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## **Do the North and the South Share a Cycling Mindset?**

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**Abstract:** Many Southern European cities are now working to encourage bicycle use for commuting. In search of effective strategies, they often study best practices from elsewhere. Within Europe, Dutch cities are a prime example of bicycle use. However, in order to assess the likelihood of success of transferring measures, an accurate comparison of the bicycling context and the attitudes towards bicycling is needed. This study explores the similarities and differences in attitudes and beliefs about the decisions to commute by bicycle to work in three small, cycling-oriented cities: Gouda (The Netherlands), Shkodra (Albania), and Peja (Kosovo). As almost everywhere in the Netherlands, cycling conditions are good in Gouda. Shkodra has one of the highest levels of cycling in the Balkan region and Peja is striving to improve its urban amenities for sustainable transport modes. Due to the fact that bicycling conditions are adequate in all three cities, it is possible to explore the role that attitudes play in the decision to cycle to work. This exploration provides an important starting point for large comparative studies of attitudes toward bicycle commuting in Southern Europe.

**Keywords:** cycling; work commute; behavioral studies; cultural aspects; policy transfer.

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## **1. Introduction**

Emerging from communist rule in the early 1990s, many Southeastern European cities experienced skyrocketing levels of automobile ownership and use and dwindling cycling rates. Now, a quarter century later, these cities are struggling to revive cycling as a commute mode. In search of effective strategies, they often study best practices from elsewhere. Dutch cities are a prime example of bicycle use in Europe. However, in order to assess the likelihood of success of transferring measures, an accurate comparison of the (physical and social) bicycling context and the attitudes towards bicycling is needed (Marsden and Stead 2011; Pojani and Stead 2014).

This article explores the similarities and differences in individual and social beliefs around the decision to commute by bicycle to work in three small, cycling-oriented cities: Gouda (The Netherlands), Peja (Kosovo), and Shkodra (Albania). As almost everywhere in the Netherlands, cycling conditions are good in Gouda. Peja is striving to improve its urban amenities for sustainable transport modes while Shkodra (in contrast with the rest of Albania) has one of the highest levels of cycling in the Balkan region. Since bicycling conditions are adequate in all three cities, it is possible to discern the role that beliefs play in the decision to cycle to work, and to compare Northern Europe to Southern Europe in terms of cycling beliefs. A key question of this study is whether Northern and Southern Europe share a “cycling mindset” which can be strengthened through cycling infrastructure investments and cycling promotion efforts in the south to match the north. Drawing on qualitative interviews, this exploration – one of few with a comparative dimension - provides a starting point for large-scale comparative studies of the psychology of cycling in Southeastern Europe or other developing regions.

The present study replicates an earlier study by Heinen and Handy (2012) but with a few key differences. That study focused on two university cities – Delft (The Netherlands) and Davis (California, US), which have a readily available market segment (their student population) with an interest in cycling and a progressive culture that fosters active transport. By contrast, the present study is set in non-university cities and, therefore, its results might be more generalizable to larger population groups. Also, this study setting in a less developed region of Europe - which has been more rarely the subject of scientific inquiry - can make it applicable to (smaller) cities in the global south. At the same time, the inclusion of one Dutch city in both studies allows for cross comparisons.

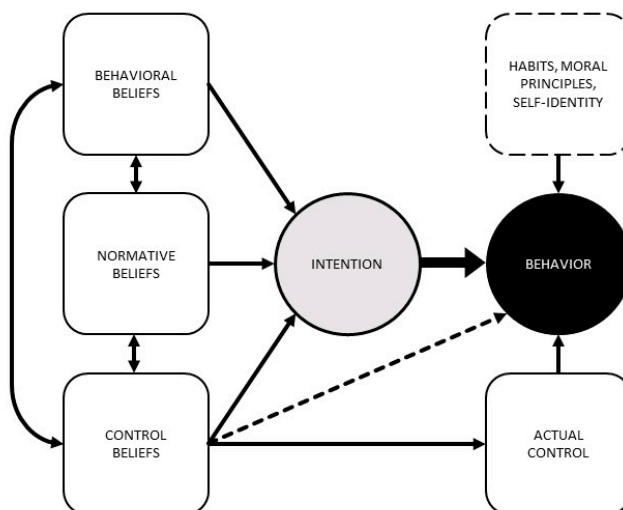
An environmental possibilism<sup>1</sup> stance is adopted by the present authors: while a supportive physical environment is crucial in achieving high cycling rates, the decision to cycle is based on individual will, and thus is highly dependent on intrinsic motivation. The physical environment is passive while people are the active agents at liberty to choose between a range of travel modes. At most, the built environment can condition (but not control) human actions.

The understanding of the role of motivation or intention in predicting behavior derives from the theory of planned behavior, a well-tested theoretical model developed by psychologists (Ajzen 1991). According to this model, the intention to perform particular behaviors in specified contexts (e.g. commuting to work by bicycle) can be accurately predicted by three independent concepts (a) beliefs about the likely consequences of the behavior (behavioral beliefs), (b) beliefs about the expectations of others (normative beliefs), and (c) beliefs about the presence of factors that may further or hinder the performance of the behavior (control beliefs).

Clearly, the theory of planned behavior views human social behavior as reasoned – although people’s beliefs might be unfounded or biased. However, habits, moral principles, and self-identity are also likely to be a motivation for humans to perform certain behaviors (Aarts et al. 1998; Hunecke et al. 2001). In particular, habits may play an important role during routinized, semi-automatic actions, such as the travel mode choice for the daily commute (Aarts et al. 1998; de Bruijn et al. 2009). Individuals who see themselves as “environmentalists” or “urbanites” might be more likely to use public transport or non-motorized transport for their commute (Hunecke et al. 2001; Scheiner and Holz-Rau 2007).

As a general rule, the stronger the intention to engage in a behavior, the more likely is its performance. But the behavior is only performed if, in addition to having the right motivation or intention, an individual has actual control over the behavior. Actual control depends on an individual’s ability to decide at will whether to perform or not the behavior and on his/her opportunity and resources - such as, money, skills, cooperation of others, etc. (Ajzen 1991). As long as the configuration of beliefs, actual controls, and other factors remains stable over time, there is no reason for the behavior to change (i.e. past behavior is the best predictor of future behavior). The introduction of new information (e.g. awareness of traffic calming measures along the route to work or a cycling event) can disrupt or break past patterns and lead people to change their usual behavior (e.g. switch commute mode from car to bicycle) (Bamberg et al. 2003; Rose and Marfurt 2007; Gatersleben and Appleton 2007). This theoretical framework is illustrated in Fig. 1.

**Figure 1.** Theoretical framework (based on Ajzen, 1991).



Previous research on cycling commutes has focused on perceived and actual behavioral control. A number of studies have examined the roles of individual constraints (e.g. gender, age, and income), natural environment constraints (e.g. topography and weather), and built environment constraints (e.g. urban form, urban size, and bicycling infrastructure and facilities) on cycling rates and route choices. The following is a summary of the main findings of these studies, based on a comprehensive review of the literature by Heinen et al. (2010).

(1) The built environment has an influence on bicycle use. Short distances, functional mix, and access to bicycle parking lead to increases in cycle mode share. The effect of high densities, dense cycling

networks, traffic lights, and presence of showers in the workplace on cycling rates and objective safety levels remains unclear. (2) The natural environment has a large influence on bicycle use. Hilliness, rainy weather, low temperatures, and darkness result in lower cycling rates. (3) Socio-economic factors, household characteristics, lifestyles, and lifestages appear related to cycling rates but the findings are mixed and the direction of causality is unclear. Large differences exist between countries. Car ownership (generally associated with higher incomes) has a negative effect on cycling rates. (4) Other factors, including gender and travel cost, time, effort, and safety have important effects on cycling rates, especially when considered in relation to competing travel modes. (Men cycle more than women in most countries.)

In contrast to most prior studies, the present study focuses on the role of personal attitudes (behavioral beliefs) and subjective norms and social pressures (normative beliefs) in the decision to commute by bicycle. The first part of the article summarizes the existing research and findings on this topic. The second part describes the case study settings and outlines the research methodology. The remainder of the article discusses the findings.

## **2. Literature Review**

While not extensive, previous research on psychological factors related to travel behavior suggests that behavioral and normative beliefs do influence cycling intentions and outcomes. The main findings are summarized below. This review is subject to the caveat that prior studies differ substantially in terms of methodology, conceptualization, and thematic focus and all involve highly developed countries.

- A study set in an Australian university found that fitness was a prime motivation for cycling to campus. Respondents who cycled articulated a dislike for cars and a desire to reduce their environmental footprint or compensate for the environmental impact in other areas of their lives. Other, less frequent motivations included flexibility, independence, convenience, and enjoyment of cycling as a sensual experience. Cyclists outlined a more limited set of (perceived) barriers and constraints compared to non-cyclists. Respondents highlighted the necessity of creating a visible “cycling culture” on campus through activities such as free monthly breakfasts for cycle commuters, a campus-based cycling club, ride-to-work days, group rides after work/school, and so on (Bonham and Koth 2010).
- A study set in a U.K. university campus found that, individuals with at least some cycling experience or who had at least contemplated cycling as a commute mode held more positive views of cycling. Others were unaware of the benefits of cycling and believed that they would “feel strange on a bicycle” or would be poorly judged by others. To many study respondents, especially women, cycling was something that other people did, people unlike themselves - e.g., young, fit men. But those who liked cycling would cycle under most circumstances. Those who had experience with different types of commute modes found cycling pleasant and exiting, while other travel modes were generally seen as boring and/or stressful. Travel flexibility (such as not getting stuck in traffic jams) was not found to be very important to cyclists (Gatersleben and Appleton 2007; Gatersleben and Uzzell 2007).
- A U.K.-based study of the views of, and stereotypes attached to, the “typical bicyclist” found that respondents were more likely to intend to cycle in the future if they saw the typical bicyclist as a

young, assertive professional or someone who uses a bicycle for daily activities, without owning special equipment or clothes (Gatersleben and Haddad 2010).

- A U.K.-based study of beliefs, attitudes, and behaviors related to cycling found remarkably positive attitudes to cycling in terms of its contribution to society. Large majorities agreed that cycling is good for the environment, helps reduce congestion, and is good for fitness and health. Cycling was also seen by large numbers as normal and even cool, and there was a high level of understanding that some U.K. media have an (unfair) anti-cycling agenda. Younger people held more positive views toward cycling than older people. Professional cyclists and celebrity athletes were found to be influential in creating a positive image of cycling. However, the image of cyclists was less positive than the image of cycling. The main finding of concern was that cyclists were seen as behaving badly on the roads. There was a class stereotype attached to cycling, with many respondents agreeing that, in the U.K. cycling is something middle-class men do. Otherwise, cyclists were attributed positive characteristics: they were regarded as adventurous, confident, and outgoing. Notwithstanding these encouraging findings, the study also revealed many prejudices and psychological barriers to cycling. For example, more than a quarter of the respondents believed that “roads are for cars and not for bicycles,” more than a quarter believed that cycling is physically too exacting, at least a third had strong car use habits, safety concerns were high, appearance issues were a problem of a sizable number of respondents, and few were willing to support any pro-cycling measures that would affect motorists (Tapp and Nancarrow 2014).
- A study of older cyclists in Denmark found that members of this group were more cautious, aware of safety issues, and fearful of becoming involved in an accident. Also, older adults tended to lack trust in their own abilities to maneuver in traffic (Bernhoft and Carstensen 2008).
- A study set in Belgium found that people reporting high levels of external self-efficacy (as indicated by the willingness to cycle in bad weather) were more likely to commute by bicycle. Cycling was an economic or moral choice for many participants, but the decision to cycle to work was also affected by the social environment. People reporting high levels of social support and modeling were more likely to commute by bicycle (de Geus et al. 2008).
- A study set in six small cities in western U.S. (half of them university cities), found that an affection for cycling was highly predictive of the odds of commuting by bicycle. At the same time, the perception of constraints (e.g. dropping off/picking up children or shopping for groceries) was sufficient to discourage cycle commuting. The work-based social environment was found to affect the decision to commute by bicycle in that, people were less likely to cycle to their workplace if their supervisor disapproved of their doing so. On the other hand, the attitudes of coworkers towards bicycling and fitness and the need to dress professionally were found to be irrelevant. In terms of home-based social environment, the study identified a significant self-selection effect: preference for a cycling-oriented community was associated with higher cycle commuting rates (Handy and Xing 2011).
- A study based in Portland, U.S., also found that the social environment had an influence in cycling. People who lived in households with other adults who cycled regularly, who had coworkers who cycled to work, or who saw adults cycling on their street frequently were more likely to be regular cyclists themselves (Dill and Voros 2007).

- A study set in the Netherlands found that the social environment was only influential when the commute distance was small. Over longer distances, individual considerations were more important than the opinions of others in the decision to cycle to work. The more beneficial cycling was perceived to be in terms of savings, comfort, and flexibility, the longer was the distances that commuters were willing to cycle. Positive attitudes of cycling were associated with the decision to cycle to work. People who cycled for other reasons were more likely to also commute by bicycle (Heinen et al. 2011).
- Finally, the study by Heinen and Handy (2012), mentioned at the start, which compared a US and a Dutch university city, found significant similarities in attitudes to cycling commutes between the two settings. In both places, people, especially cyclists, believed that cycling is healthy, enjoyable, and environmentally-friendly. Non-cyclists shared some of the same positive beliefs as cyclists but did not act on them, suggesting that, while psychological factors are important, they are not sufficient in overcoming perceived and actual constraints to cycling. Enjoyment was found to be a critical factor in the decision to cycle. The Dutch setting was perceived as safer for cycling, while an environmentalist outlook was more important in the case of American participants. In the U.S. case, cyclists reported facing some negative social norms related to bicycling, which they attributed to a car-oriented North American culture.

While the methods and results of the foregoing studies vary, their findings are very important in terms of policy because they suggest that changes to the physical environment alone are likely to be insufficient if travel modes are to shift toward active transport. At the same time, changing long-held psychological beliefs might prove more challenging than providing cycling infrastructure and facilities. Also, this type of “soft” intervention has not traditionally fallen within the realm of transportation planning, although the application of social marketing strategies to travel behavior is increasing in all three case study cities.

### **3. Case Studies**

Research for this study was carried out in Gouda (The Netherlands), Peja (Kosovo), and Shkodra (Albania). All three are old, medium-sized, densely populated cities located within a reasonable distance to the respective national capitals, and are connected to the capitals via road and rail (Fig. 2). The city centers are shown in Fig. 3. All three cities have a cycling culture and high cycling rates, especially Gouda and Shkodra. In Gouda, cycling is much better supported through an extensive network of cycle lanes, as well as traffic calming measures, where segregated lanes are absent. In Peja and Shkodra, employment is mostly local whereas Gouda is more of a commuter town. Some basic data on each city is provided in Table 1.

**Figure 2.** Location of the three case study cities.



**Table 1.** Basic data on the case study cities.

City	Gouda	Peja	Shkodra
Country	Netherlands	Kosovo	Albania
Population	71,000	60,000	77,000
Area	18 km <sup>2</sup>	15 km <sup>2</sup>	16.5 km <sup>2</sup>
Altitude	0	505-520	13
Topography	Flat	Partly hilly	Flat
Climate	Moderate maritime climate, with significant rainfall	Temperate (continental), with significant rainfall	Mediterranean / subtropical with hot summers
Commute modal split	34% cycling 19% walking 40% car 6% public transport 1% other	6% cycling 60% walking 30% car 3% public transport 0% other	25% cycling 41% walking 19% car 12% public transport 3% other
Car / bicycle ownership	78 / 88%	78 / 41%	49 / 75%
Distance to capital	Amsterdam – 70 km	Prishtina – 80 km	Tirana – 95 km
Average commute distance	13 km	3.9 km	4.9 km
Economic base	Urban tourism, leisure, retail, healthcare	Agriculture, crafts, retail, mountain tourism	Retail, food / textile industry, water tourism

Sources: Data on mobility in Peja and Shkodra were provided by MobKos and MobAlb respectively. All other data are courtesy of the respective municipal governments.



**Figure 3.** Cycling in the pedestrianized centers of three case study cities.

#### 4. Methodology

This study is based on in-depth semi-structured interviews. To understand human psychology, including personal beliefs, stories, meanings, and interpretations, individual qualitative interviews are preferable over quantitative surveys involving “dry” statistical analysis, or focus groups in which there is an amount of self-consciousness and peer pressure (Liamputtong 2013). The conditions for participation in interviews were: adult age (18 or above), employment outside the home (i.e. involving a, however short, commute), and residence in the case study city. No incentives were provided for participation. In total, 46 interviews were conducted, 16 in Gouda, 15 in Peja, and 15 in Shkodra. The interviews took place between summer 2013 and winter 2014 and lasted between 30 and 60 minutes each. Some interviews were conducted in person and some by telephone or Skype. Volunteers were recruited in the following ways:

- In Gouda participants were invited for interviews through printed notices in city center cafés, the central plaza, ten Gouda primary schools; and the central train station building; internet notices on social network sites and the website of an urbanism research group within Delft University of Technology; email invites to individuals in the researcher’s personal and work network; a notice by a local NPO that promotes cycling and to the City of Gouda, Fietserbond; and an item in a Gouda primary school newsletter distributed to parents.
- In Peja participants were invited for interviews through printed notices in key locations in the urban area, internet notices on social network sites, and email invites to individuals in the researcher’s personal and work network. Two local NPOs, MobKos and Cultural Heritage without Borders, as well as the City of Peja, helped with access to their networks.
- In Shkodra participants were invited for interviews through internet notices on social network sites; an announcement on a local radio station, Radio Travel; email notices to the Albanian Architects Association with a request to redistribute; and email invites to individuals in the researcher’s personal and work network. A local NGO that works to promote cycling, GO2, as well as the City of Shkodra, helped with access to their networks.

In all three cases, personal contacts and word-of-mouth advertising of the study proved more successful. Overall, the participants were not fully representative of the populations in the three cities, which might have somewhat skewed the results. For example, the study participants tended to be more educated than the population at large. In Shkodra and Peja the participation of younger people was broader while in Gouda older people tended to volunteer more often. However, given the small-sample,



exploratory nature of the study, the aim was to include diverse participants with a variety of experiences and perspectives on bicycling, rather than to collect a random and representative sample. Interviews were carried out over a long period of time, meaning that the influence of current weather conditions on the responses was balanced out.

All the interview questions were open-ended. The questionnaire compiled by Heinen and Handy (2012) was used as a starting point but was modified and adapted to the Southern European context. The interviews were in five parts. The first part collected demographic and socio-economic data about the participant. The second part contained questions on attitudes and behaviors related to the work commute. The third part focused on the (potential) cycling commute. The fourth part dealt with the interviewee's social surroundings. And the fifth part presented the participant with several hypothetical commute scenarios involving individuals and families in various life stages and situations and asked him/her to elaborate on these hypothetical commute choices and options.

The interviews in Gouda were conducted in English (a language nearly universally spoken in the Netherlands) while the interviews in Peja and Shkodra were conducted in Albanian (the official language in these two cities). To avoid or minimize social desirability bias (i.e. the tendency of interview respondents to answer questions in a manner that will be viewed favorably by the interviewer), participants were assured that there were no right or wrong answers and that the researcher would not pass judgment based on their commute mode. The interviews were voice recorded, transcribed, and coded. Coding was manual and followed a standard iterative process employed in the analysis of qualitative data, based on recurring keywords (or synonyms thereof).

## **5. Findings**

In discussing the findings, the same analytical structure developed by Heinen and Handy (2012) is employed, which includes beliefs about (1) health and exercise; (2) environment; (3) safety; and (4) enjoyment. This is due to the fact the questionnaires used in both studies were similarly organized around the same broad themes. Employing the same framework also allows for easier cross-comparisons. (A variety of frameworks employed in prior studies was one of the difficulties identified while summarizing research to date in this area). A fifth category, "other beliefs" was added to address issues that are unique to Southern Europe or that are missing from the existing framework.

Given the small size of the sample, quantitative analyses of the data are not provided. The authors believe that the nuances of the individual responses provide the main attraction and value of this study. Representative quotes extracted from the interviews are included in the text to illustrate key points (with the gender, age, and commute mode of the respondent provided in brackets). Throughout the discussion, the term "cyclist" applies to individuals who (at least occasionally) cycle to work, while the term "non-cyclist" refers to individuals who do not currently cycle to work.

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## Conflict of Interest

The authors declare no conflict of interest.

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<sup>1</sup> *Environmental possibilism* is a doctrine in geography, anthropology, and other disciplines, which postulates that the pattern of human activities is the result of the initiative of individuals operating within the natural, cultural, and built environment framework. This doctrine contrasts with *environmental determinism*, which emphasizes the influence of natural and built habitats in shaping human actions and lifestyle choices and assigns a passive role to individuals.