Chapter 3
Cycling Related Mental Barriers in Decision Makers: The Austrian Context

Tadej Brezina
Vienna University of Technology, Austria

Alberto Castro Fernandez
Independent Researcher, Switzerland

ABSTRACT
Cycling is increasingly being implemented as a viable option for sustainable mobility in transport master plans from the local to the regional and even national level. However, when the implementation of actual measures is nearing the final stage, often mental barriers of decision-makers surface. These mental barriers refer to the resistance to innovation adoption, a phenomenon well documented in the social sciences. In our policy debate we use a list of factors that dissuade people from cycling from the literature to derive a classification of mental barriers in legislation, planning and infrastructure. Mental barriers have an influence on out-turn cycling levels and we provide exemplary evidence from Austria. The nature of these barriers, including the ‘vicious cycle of mental barrier construction’, is explored, before identifying two possible approaches to reduce, or even eliminate mental barriers. These approaches are: social pressure upon and self-experience by decision-makers.

INTRODUCTION
After some decades of car dominance captivating the thinking and actions of decision-makers in urban mobility, in most European countries cycling is again regarded as a vital ingredient of a sustainable urban transport system. This is shown in a plethora of policy papers and master plans that mostly agree on cycling as being crucial for the improvement of society and their transport regimes – ranging from local to national levels, for example (Koch, 2006; Land Salzburg, 2006; Rosinak & Partner & Besch+Partner, 2006; Strele, 2010; Winkler & Oblak, 2003). These documents also unanimously state that efforts for more cycling need to be pursued. However, problems arise when measures need to be put into practice to

DOI: 10.4018/978-1-5225-2116-7.ch003
Cycling Related Mental Barriers in Decision Makers

meet the ambitious goals and actually increase bicycle use. Vigar (2000) has found, that while a defini-
tive shift in transport planning rhetoric has been observed, shifts towards alternative modes and demand
management regimes have been very slow partly due to political difficulties.

Two types of obstacles to increase the level of cycling can be identified: 1) dissuading factors for
citizens to actual bicycle use and 2) mental barriers of decision-makers to implement bicycle oriented
transport policies.

There have been numerous in-depth studies on the factors influencing bicycle use and cyclists’
behaviour, which have helped to provide a clearer picture (Alrutz, Bohle, & Willhaus, 1998; Aultman-
Hall, 1996; Christmas, Helman, Butress, Newman, & Hutchins, 2010; Hagemeister, Schmidt, Seidel, &
Schlag, 2004; Handy & Xing, 2011; Jones, 2001; Kirner Providelo & de Penha Sanches, 2011; Menghini,
for example have carried out an extensive literature review to show the most relevant factors influencing
the level of cycling. The factors can be classified in the following categories: built environment,
psychological factors, socio-economical factors and natural environment¹. The built environment
appears to be named among the most prominent factors. Table 1 shows a summary of factors mentioned
by Heinen et al. (2010) along each category and their tested influence.

Natural environment factors such as temperature, rain and wind cannot be influenced. However,
others like hilliness, beauty of the route and darkness have a potential to be improved, e.g. by finding
better routes, plants and installing street lights respectively. These are actions of decision-makers, i.e.
politicians, planners and technicians at national, regional and municipal levels. Psychological factors
and socio-economic factors are linked to collective and personal frameworks and attitudes, but they
also can be modified through soft measures of decision-makers such as specific campaigns and traffic

Table 1. Factors influencing the level of cycling, modified after Heinen et al., 2010.

<table>
<thead>
<tr>
<th>Built Environment</th>
<th>Psychological</th>
<th>Socio-Economic</th>
<th>Natural Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trips distances</td>
<td>- Attitude +</td>
<td>Car ownership +</td>
<td>Hilliness -</td>
</tr>
<tr>
<td>City size</td>
<td>- Public image +</td>
<td>Bicycle ownership +</td>
<td>Beauty of the route (+)</td>
</tr>
<tr>
<td>Population density</td>
<td>+ Ideological beliefs +</td>
<td>Costs of transport +</td>
<td>Temperature +</td>
</tr>
<tr>
<td>Mixed land use</td>
<td>+ Perceived behavioral control</td>
<td>+</td>
<td>Rain -</td>
</tr>
<tr>
<td>Secured bicycle parking</td>
<td>+ Habits +</td>
<td></td>
<td>Wind -</td>
</tr>
<tr>
<td>Safety</td>
<td>+</td>
<td></td>
<td>Darkness -</td>
</tr>
<tr>
<td>Density of cycle network</td>
<td>(+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segregation grade of cycle ways</td>
<td>(+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality grade of cycle ways</td>
<td>(+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuity of cycle ways</td>
<td>(+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road width</td>
<td>(-)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traffic lights and stops</td>
<td>(-)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A positive operator means that the stronger pronounced the factor, the stronger the level of cycling. A negative operator means that the higher the factor, the lower the level of cycling. Operators in brackets mean that evidence with some contradictory results was found.

Source: Heinen et al., 2010.
Related Content

The DDA Method
[www.igi-global.com/chapter/the-dda-method/155430?camid=4v1a](www.igi-global.com/chapter/the-dda-method/155430?camid=4v1a)

Analysis of Pedestrian Road Crossing Behaviour in Urban Areas
[www.igi-global.com/chapter/analysis-of-pedestrian-road-crossing-behaviour-in-urban-areas/128719?camid=4v1a](www.igi-global.com/chapter/analysis-of-pedestrian-road-crossing-behaviour-in-urban-areas/128719?camid=4v1a)

Employing Traffic Lights as Road Side Units for Road Safety Information Broadcast
[www.igi-global.com/chapter/employing-traffic-lights-as-road-side-units-for-road-safety-information-broadcast/128663?camid=4v1a](www.igi-global.com/chapter/employing-traffic-lights-as-road-side-units-for-road-safety-information-broadcast/128663?camid=4v1a)

Allocation Criteria for Increasing Electronic Toll Collection Gates on Freeways Determined Using Simulation Analysis
[www.igi-global.com/chapter/allocation-criteria-for-increasing-electronic-toll-collection-gates-on-freeways-determined-using-simulation-analysis/144565?camid=4v1a](www.igi-global.com/chapter/allocation-criteria-for-increasing-electronic-toll-collection-gates-on-freeways-determined-using-simulation-analysis/144565?camid=4v1a)