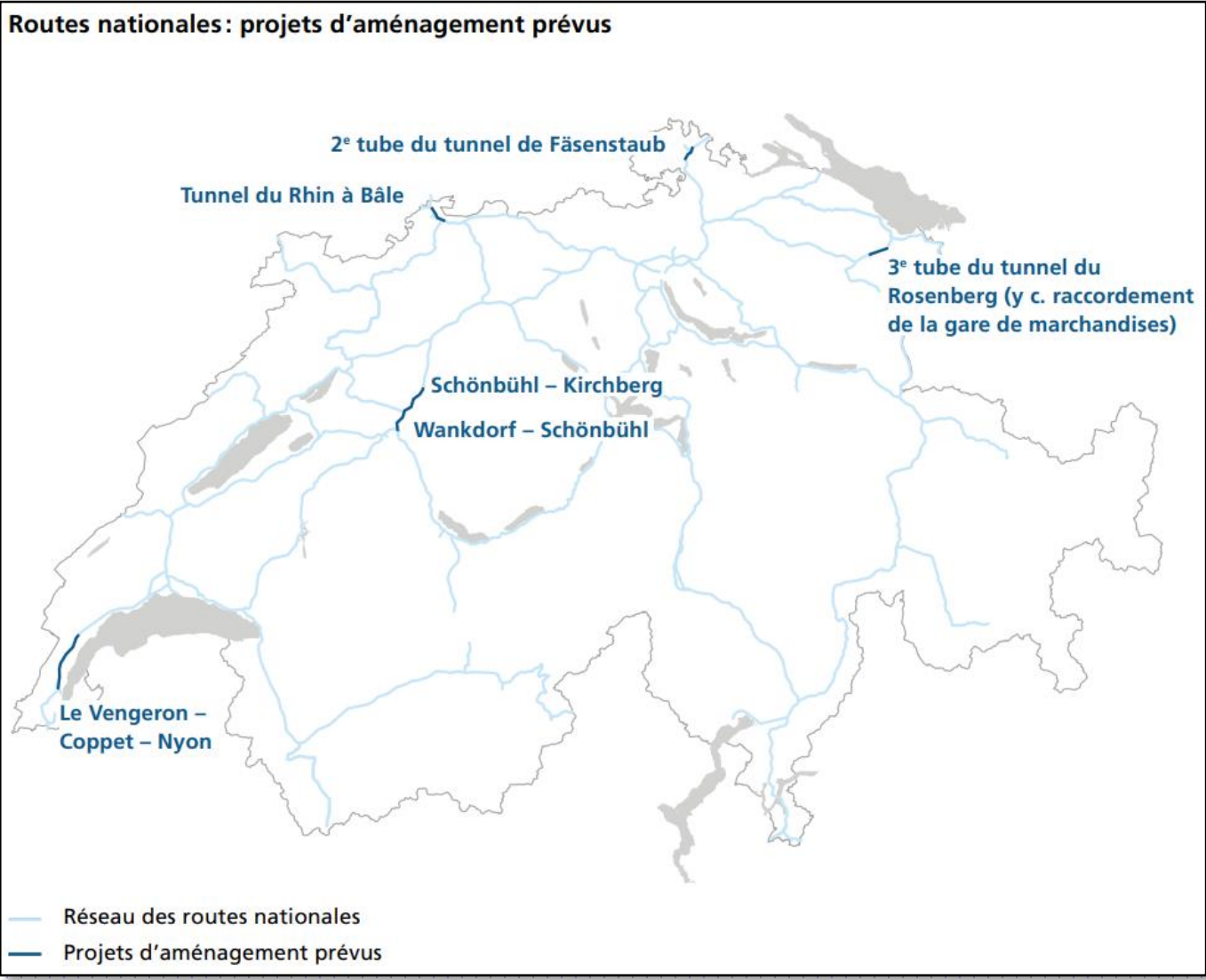
• Context

- On 29.09.2023, the Swiss Federal Assembly (parliament) & Council (government) decided to allocate 4.9bio CHF to increase the capacity of 6 existing highways in Switzerland.
- Based on official documentation, the arguments included:
 - The traffic on national highways doubled since 1990 (*demography*).
 - 48'000 hours of congestion (traffic jam) on the national highway network (*engineering*).
 - This is detrimental for the population's mobility and the Swiss economy (*competitiveness*).
 - Cars bypass congested places and use the secondary road network (*safety*).
- Around 50 organizations required a referendum (“direct” democracy) and triggered a popular vote by the Swiss population on 24.11.2024, primarily campaigning upon environmental arguments.

Votation populaire	24 novembre 2024
Premier objet	Arrêté fédéral sur l'étape d'aménagement 2023 des routes nationales
Deuxième objet	Modification du code des obligations (droit du bail : sous-location)
Troisième objet	Modification du code des obligations (droit du bail : résiliation pour besoin propre)
Quatrième objet	Modification de la loi fédérale sur l'assurance-maladie (financement uniforme des prestations)
 Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra	

réf.: Swiss Federal Government ↑

2 : The Lausanne – Geneva highway debate



← *réf.: swissvotes.ch*

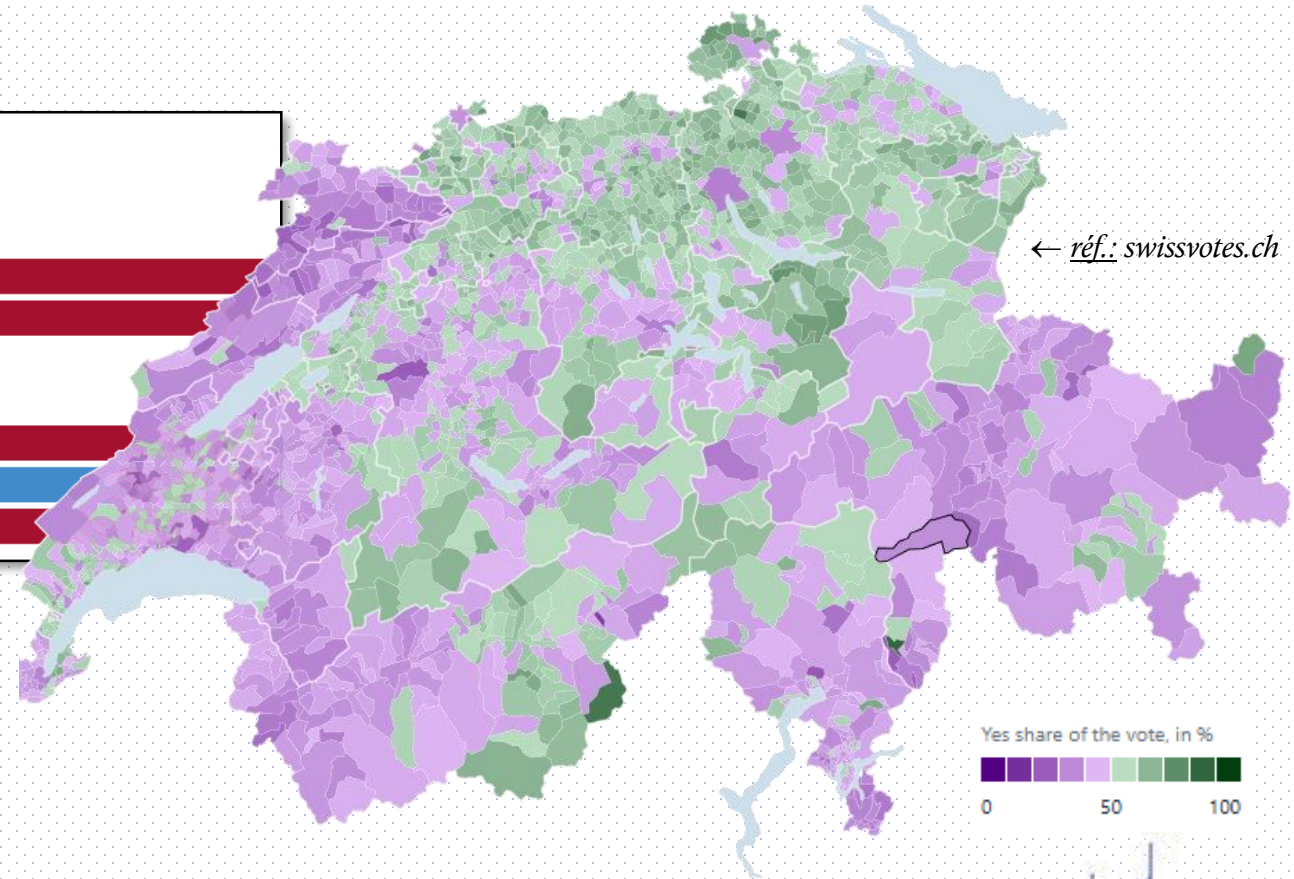
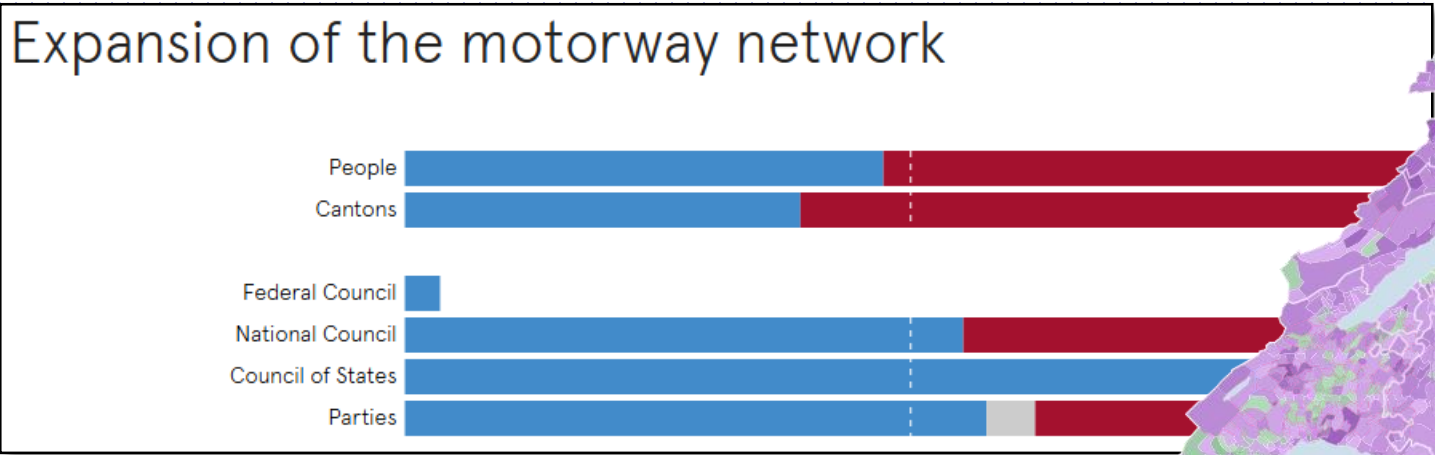


← *réf.: Swiss Federal Governement*



2 : The Lausanne – Geneva highway debate

↓ *réf.: swissvotes.ch*



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Campaign finances [Excel / Link \(in German\)](#)

Total receipts of 'yes' campaign: CHF 5,226,699, largest donors: TCS (Touring Club Schweiz); SGV (Schweizerischer Gewerbeverband)

Total receipts of 'no' campaign: CHF 4,510,148, largest donors: VCS (Verkehrs-Club der Schweiz); umverkehrR



2 : The Lausanne – Geneva highway debate

- **Investigating the arguments: Capacity**
 - *“The population’s continuous increase asks for new lanes to accommodate future traffic.”*
 - Pragmatic engineering:
 - The catch:
 - Social engineering:
 - Policy implication:



2 : The Lausanne – Geneva highway debate

- **Investigating the arguments: Capacity**

- *“The population’s continuous increase asks for new lanes to accommodate future traffic.”*
- Pragmatic engineering: This argument is rooted in the “predict and provide” tradition of urban planning.
- The catch: Traffic models struggle to account for the induced traffic phenomenon.
- Social engineering: Car dependent individuals & spaces will suffer more from induced traffic.
- Policy implication: Urban planning lacks long term vision where automobility is not dominant anymore.



2 : The Lausanne – Geneva highway debate

- **Investigating the arguments: Congestion**
 - *“Individuals lose too much time in traffic jam and this is costly for the economy.”*
 - Pragmatic engineering:
 - The catch:
 - Social engineering:
 - Policy implication:



2 : The Lausanne – Geneva highway debate

- **Investigating the arguments: Congestion**

→ *“Individuals lose too much time in traffic jam and this is costly for the economy.”*

→ Pragmatic engineering: This argument assumes that “congestion” is an engineering problem that can be solved (optimized).

→ The catch: Congestion is a “natural” result of economic attractiveness and urbanization (fundamental law of traffic congestion).

→ Social engineering: Promising uncongested (national) roads in dense urban environments such as Switzerland is delusional and a political manoeuver to maintain car dependence.

→ Policy implication: Urban planning needs to start understanding congestion as a sign of “saturation” rather than a mathematical problem to optimize.



2 : The Lausanne – Geneva highway debate

- **Investigating the arguments: Multimodality**
 - *“We shouldn’t oppose transport modes and aim at multimodality.”*
 - Pragmatic engineering:
 - The catch:
 - Social engineering:
 - Policy implication:



2 : The Lausanne – Geneva highway debate

- **Investigating the arguments: Multimodality**

→ *“We shouldn’t oppose transportation modes and aim at multimodality.”*

→ Pragmatic engineering: Each transport mode serve a specific purpose and can be combined for seamless journeys.

→ The catch: The “choice set” of transportation modes is individual specific and the car continues to be a “natural” choice (habitus).

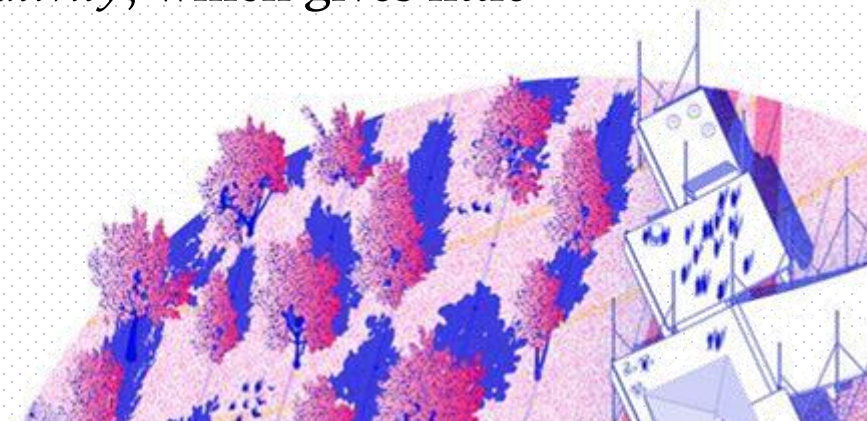
→ Social engineering: Multimodality (or combining modes in general) is a privilege of middle-to-upper class individuals.

→ Policy implication: Infrastructures promoting alternatives to the (individual) car have to catch up with decades of promotion of automobility.



2 : The Lausanne – Geneva highway debate

- **Take home messages for urban and transportation planning**
 - While transportation engineering is indispensable, this discipline needs to reframe some of its foundational concepts (e.g., capacity, congestion, mode choice) in more sustainable and inclusive way (public interest).
 - Putting new highway infrastructures into question **is not** against car dependence.
 - SPT and theory of habitus taught us that moving in space is not only about transportation infrastructures... The “one (transportation) problem = one (transportation) solution” framework needs to be updated.
 - Traditional transportation planning is imbued with *mononormativity*, which gives little room to integrate sustainable goals into the equation.



3 : Unsustainable motonormativity



↑ *réf.: The Fourth Revolution*

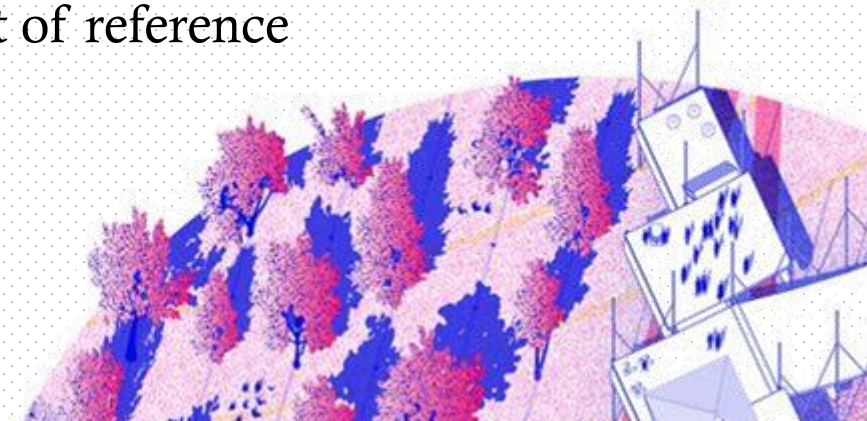


3 : Unsustainable motonormativity

- **What is motonormativity?**

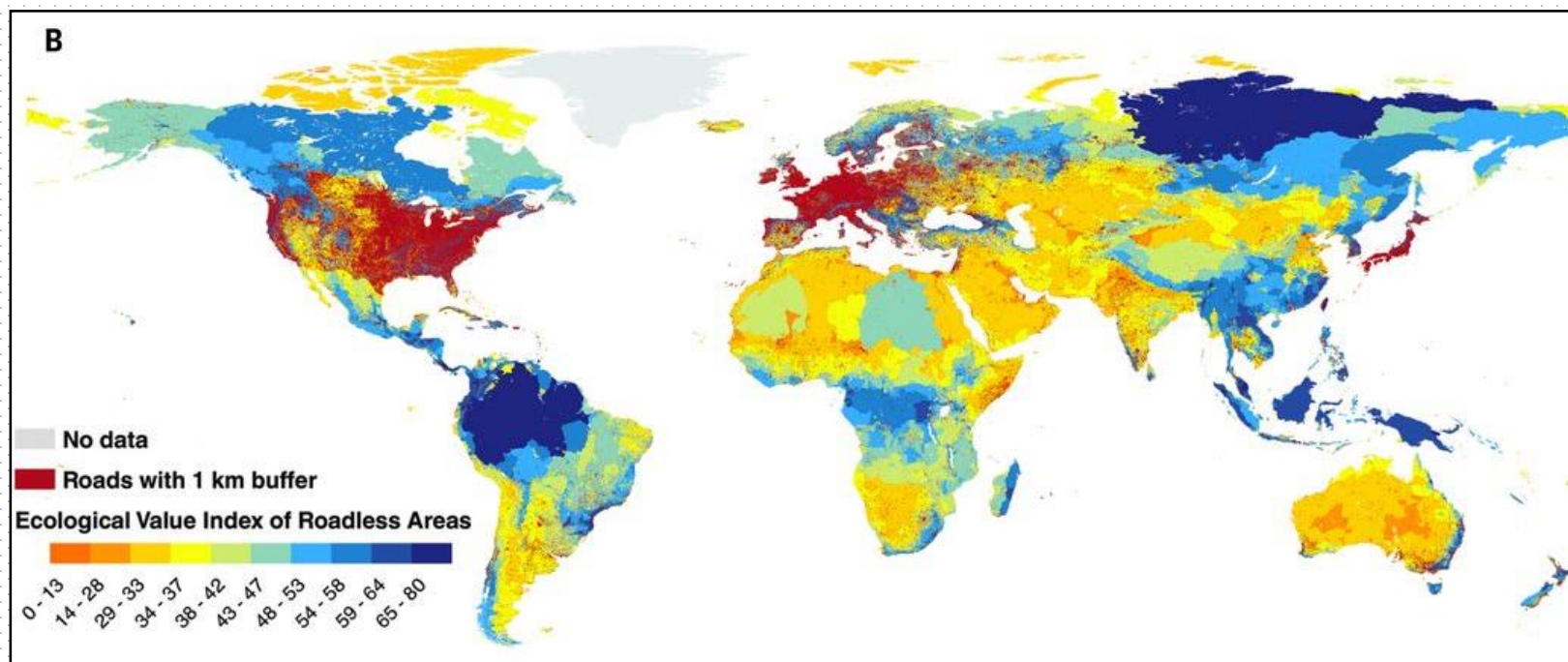
“Motonormativity leads people to use different standards when judging motor transport than when judging other topics, and this might prevent people and institutions making rational decisions about motoring and its various harms.” (Walker & te Brömmelstroet, 2025)

- Motonormativity is the embedded result of social and cultural values that cause individuals to rationalize the normality of automobility while considering alternative transport modes and networks unusual.
- Individual car use remains the standard and is used as a point of reference against which other options are benchmarked.



3 : Unsustainable motonormativity

- **Motonormativity infuses into the physical space...**
 - Cars need roads – a lot of them – and roads need raw materials.
 - Cement account for 7-8% of global GHG / concrete represents one third of the built mass.
 - The two circles of wastes and of the asphalt.
 - Cars remain the defining transport mode in the production of the built environment (see “covid lanes” for social contentious).



← réf.: [Ibisch et al. \(2016\)](#)

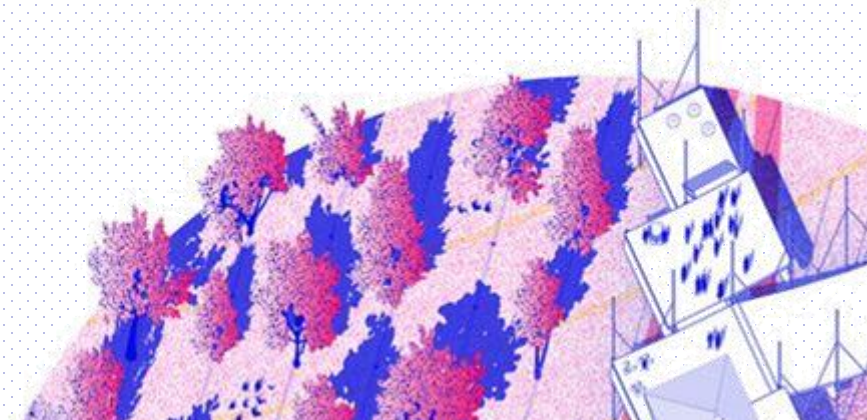


3 : Unsustainable motonormativity

- **(Car) transportation infrastructures: capitalized**
 - Material extraction is mostly directed at existing road infrastructures maintenance.
 - Highways are considered as an invested *capital* that we need to take care of.
 - Life cycle assessment is crucial to avoid naturalizing negative externalities of road infrastructure.



← réf.: Reddit



3 : Unsustainable motonormativity

- **(Car) transportation infrastructures: decontextualized**
 - (Transportation and civil) engineering has made it possible to build roads anywhere.
 - Highways are *fortress* dedicated to fluidity that ignore its surroundings.
 - (Re)embedding car infrastructures within their social, spatial, and biological milieu is needed.



So much meaning in blocking I-75 in this place - the highway construction cut right through the historic black neighborhood of the West End. #GeorgeFloyd #Cincinnati

↑ *réf.: X/Twitter*

← *réf.: Walter P. Reuther*

3 : Unsustainable motonormativity

- **(Car) transportation infrastructures: depoliticized**
 - Technical knowledge makes decisions about infrastructures obvious and a matter of experts.
 - The result of the ballot is evidence that the Swiss authorities were not anticipating a political *debate*.
 - Automobiles are only a symptom of the existing infrastructures – we need to question the (re)production of space.

*“Each time, these infrastructures appear as ‘the means by which a state offers representations to its citizen and asks the latter to accept them as **objective facts**’ (Larkin, 2013). It is to deconstruct the legitimacy of these materialized evidences fostering motonormativity that some groups engage in **contentious politics**, mobilizing multiple registers, practices, and symbols to criticize the social domination exercised by these ‘**equipment of powers**’ (Fourquet and Murard, 1973)”. (Demoli & Lannoy, 2019)*

Conclusion

- **Wrapping up**

- Car infrastructures are a contentious topic that is contested in and through geographies of unevenness.
- Current transportation planning discourse and engineering lacks reflexive thinking and a care for sociospatial inequalities.
- Motonormativity prevents us from designing sustainable transportation policies.
- How much does transportation issues align with existing divides within the Swiss population?
Who are the promoters of the motonormative discourse in the public debate?

