Knowledge claims in planning documents on land use and transport infrastructure impacts

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based on the article:
Outcomes matter – not only planning processes

• The outcome of urban development is important – planners need to develop solutions that can contribute to realize societal goals

• Planners must be able to assess whether or not a proposed solution will be beneficial or harmful, judged against relevant goals

• However, following the ’communicative turn’, planning scholars have since the 1980s been preoccupied with planning processes rather than the outcomes of spatial planning

• An ‘ontological turn’ underway – as has been claimed in several other social sciences?
State-of-the-art knowledge

• Our conception of ‘state-of-the-art’ knowledge is based on an acknowledgment that knowledge is a social product. This socially constructed knowledge is fallible, but not every knowledge claim is equally fallible.

• The paper is based on a view combining ontological realism, epistemological relativism and judgmental rationalism.

• In order to identify the most credible knowledge claims in situations where there are divergent conclusions, emphasis was laid on criteria such as:
  – theoretical plausibility
  – consistency with qualitative research on rationales for transport behavior
  – control for other relevant factors of influence
  – non-inclusion of irrelevant control variables
  – the type of publication in which the knowledge claim has been put forth.

• Special attention has been paid to studies in the Nordic countries.
The case cities
(approximate population of each city’s continuous urban area in parentheses)

• Aarhus, Denmark (250,000)
• Helsingborg, Sweden (100,000)
• Trondheim, Norway (160,000)

In each of the three case cities, policy goals of reducing greenhouse gas emissions and limiting the growth in car traffic have been formulated
Density: ‘state-of-the-art’

• Car usage is influenced primarily by the density of the city as a whole

• Also some influence of density at neighborhood level (residential areas, workplace districts, etc.), but less than that of the density of the city as a whole
Knowledge claims on density

• ‘Peripheral development results in a higher dependency on motorized transport. Densification is a measure to deal with growth in a transport-efficient way.’ (Municipality of Trondheim, 2008c)

• ‘With a more dense and compressed city, accessibility to destinations can be improved. Important service facilities are available within walking or biking distance, resulting in further reduced car dependency and increased levels of physical exercise.’ (Municipality of Helsingborg, 2010b)

• ‘… a number of planning initiatives … are to contribute to make Aarhus CO\textsubscript{2} neutral in 2030. For example, the establishment of new residential areas is related to the goal of reducing CO\textsubscript{2} emissions: the new urban district at Lisbjerg\textsuperscript{1} will be an example of a compact and integrated district with effective public transport and district heating supply – all of which are decisive physical conditions for reducing CO\textsubscript{2} emissions.’ (Municipality of Aarhus, 2009)

\textsuperscript{1}This district is located approximately 8 km away from the city center of Århus, disconnected from the existing urbanized area.
Residential location: ‘state-of-the-art’

- Higher shares of non-motorized travel and lower shares of car travel among inner-city residents
- No clear center-periphery gradient for the use of public transport. Suburbanites living close to high-standard transit have the highest public transport usage
- Also some effects of the location of the dwelling relative to lower-order centers, but in the Nordic countries these effects are generally smaller than those of location relative to the main city center
Knowledge claims on residential location

• The plans of Trondheim and Helsinki do not address travel impacts of residential location directly, but statements in these plans about the transport-minimizing effect of densification can be interpreted to logically imply an acknowledgement of the higher needs for transportation when living at peripheral locations, since new greenfield developmental areas will most often be located further away from the city center than areas were densification takes place.

• In Aarhus’ planning documents (particularly the EIA of the municipal plan) it is recognized that residential location exerts an important influence on travel behavior,

• But the interpretation of this seems in a way to be sliding from some general statements in the EIA report emphasizing the influence of the location of dwellings relative to the main city center, to statements in the municipal plan where the location of the proposed new residential areas is mainly discussed in terms of their proximity to lower-order centers and proposed light rail stations.
Aarhus’ municipal plan on the CO₂ impacts of residential location:

‘… a number of planning initiatives … are to contribute to make Aarhus CO₂ neutral in 2030. For example, the establishment of new residential areas is related to the goal of reducing CO₂ emissions: the new urban district at Lisbjerg will be an example of a compact and integrated district with effective public transport and district heating supply – all of which are decisive physical conditions for reducing CO₂ emissions.’
Workplace location: ‘state-of-the-art’

- In several Nordic cities, **lower proportions** of employees have been found to commute **by car** and higher shares to travel by public transit, bicycle or by foot to workplaces located **in the inner-city** than to suburban jobsites.

- Typically, 80-90% commute by car to workplaces at the urban fringe, compared to 20% in the downtown areas of big cities (1 mill or more) and 35-60% in the central parts of medium-sized cities (0.1-0.3 mill.).

- No clear intra-urban center-periphery gradient for commuting **distances**
Knowledge claims on workplace location

• In the planning documents of Trondheim, the location of workplaces not only relative to public transport opportunities, but also in relation to the overall center structure of the city is mentioned as crucial. The planning documents also emphasize the importance of the availability of parking opportunities at the workplace.

• In Helsingborg and Aarhus, only the ‘carrot’ effect of high public transport accessibility is mentioned.

• In the Trondheim planning documents, this ‘carrot’ as well as the ‘sticks’ represented by the worse conditions for driving in the city center are emphasized.
Neighborhood diversity and design: ‘state-of-the-art’

- Mix of jobs, dwellings and services favorable in inner-city areas
- Mix of suburban dwellings with local service favorable – but not with specialized jobs
- Little or no effect found in the Nordic countries of the design of the local street network (grid-shaped, curvilinear, etc.)
Knowledge claims on neighborhood diversity and design

• The municipal plan of **Aarhus** expresses a strong faith in the possibility of reducing the need for transport and increasing the shares of environmentally friendly travel modes through mixed land use:

  ‘the development of new townships shall aim at creating local communities that are, to some extent, self-sufficient with certain functions, such as stores for daily necessities, and local workplaces. This can reduce the need for transport and influence on the modal split, and hence reduce the environmental loads’ (Municipality of Aarhus 2009).

• **In Helsingborg**, combined development of housing and jobs is mentioned first and foremost as a feature of the planned development around the three main regional public transport nodes

• **Trondheim** emphasizes neither mixed-use nor jobs-housing balance in its planning documents, and no knowledge claims are thus made about the alleged transport benefits of such land use principles

• None of the cities makes any claim about effects of local street design
Road capacity increase: ‘state-of-the-art’
Knowledge claims on road capacity increase

• The impacts of road capacity increase on travel behavior and traffic growth are downplayed in the planning documents of all three cities.

• For example, in Helsingborg it is stated that the combined effect of widening of one of the main roads from two lanes into an ‘urban motorway’ of four lanes, the construction of a new harbor access road, and allowing car traffic in a street presently used only by public and non-motorized traffic will be a traffic increase only from 100,500 to 101,000 cars (Municipality of Helsingborg, 2007).

• In Aarhus, the EIA of the municipal plan mentions the traffic-generating effect of road capacity increase but does not include this as an impact, since it is partly considered to be due to ‘background’ traffic growth.

• In Trondheim, it stated (by the Highway Directorate) that a new motorway will improve speeds not only for car traffic but also for buses and hence not affect the modal split to any extent worth mentioning.

• However, the Municipal council of Trondheim looks differently on this:
  ‘New roads will together lead to a considerably increased capacity of the road network in Trondheim. The Municipal Council intends to implement measures to ensure that this capacity increase does not result in a corresponding increase in car traffic and its related pollution.’ (Municipality of Trondheim, 2008)
Old planning myths still alive

• In some of the plans, **proximity to public transport stops** is emphasized rather than **proximity to inner-city concentrations of jobs and other facilities**, and density is discussed at a **neighborhood scale** rather than at a **city scale**.

• The planning documents often ignore **the traffic-generating effect of increased road capacity** (but the competition between car and public transport is recognized in the impact assessments of public transport improvement).

• These claims are used in support of more decentralized land use pattern and considerable road development.

• The ‘planning myths’ encountered in the case cities **can be retrieved in current discourses** among land use and transport planners, for example
  – on websites about ‘smart growth’, ‘transit-oriented development’ and ‘new urbanism’
  – in policy documents about ‘polycentricity’
  – in transport modeling practice
Knowledge of outcomes of spatial solution matters!

• Since the likelihood of achieving sustainability goals relies heavily on whether the measures chosen are productive or counter-productive, knowledge obviously matters.

• Knowledge about the impacts of different policies is also necessary to understand what is at stake in conflicts between different interest groups about spatial urban development.

• A reinvigorated research interest in the outcomes of spatial planning should be welcomed in planning research and practice – but of course without disregarding the insights brought by process-oriented planning research.