



Contested approaches to uncertain futures in Swedish national transport policy and planning

Knowledge perspectives and practices matter

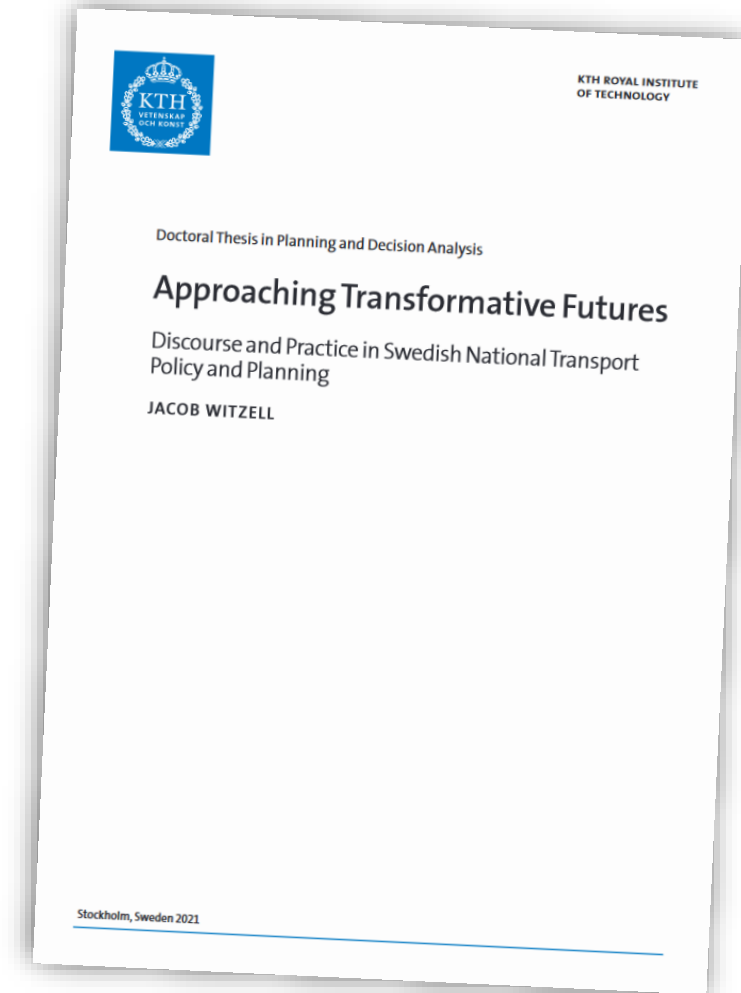
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Contested approaches to uncertainty

- Current debate in Swedish transport planning over the possibility to affect future travel demand
- Different planning tools and knowledge perspectives provide different understandings
- Illustrated by two recent Swedish examples:
 - The national investment plan 2018-2029
 - An inter-agency strategic plan for achieving a fossil-free transport system
- Based on two articles in my dissertation (2021)



Research approach

How knowledge perspectives and methods of analysis affect exploration of uncertainty and future pathways in Swedish national transport policy and planning

- A social constructivist approach: knowledge – and tools which construct knowledge – are specific for a certain time and place
- Planning is characterized by conflicts over what is considered 'relevant', 'true' and 'realistic' knowledge
- Content analysis of planning documents and government instructions
- Interviews with involved planners

National infrastructure planning

12-year national transport infrastructure investment plan

- A multi-modal perspective
- Prepared by the Swedish Transport Administration, following government instructions

Travel demand forecasting and cost-benefit analysis are central tools

- Emerged in the 20th century as tools to accommodate expected increases in road travel, and prioritize among alternative investments ('predict-and-provide')
 - More and faster travel considered central societal benefits.
 - Mobility in focus, rather than (broader understandings of) accessibility
- Current environmental and social challenges have led to introduction of *complementary* planning practices, but the dominance of forecasting and CBA has not been challenged

The national "base forecast"

Normally, only one single forecast of future national travel demand is prepared.

- It is based on (1) historic cause-effect relationships affecting travel demand, and (2) assumptions of how certain variables will develop in years ahead.
- The forecast should only consider already decided policy – thereby it is predictive, conservative.
- Handling of uncertainty is limited to sensitivity analyses of certain variables in the model.
- The possibility of *different* futures (with different consequences) is not explored

The "base forecast" carry wide influence over:

- The overarching understanding of the future development of the transport system
- Planning, dimensioning, and prioritization of investments – and the associated benefits to society
- Regional and local urban and transport planning, as local targets and plans should accommodate the forecast

'Transport efficient society'

- Swedish objective: 70 % reduction in greenhouse gas emissions by 2030 (compared to 2010), no net emissions in 2045
- Climate mitigation policy in transport - three categories of measures:
 - Energy-efficient vehicles
 - Fossil-free fuels
 - Increased transport efficiency } *mirrors opportunities of planning and proactively affect travel demand, but reflects complex social phenomena that are less straightforward to model*
- No unitary definition, but regards a broad set of policy measures, transport and land-use planning, localization of developments, etc.
 - Similar to "avoid, shift, improve"
- The need for increased 'transport efficiency' is currently debated

The national investment plan 2018-2029

**An example of avoiding exploration of plausible futures and
the influence of dominant forecasting practice**

The planning process is focused on *one* forecast, grounded in rigid modelling

- In addition to the 'base prognosis', the government requested a 'climate prognosis' which should consider *"measures to mitigate climate emissions in a cost-efficient way"*
 - The forecasting model was deemed too rigid – could not provide answer in time (lack of time and detailed 'data', models not apt to handle larger system changes)
 - A collaborative back-casting scenario focusing on affecting travel demand and achieving modal shift was developed – only to be excluded from the plan
 - Argument: lack of 'validated' cause-effect statistics needed for conventional demand models, and no explicit political target to decrease future road travel
 - STA concluded that a climate scenario based on economic policy measures + extensive introduction of biofuels *could* be consistent with the conventional "base prognosis"
 - (1) unchanged driving cost > (2) unchanged travel demand → unchanged plan priorities
- *Uncertain assumptions deviating from the base forecast were rejected, while uncertainties aligning with the "base forecast" were accepted*

On the influence and inflexibility of forecasting:

”For the forecast [...] a very formalistic structure has been established. [...] It has gained quite large influence over *what kind of knowledge* that can be presented, *and when.*” (Respondent B)

”When the [political] directives arrive, we have normally carried out most of the analyses.” (Respondent C)

On forecasting as defining 'valid' knowledge:

”It was a burning issue to question those types of [transport efficiency] measures – both how likely it was that they would be implemented, if they could be so far-reaching [as described], and their effects. [...] That work had been carried out rather isolated from the forecasting work. [...] The thoughts had never been verified in any form of model.” (Respondent B)

”It is much wishful thinking” (Respondent C)

Climate impact of infrastructure portrayed as irrelevant

Recurring statements that additional infrastructure has insignificant climate impact

- Aggregating emission of individual investments into total sum hides and evens out (negative/positive) impacts
- *Plan total: -1%, 'Bypass Stockholm': +1%, Urban sustainability measures: -0,7%*

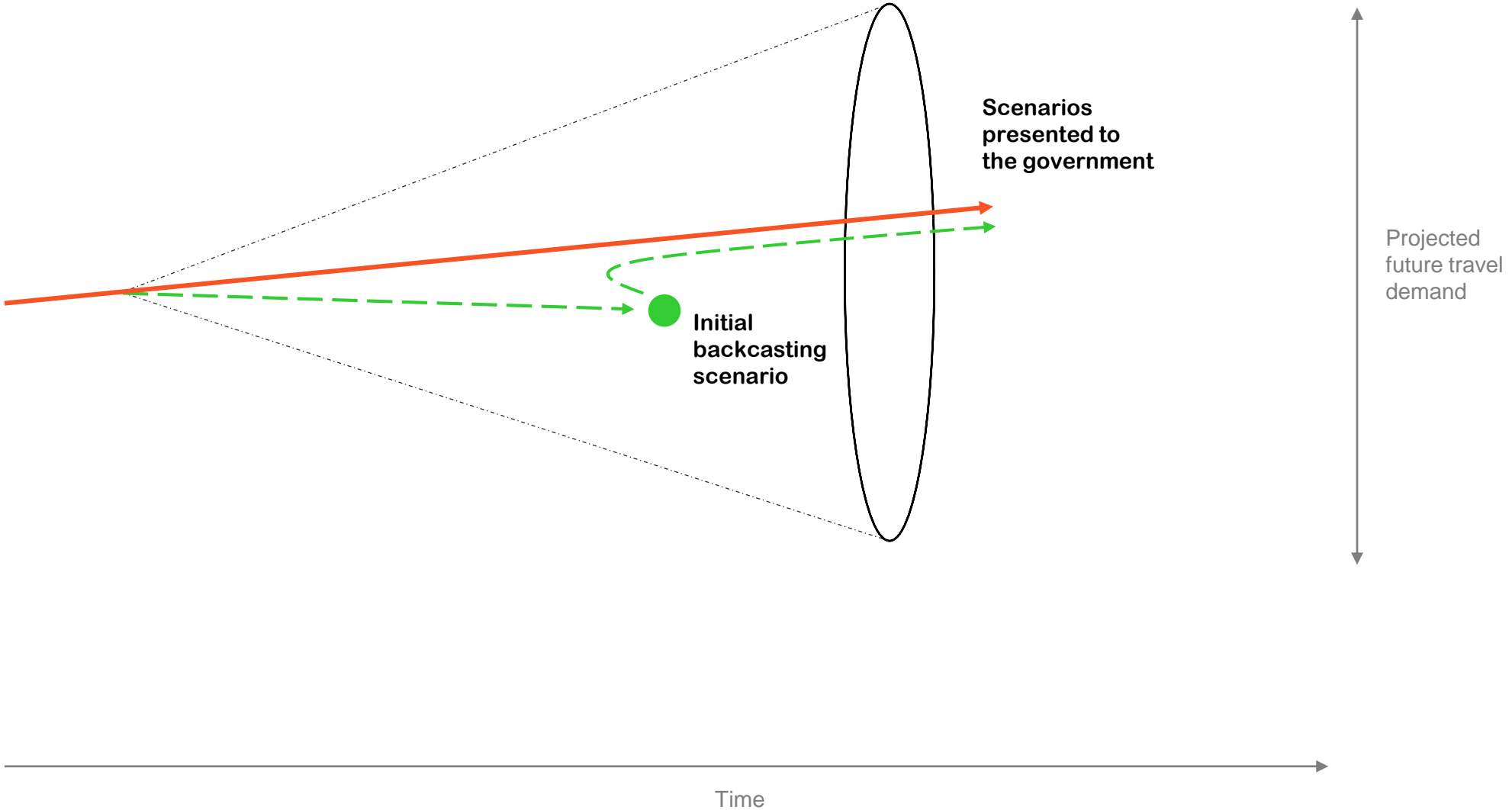
Delimitations in time and space portrays alternative measures as irrelevant

- Measures for 'transport efficiency' are deemed efficient on local and regional level, but "insignificant" at aggregate national level
- Potentials are acknowledged in a longer time perspective, but not during the 12-year plan perspective

→ *Alternative measures are dismissed by reference to the modelled understanding of the transport system: aggregation, macro-focus, limited time perspective*

Example of how forecasting practices shape understandings and arguments:

”Our macro projections have shown that [new infrastructure] has very little to do with climate mitigation and traffic flows [...] It is like scratching the surface of the gigantic transport apparatus. One cannot invest to achieve changes regarding climate” (Respondent C)



Reflections

- Established forecasting practices contributed to sustaining "status quo" of expecting continued strong increases in road traffic by:
 - 1) Lacking capacity/relevance to explore deviating pathways
(Not developed to handle trend-breaking futures)
 - 2) Motivating dismissal of alternative knowledge perspectives and methods of analysis
(Setting a standard of 'valid', relevant knowledge)
 - 3) Legitimizing this lack of alternative future pathways and measures
(Portraying infrastructure investments as insignificant)
- A 'catch 22': measures are dismissed > not carried out > knowledge is not developed
 - The specific model understanding of the transport system becomes self-confirming
- Though: within the Swedish Transport Administration there are other perspectives, but those are weakly mirrored in strategic, long-term planning

A strategic plan to achieve a fossile-free transport system

**An example of how the scope of planning is broadened when
uncertainty is acknowledged as a basic condition of planning**

An inter-agency commission (2016-2020)

- Task: to suggest legislation and policy measures to support climate mitigation
- Independent from the established national transport planning
- The Swedish Energy Agency hosting the commission
- Strived for co-ownership of process and outcomes with five other national agencies working with transport, energy, environment and planning
 - Six general directors deliberated on formulations and signed central documents
- Participants: a process characterized by joint dialogue and learning
- Mutual dependency between
 - How the work was organized
 - Which practices and knowledge perspectives that were acknowledged, and...
 - How potentials of 'transport efficiency' measures were understood

Development of a joint approach to uncertain futures

- Limited time to achieve transformation and deep uncertainty → need to spread risks
 - Consider broad categories of measures targeted at vehicles + fuels + 'transport efficiency'
- Deep uncertainty and unknowability associated with future developments was acknowledged as a foundational premise
- An approach to assessment was developed which reflected the conditions at hand:
 - Uncertainty and unknowability motivates continuous assessments
 - Preliminary assessments based on professional judgment were accepted...
 - ...in combination with continuous monitoring, evaluation, and adjustment as more information becomes available

On uncertainty as foundational condition, and how it demands flexibility:

”We discussed that precisely *due* to the uncertain surrounding world, it is important to work with all three ’legs’ [of vehicles, fuels and ’transport efficiency’]; we need to work on several frontiers. ...

changes in the surrounding world may make certain measures obsolete. Consequently, we included a continuous external analysis [as part of the commission], to be able to adjust the direction.” (Respondent 6)

On the need for successive evaluation and reassessment:

”There are very large knowledge gaps. ... We therefore expressed that this should be [evaluated] continuously, as it is not possible to fully answer questions like this beforehand.”

(Respondent 4)

A brief comparion and conclusion

Different approaches to future uncertainty

The national investment plan

Knowledge perspectives beyond transport modelling and economics marginalized

Uncertainty and unknowability was avoided

Knowledge on effects required to be available beforehand – 'catch 22'

The future is (generally) portrayed as a continuation of historic developments

Weak perception of planning's potential influence (beyond economic policy)

Collaboration among national agencies

Broader professional knowledge perspectives and experiences were provided room

Uncertainty acknowledged as basic condition of planning

Acceptance of preliminary expert assessments, *combined with* successive evaluation and reassessment

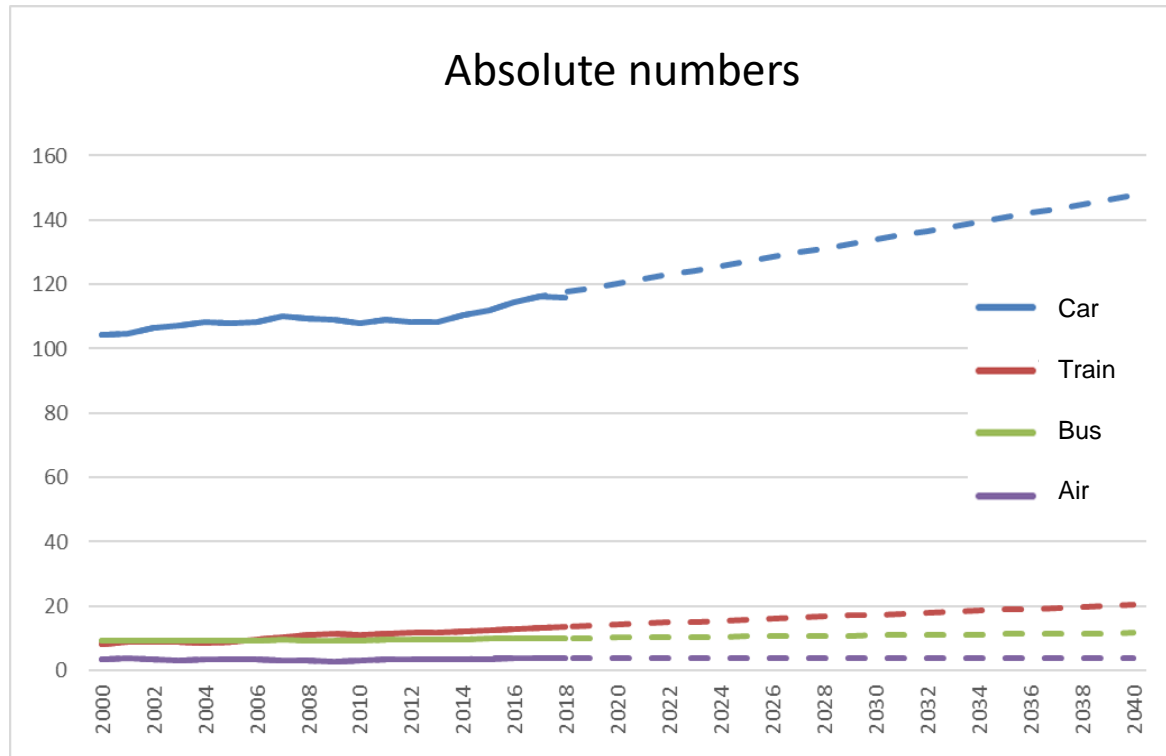
The future is portrayed as an uncertain, changing process with a great span of potential pathways

Stronger perception of planning's potential influence

The political importance of planning practices

- Dominant practices carry power by defining which future pathways are considered
 - The current forecasting practice in Sweden has conserving, self-confirming characteristics
 - Political choices are concealed as uncertainty is not explored and alternatives marginalized
- No practice which makes claims to describe the future is value neutral
- Previous research: changes in policy requires a related change in planning tools
- In the light of today's societal challenges, and the unavoidable degree of uncertainty and unknowability in the transport system, there might be time ask:
 - Which knowledge helps society to grasp and critically debate what a 'desirable' future development of the transport system would look like?
 - How can broader knowledges and yet 'unproven' measures be provided room?
 - Does a re-politicized democratic discussion over 'desirable' futures require several future scenarios, and several plan proposals that are evaluated against the scenarios...
 - ...to highlight goal conflicts, distribution of effects, and allow informed choices to be made?

Epilogue: The 'base prognosis' 2020



- Car travel increase 27 % in the period 2017 - 2040.
- Climate mitigation assumed to be achieved by electrification + bio fuels (and, if needed, strong increases in fuel price; all measures easy to model...)
- Potentials of affecting travel behaviors or achieving modal shift (more than marginally) explicitly dismissed