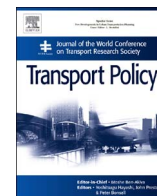




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## Transport costs seen through the lens of residential self-selection and mobility biographies

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### ABSTRACT

This position paper places transport costs in a longitudinal, life-course oriented perspective. It argues that travel behaviour and the choice of residence may be considered two intertwined decision frameworks made by individuals/households that in turn can be understood within the broader context of mobility biographies. The interrelations between mobility biographies and transport costs are on multiple levels. Firstly, they refer to different types of cost, including user costs, costs for transport provision and external costs. Secondly, mobility biographies and, specifically, residential self-selection may be affected by transport (user) costs, while at the same time they work as input factors for transport costs on all cost levels. The paper outlines these thoughts and discusses the consequences for spatial planning and transport planning. It suggests a strong planning system in which guidelines for travel and residential choice are set by public planning organisations rather than by the market. This is likely to help spare future households increasing transport costs, and costs for transport provision and external costs will be reduced as well. Further, it argues for a shift away from the happiness debate and towards the notion of dignity in transport studies.

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### 1. Introduction

Two related research fields have emerged in transport studies in the past fifteen years: the role of residential self-selection in travel behaviour, and the mobility biographies approach to travel. Both of these fields stress the idea of a longitudinal, process-oriented microscopic perspective on travel, even though many empirical studies on the residential self-selection/travel link are realised in a cross-sectional fashion. Longitudinal perspectives have also been used to study transport costs, e.g. in terms of the accumulated life cycle costs of infrastructure (including investment and maintenance) or external costs that may need to be covered some time in the future. Yet, links between people's mobility biographies and transport costs have to date hardly been addressed.

This paper posits that the study of transport costs can benefit from mobility biographies (Lanzendorf, 2003; Chatterjee and Scheiner, 2015; Muggenburg et al., 2015) and residential self-selection (RSS) studies (Handy et al., 2005; Cao et al., 2007a, 2007b; Scheiner and Holz-Rau, 2007; Chatman, 2009; Bohte, 2010), in that these approaches help understanding of the long-term accumulation, stabilisation and self-reinforcement of transport costs, and help ascribe responsibility for transport costs to those who cause

them. The paper does not present original research. It rather draws upon literature from a range of subfields in travel behaviour, residential choice, transport economics, and elsewhere to build a narrative. It cannot provide a review of the literature on any of the stated fields. The paper makes a case for a strong planning system in which guidelines for travel and residential choice are set by public planning organisations rather than by the market. It argues that this would be likely to help relieve future households from increasing transport costs and contribute to sustainability by reducing transport provision costs and external costs as well. It also suggests shifting the well-being debate in transport studies to focus on the notion of dignity rather than looking at happiness. The paper argues primarily from a European, specifically German, perspective, as some points raised are based on certain premises of urban form, and the housing and transport markets (e.g. the degree of choice in modes). Still, the conclusions can be generalised to other countries as far as the premises are similar today or could achieve some similarity in the future.

The next two sections introduce the concepts of RSS and mobility biographies, with a focus on discussing a number of questions relevant for the subsequent discussion. This is followed by introducing three types of transport costs (user costs, costs of transport provision, and external costs) and a discussion on how mobility biographies and RSS are related to these costs. Possible consequences for 'happiness approaches' in transport are outlined briefly in the next section. The paper closes with some conclusions

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for policy and future research.

## 2. Residential self-selection in travel behaviour

The RSS-travel debate originated from the land-use/transport debate. In essence, it seeks to answer the question: What if it is not urban form and the opportunities it provides that cause geographical differences in travel behaviour,<sup>1</sup> but rather the individual, social or psychological characteristics of people that make them choose a particular place of residence that in turn determines the spatial context they live in? The focus is therefore on the unequal spatial distribution of people with different social and personal characteristics, specifically on that spatial distribution which is motivated by people's preferences (i.e. subjective dispositions, or attitudes) towards the residence, neighbourhood, accessibility, and travelling. This research went hand in hand with the study of lifestyle effects on travel (Kitamura et al., 1997; Bohte, 2010; Van Acker et al., 2014). Lifestyles may be understood as preferences as well, but have been conceptualised in terms of various dimensions such as consumption and leisure behaviour, values, life goals, aesthetic taste, cultural affiliation or social networking (Aero, 2006; Scheiner and Holz-Rau, 2007). Taken together, attitudes, preferences and lifestyles may be understood to reflect subjective elements in people's travel needs (Scheiner and Holz-Rau, 2007).

It should be noted that the unequal spatial distribution of different population groups was controlled for much earlier in transport analysis by including personal and household socio-demographic variables, i.e. by accounting for socio-economic and demographic segregation. However, the new focus on the direct measurement of preferences accounted for the possibility that life situation may not adequately reflect these preferences. The term life situation reflects more objective, longer-term circumstances such as resources, social roles and personal ties that can hardly be changed on a day-to-day basis (Scheiner and Holz-Rau, 2007). These are formally reflected in sociodemographics.

The RSS-travel debate is based on a number of implicit premises (Chatman, 2009). One of them is the idea that preferences play a major role in travel as well as in residential choice. This idea presupposes that people/households (a) have distinct preferences for certain ways of travelling that guide their travel and residential decisions and (b) have options to satisfy these preferences when they relocate in terms of their own resources and constraints in housing supply. Hence, two questions may be raised at this point.

- (a) Do preferences play a relevant role in travelling?
- (b) Do households have the choice on the housing market to meet their travel preferences?

### 2.1. Do preferences play a relevant role in travelling?

From numerous studies there is general agreement that travel preferences – sometimes called mobility styles – have a significant effect on travelling, even when confounding factors are controlled (e.g. Ohnmacht et al., 2009; Van Acker et al., 2014).

Travel preferences have also been found to play a significant role in residential choice. This is the main achievement of the RSS-travel debate (see special issues of Journal of Transport and Land Use 7(3), 2014, and Transport Reviews 29(3), 2009). However, they

may not play an equally important role for all. The observation that households tend to deliberately accept high transport costs for the sake of residential quality (see Section 4.2) suggests that residential choice is largely driven by residential preferences, rather than travel preferences (see also Ettema and Nieuwenhuis, 2015). The role of preferences in residential choice is further discussed in Section 2.2.

The idea that preferences play an important role is also supported by theoretical considerations on individualisation and modernisation in developed societies. Sociological studies suggest that late modern welfare societies have lost their former rigid structure that was based on classes and traditional norms rooted in religion, political affinity, gender and intra-family hierarchy (Beck, 1992; Elzinga and Liefbroer, 2007). The increasing degrees of freedom are not least subject to increased large-scale access, more mobility and weakened ties to the immediate environment (Schmitz, 2001; Haugen et al., 2012). A declining role of social circumstances for travel behaviour over time can also be concluded from regression models. Scheiner (2006a) demonstrates that life situation constraints tend to lose the power to impact behaviour over time, although research consistently shows that they remain significant (Handy et al., 2005; Cao et al., 2007a, 2007b; Scheiner and Holz-Rau, 2007; Bohte, 2010; Scheiner, 2010; Aditjandra et al., 2012; Van Acker et al., 2014).

On the other hand, some arguments challenge the idea that neighbourhood, travel or accessibility preferences play a major role for people. Firstly, looking at descriptives of such preferences suggests only minor variation either between scales or between different urban areas. In Cologne, seven preference scales (measuring access to the nearest centre, the social neighbourhood, highway access, parking, child facilities, shopping facilities, and the residence) have all resulted in very similar mean values, and most differences between distinctly different inner-city and suburban neighbourhoods were only minor. For instance, the author concludes that "proximity to shopping facilities is equally important in all study areas" (Scheiner, 2006b, p. 69, author's translation). Taken overall, this suggests a universal, high level of expectation for multiple criteria.

Secondly, variations in preferences are likely to reflect objective circumstances. For instance, a low preference for public transport use is likely to occur when public transport performs poorly. Still, preferences were found to be significant in various studies when objective urban context was held constant. However, preference measurement typically follows exposure to spatial context. This means that preferences may have adapted to circumstances.

There is little direct evidence on travel preference adjustment or change. Studies on preference change in other fields may help. For instance, in childless couples the desire to have a child declines over time (Gray et al., 2013), attitudes towards safety management become more positive after a volcano eruption (Bird and Gísladóttir, 2012), prejudice towards Muslims increased in Amsterdam after Theo van Gogh was killed by a Islamic fundamentalist (Gautier et al., 2009), while socioeconomic or ethnic diversity in the neighbourhood decreases prejudice (Wessel, 2009). Preferences are known to be adjusted to social context in terms of attitude and lifestyle alignment in couples (Arránz Becker and Lois, 2010, for lifestyles; Kalmijn, 2005, for gender roles). Studies by Wahl (2003) and Isengard (2011) suggest that lifestyles change over the life course. E.g., Isengard (2011) finds that people tend to become less active in out-of-home leisure over the life course due to labour market, family, and social network composition effects. Spatial context changes perhaps play only a minor role here. According to Spellerberg (2011), residential moves between different geographical contexts ranging from urban to rural have little effect on lifestyles (measured as leisure activities). Conversely, structural equation models estimated by Van Acker et al. (2014) suggest that

<sup>1</sup> Variables of interest may include household or individual car ownership, car availability or public transport season ticket ownership, all of which are not travel behaviour variables, but reflect pre-decisions on intended travel behaviour (specifically on mode choice). I deliberately use the term travel behaviour here to include the availability or ownership of mobility tools.

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