

PDF hosted at the Radboud Repository of the Radboud University Nijmegen

The following full text is an author's version which may differ from the publisher's version.

For additional information about this publication click this link.

<http://hdl.handle.net/2066/134483>

Please be advised that this information was generated on 2021-06-20 and may be subject to change.

BICYCLE LESSONS, ACTIVITY PARTICIPATION AND EMPOWERMENT

Angela van der Kloof

Mobility Consultant, Mobycon, PO Box 2873, NL-2601 Delft, the Netherlands,
Phone: +31-15-214-7899, a.vanderkloof@mobycon.nl

Jeroen Bastiaanssen

Research Assistant, Institute for Management Research, Radboud University Nijmegen,
Nijmegen, the Netherlands, PO Box 9108, NL-6500 HK Nijmegen,
Phone: +31-6-33-305-645, j.bastiaanssen@fm.ru.nl

Karel Martens *

Associate Professor, Institute for Management Research, Radboud University Nijmegen,
Nijmegen, the Netherlands, PO Box 9108, NL-6500 HK Nijmegen,
Phone: +31-24-361-2740, Fax: +31-24-361-1841, k.martens@fm.ru.nl

* Corresponding author

March 2014

Word count: 6.308 + 2 tables + 2 figures (250 words per table/figure) = 7.308

ABSTRACT

This paper addresses the impact of bicycle lessons for immigrant and refugee women on bicycle use and activity participation, from an equity perspective. Especially non-Western immigrant and refugee women have been identified as one of the population groups most likely to experience accessibility problems and, subsequently, transport-related social exclusion. The bicycle offers considerable potential to increase the mobility of these women. Hence, in the Netherlands and elsewhere, governments and non-governmental organizations have set up bicycle lessons for immigrant and refugee women. The paper discusses the impacts of these lessons on their bicycle use and activity participation. It draws on a quantitative survey and a series of in-depth interviews among non-Western immigrant women in Amsterdam. The results show that the impacts of the bicycle lessons vary. Some participants use the bicycle for everyday purposes, while others still face constraints preventing bicycle use for regular errands. The impacts on activity participation are limited. At the same time, the lessons have substantially improved women's feelings of self-esteem and self-confidence.

Keywords: bicycle lessons, gender, activity participation, empowerment, Amsterdam

1. INTRODUCTION

In recent decades, the need to travel increased as societies became organized around motorized transport, and especially around the car. Ever since, researchers have studied and discussed the consequences for people that are unable to drive a car for legal, financial or physical reasons (e.g. 1, 2). From the end of the 1990s, this debate has been linked to the role of transport in the process of social exclusion (e.g. 3, 4) and, more recently, fairness in transport provision (5), based on the understanding that accessibility problems can be both a cause for, and a result of, social exclusion (6). In contrast to the more static descriptions of poverty focusing on material welfare, social exclusion underscores that disadvantage is the result of a process that prevents particular (groups of) people to participate in activities considered normal in society (7, 8). This insight has resulted in the coining of the term transport poverty. In line with the distinction between poverty and social exclusion, transport poverty refers to a lack of resources; when the concept of resources is broadly conceived, transport poverty occurs if a person has a lack of access to key opportunities, such as employment, education, health and social support networks (3, 9, 10). Transport-related social exclusion, in turn, can be the result of transport poverty and occurs if systematic problems of access to opportunities lead to significant impacts on a person's life, such as unemployment, deterioration of health, or social isolation (11).

Over the past ten years, a substantial body of evidence has developed, providing a largely qualitative understanding of transport poverty in a number of Western countries, such as the UK (e.g. 12), Spain (e.g. 13), France (e.g., 14), Canada (e.g. 15) and Australia (e.g., 16). This body of research suggests that a substantial share of the population experiences some form of transport poverty. In a Western context, women from ethnic minority groups have been identified as one of the population groups most likely to experience accessibility problems and, subsequently, transport-related social exclusion (12, 17, 18, 19). They often face multiple disadvantages, such as low education levels, low incomes, limited access to private vehicles, and poor social networks. These disadvantages largely derive from informal institutions, such as gendered social norms about responsibilities for childcare and domestic work (19, 20).

A recent study from the Netherlands, exploring the role of the bicycle in limiting transport poverty (21), suggests that bicycle may well play a role in improving the mobility of these women. The bicycle is particularly attractive as a means of transportation for women since their average travel patterns, compared with those of men, tend to consist more of short distance trips and trip chains, due to their roles and obligations outside and inside the household (22, 23). Trip chaining may be impossible by public transport, due to discrepancies between personal and transport schedules, and access to private vehicles can be limited, compared with men (24). Because of its convenience for short distance trips and its flexibility enabling easy trip chaining, as well as its low costs and the absence of legal barriers for its utilization, the bicycle may offer women more options in combining their obligations.

Several studies and statistics show, however, that in almost any country in the world women cycle less than men. Factors that influence cycling rates among women include a lack of safe cycling infrastructure and personal safety concerns, a lack of bicycle facilities such as bicycle storage, the unavailability of bicycles and accessories suited for women with children, and concerns around appearance after cycling (25, 26, 27, 28, 29, 30, 31, 32, 33). Studies on transport and gender have also shown that cultural constraints may prevent women from cycling or even travelling all together. Women's frequent and distant travel may be associated with promiscuity and therefore discouraged (34, 35). These gendered mobility patterns can prevent women from fully participating in society.

In addition to these cultural factors, an important but often overlooked factor inhibiting bicycle use is a person's inability to ride a bicycle in traffic conditions. Like driving

a car, riding a bicycle requires training and practice. In countries with a tradition of cycling, like the Netherlands or Denmark, children are usually taught how to ride a bicycle by their parents or caregivers (see e.g. 36, 37). This way of acquiring cycling skills is by no means universal, neither in countries with a cycling tradition nor in countries lacking such a tradition. In countries with a high share of bicycle usage, a good number of children from ethnic minorities grow up in households without adults able to ride a bicycle in traffic. Learning how to cycle is not an obvious part of growing up in such a setting. In countries with low levels of bicycle ridership, many adults have never learned how to ride a bicycle. For these groups in both countries, organized bicycle lessons, provided outside the common household setting, are a way to acquire the necessary cycling skills to use the bicycle for everyday purposes (see e.g. the Bikeability program in the UK, cycling schools in Belgium, the CAAC safety training in the US and Escuela BiciMujer (Women's Cycling School) in Chili). Against this background, the goal of this paper is to assess the role of cycling lessons in averting transport-related social exclusion by analyzing the impact of these lessons on the activity participation of immigrant and refugee women in Amsterdam, the Netherlands.

The paper is organized as follows. In Section 2, we describe the use of the bicycle in the Netherlands and Amsterdam, with a particular attention for the role of the bicycle among different ethnic groups. In Section 3, we provide a description of the bicycle lessons as they have been provided to immigrant and refugee women in Amsterdam since the early 1990s. We then present a framework that enables us to analyze the impacts of cycling lessons on activity participation (Section 4). Then, in Section 5, we present the results of two studies on the impacts of cycling lessons on participants' activity participation. We end with conclusions and a brief discussion (Section 6).

2. CYCLING, GENDER AND ETHNICITY IN THE NETHERLANDS AND AMSTERDAM

In the Netherlands, the bicycle is a mainstream mode of transport and, for many people, an integral part of everyday life (38). Of all daily trips, 27 percent are made by bicycle, a figure that has remained relatively stable over the last decades (30). The bike is mainly used for travelling short distances up to 5 kilometers, particularly for shopping, commuting and trips to schools and sports facilities. In recent years the distances traveled by bicycle have increased, due to spatial concentration of facilities and increased distances between home and places for work, education and other facilities (39).

Although there is little difference in the overall levels of bicycle use between men and women, there are clear differences when ethnic background is taken into account (table 1). Bicycle use is relatively low amongst non-Western immigrants in the Netherlands, especially among women. Instead of using a bicycle, they tend to travel more on foot or by public transport (40, 41). In recent years this has gradually changed as bicycle use has increased amongst this group to an average of 20% of their daily trips in 2012. Although this is still significantly less than native Dutch women (28%), it shows that the bicycle plays an important role in daily lives. These data relate to both first and second generation immigrants. Data for first generation immigrant women from Turkey, Morocco and Suriname show that these women hardly cycled (42).

TABLE 1. Use of the Bicycle in Terms of Trips and Travel Distance for 2012, by Ethnic Background. Source: Dutch National Travel Survey (adapted)

	Number of trips			Distance travelled in km		
	Total	By bicycle	Bicycle share	Total	By bicycle	Bicycle share
Total	2.64	0.71	26.9%	30.46	2.63	8.6%
Women	2.74	0.78	28.5%	25.57	2.44	9.5%
Men	2.52	0.64	25.4%	35.49	2.83	8.0%
Ethnic group						
Native Dutch total	2.69	0.75	27.9%	31.57	2.79	8.8%
Women	2.82	0.84	29.8%	26.66	2.61	9.8%
Men	2.56	0.66	25.8%	36.57	2.97	8.1%
Western immigrants total	2.51	0.65	25.9%	28.75	2.21	7.7%
Women	2.57	0.70	27.2%	22.38	2.10	9.4%
Men	2.44	0.60	24.6%	35.83	2.33	6.5%
Non-Western immigrants total	2.29	0.49	21.4%	23.40	1.82	7.8%
Women	2.31	0.46	19.9%	20.72	1.48	7.1%
Men	2.28	0.52	22.8%	26.66	2.18	8.2%

Comparable to many other cities in the Netherlands, Amsterdam has experienced a substantial increase in bicycle use, from 20% of all trips in the 1990s to just over 32% in 2011 (43). Three quarters of the residents aged 12 and over own a bicycle and more than half of them cycle daily, mainly on short trips of 1 to 5 kilometers. Although a large part of the population of Amsterdam has access to a bicycle and uses it frequently, still a significant proportion of inhabitants cannot or does not cycle. An extensive survey in 2003 among residents aged 12 years and over, found that ownership and use of the bicycle was relatively low amongst residents of Moroccan, Surinamese, Turkish and Antillean origin compared to native Dutch (44). Where 85% of native Dutch households indicated to own one or more bicycles, the number was 55% for residents of Moroccan origin, 58% for Surinamese origin, 65% for Turkish or Antillean origin and 75% to 81% for other non-native Dutch residents. Likewise, only 40% to 50% of ethnic residents indicated to use the bicycle at least once a month, while 16% stated that they can cycle but do not own a bicycle, and 6% that they had never learned to use a bicycle. Note that first and second generation non-native inhabitants formed 48% of the total of inhabitants of Amsterdam in 2003. The expectation is that this will increase to 52% in 2020 (44).

3. CYCLING LESSONS IN THE NETHERLANDS AND AMSTERDAM

The Netherlands has at least a 30 year history of cycling lessons for immigrant and refugee women. From the 1970s onwards, many women from countries at the Mediterranean and Surinam immigrated to the Netherlands. These countries had at that time, and still, no cycling culture. On the contrary, many girls are being taught that cycling is not a suitable activity for them, as it is associated with masculinity, speed, danger, and (inappropriate) freedom of movement (45). Once people live in the Netherlands, things may change, as they see so many women, children and elderly riding their bicycles everyday. As a result, the image of what bicycling is may start to change.

The main motives to join a bicycle course are a wish to (re)gain quick and easy independent mobility and health reasons. Also, a wish to adapt to local mobility habits is mentioned (46). At the same time, there are substantial barriers preventing women to learn to use a bicycle, like the aforementioned cultural barriers. That is why a setting in a peer group, with role models around, has been used as a format for most bicycle lessons organised in the Netherlands. Bicycle lessons solely intended for women is part of this approach (46).

There are no official data on the number of cycling lessons and participants in the Netherlands, but the estimate for 2003 indicates about 300 locations offering lessons and at least 6000 participants (46). Although the availability of resources (like bicycles, training for teachers, and a location to meet) has been a challenge from the beginning onwards, the number of initiatives and participants has probably not changed much over time, partly because of the influx of new immigrants, and partly because of the rising popularity of the bicycle.

Cycling lessons for adult non-natives in Amsterdam have been organized for over 20 years (47). The lessons are organised at the neighbourhood level by the sports department of city boroughs (the level of government below the municipal level), by community centres, women's centres, or schools. Each organization has to find its own trainers, volunteers, course materials and funding. The funding usually comes from different policy domains: sports, recreation, social affairs, poverty policy, social participation and environmental affairs. Participants normally have to pay around € 2,50 per bicycle lesson, although in some places the course is offered for free.

A study carried out by Mobycon (48) provides an overview of bicycle lessons in Amsterdam for the year 2009. In that year, cycling lessons were offered in all 14 residential boroughs of the city. A total of 18 organizations offered lessons on 23 different locations. In most cases a course is offered as a 'block' encompassing 10 to 15 cycling lessons, each lesson lasting from 1 hour to half a day. In 2009, a total of 68 blocks was being offered. The lessons are targeted at women, as they show an interest to learn to ride a bicycle through group lessons. As a result all participants were females and the estimate is that about 1500 women participated in one of these courses during the year 2009. At more than half of the locations there is a waiting list for the courses. In other years there have been some experiments with bicycle lessons targeted at men, but those were not popular.

The Mobycon study underscores the differences in what is exactly offered in the cycling courses and how the process of learning to ride the bicycle is being facilitated and trained. At 60% of the locations where cycling lessons were offered, the lessons consist of a combination of theoretical lessons (traffic rules and regulations) and practical lessons (to obtain the ability to ride a bicycle). The remaining 40% of locations focus on practical lessons only. Of all staff involved in the cycling courses only 28% has had any form of cycling specific training. At 40% of the locations none of the staff has had any cycling specific training, at 20% of the locations only some of them had had such cycling training, while at 40% of the locations all staff has had some form of cycling specific training. All of the locations provided the participants with bicycles during the lessons, but the quality of those

bicycles varied. Less than half of the locations provided bicycles of good quality and suitable for the participants, while at 4 locations none of the bicycles were suitable, the main problem being too high bicycle frames. From all locations, only five (about 20%) lived up to all standards: sufficient staff with a form of cycling specific training, providing practical lessons on suitable bicycles, and theoretical lessons.

4. BICYCLE LESSONS, MOTILITY AND ACTIVITY PARTICIPATION

As noted before, mobility is an important prerequisite to participate in today's modern societies. An increase in a person's ability to travel may lead to an increase in opportunities to participate in activities (49). Bicycle lessons may contribute to activity participation, as they may increase a person's level of potential mobility, defined as the ease with which a person can move through space (50). Kaufman (51) and Kaufman et al. (52) have extended the notion of potential mobility by introducing the term 'motility'. This concept refers to the way in which an individual appropriates what is possible in terms of mobility and uses this potential for his or her activities. Individuals need to appropriate means of potential mobility, which then, depending on circumstances and ambitions, can be converted into movement. In the perspective of Kaufman et al. (52) motility "encompasses interdependent elements relating to access to different forms and degrees of mobility, competence to recognize and make use of access, and appropriation of a particular choice, including the option of non-action". Each of these interdependent elements affects the motility of an individual. Access refers to the range of possible means of transportation that may be available to a person. Competence includes the skills and abilities that enable a person to make use of particular transportation means, including physical, legal and organizational skills. The third element encompasses the degree of appropriation of a means of transportation by an individual, which occurs through the actual use of a means of transportation in everyday activities.

The notion of motility is suitable for understanding the necessary steps for the adoption of the bicycle in the everyday life of immigrant women. Bicycle lessons assist in acquiring the most crucial competences that are a prerequisite to full appropriation of the bicycle. However, the lessons have no direct impact on women's access to a suitable bicycle, as bicycles are only available for use during the lessons. Also, the bicycle lessons do not teach women the skill of map-reading or wayfinding that may be necessary to use the bicycle for travel to destinations not visited before. Finally, it is up to the women themselves to use the bicycle for everyday purposes, so it becomes a full-fledged part of the set of transportation means available to them.

The full appropriation of the bicycle expands women's motility. Increased motility, in turn, may imply an increase in a person's potential to participate in out-of-home activities. This can come about in two ways. First, when the bicycle is used instead of, or in combination with, other means of transport, like walking or public transport, the travel time and/or costs may actually be reduced. These savings, certainly if they are substantial, to engage in other out-of-home activities or to extend the duration of existing out-of-home activities. In terms of time-geography: increasing motility implies enlarged time prisms for carrying out activities. Note that these benefits may occur even if the spatial reach of the person does not increase due to the appropriation of the bicycle. This may be true because the same area can already be reached by public transport, but at a higher cost in terms of time or money (52).

Second, the improvement in motility may actually increase the area that can be reached. This may occur because cycling is a substantially faster way of movement than walking, while public transport is inefficient and only serves a limited set of destinations. It may also occur because the bicycle may bring distant public transport stops within reach, making new destinations accessible within a given time window (53). In these cases, the set of destinations that can be reached within the available time may actually substantially

expand. People may subsequently make use of these new opportunities and engage in new out-of-home activities that were previously out of reach. In terms of time-geography: increasing motility may result in an increase in the potential path area of a person. This relation between bicycle lessons, motility and activity participation is summarized in figure 1.

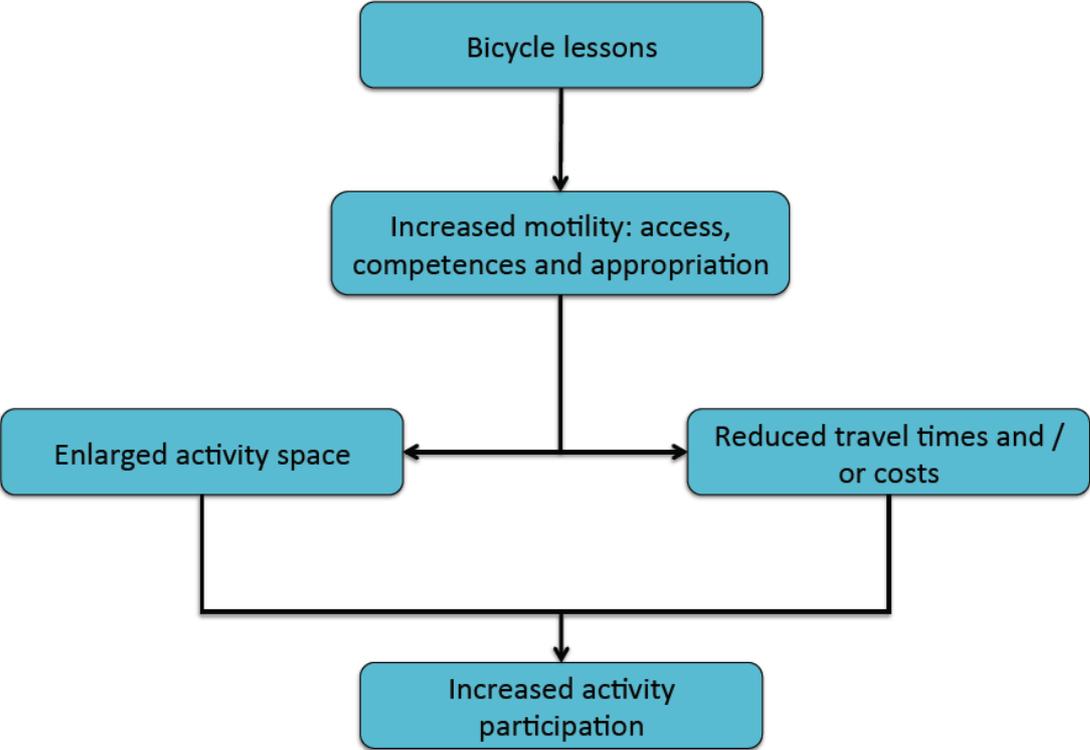


FIGURE 1. The relation between bicycle lessons and activity participation.

The assessment of the impact of bicycle lessons on activity participation requires a further specification of the process of bicycle ‘appropriation’. Based on the notion of motility, three important steps towards full appropriation can be distinguished. The first step encompasses acquiring the competences to use the bicycle. This includes the practical skills of cycling and knowledge of traffic rules, but also navigation and wayfinding skills. The bicycle lessons usually cover the first two components, but not always the latter two that may be necessary to bicycle to destinations not visited before. The second step consists of securing access to a bicycle. This requires not only the purchase of a bicycle or a reliable arrangement to borrow a bicycle from friends or relatives. It also includes the ability to repair the bicycle when needed or the necessary budget to cover the costs of repair by a professional. The third and final step encompasses the actual use of the bicycle in everyday practices. The person cycles safely in traffic, actually owns a suitable bicycle, and uses it to get to places. In the situation of a (young) parent it also means the ability to take children on the bicycle. It is through this use that the bicycle has become a serious transportation option. These three steps can be presented as a ‘ladder of bicycle appropriation’, from an absolute beginner, the lowest rung of the ladder, to an accomplished cyclist at the highest rung (see figure 2 in Section 5).

5. IMPACTS OF CYCLING LESSONS

We draw on two studies to gain an understanding of the impacts of cycling lessons on women’s activity participation. The first study consists of a before-after survey among 83 ethnic women who participated in cycling lessons in Amsterdam (54). This study was carried

out by the Municipality of Amsterdam and was not explicitly designed to answer our research questions. The consequence is that the results of the survey do not fully answer the research questions posed in our paper. The second study, which also took place in Amsterdam, consists of exploratory in-depth interviews with 19 women who participated in cycling lessons (55). Both studies mainly measured the effects of the cycling lessons immediately after completion of the lessons and as a result provide limited insight into long-term impacts on the activity participation. However, both studies help to gain a better understanding of the (potential) impacts of cycling lessons on activity participation. In what follows, we analyze the results of both studies from Amsterdam.

Results of the before-after survey

In the city borough of Amsterdam Nieuw West a survey was carried out amongst participants of a cycling course in 2011. The cycling course was only open to women and consisted of 15 lessons. Participants were enlisted for a survey at the start of the course and for one at the end of the course. A total of 206 women participated in the survey at the start, while 174 women participated in the survey at the end. In total 83 respondents filled out both forms, which provides insight into the effects of the cycling lessons. These 83 respondents have roughly the same profiles as the larger group of respondents. The majority of the respondents is between 30 and 49 years old (66 women), the youngest being 24 and the oldest being 66. The women have emigrated from 17 different countries, in particular from Morocco (35 participants), Turkey (14), Surinam (5) and India (4). With just one exception, all of the respondents come from non-Western countries, and often live in the Netherlands for several years.

Most of the 83 women indicated that they had no previous experience on the bicycle (72 women); 11 women stated that they had some experience. The expectations regarding the lessons were high: more than half (46 women) hoped to be able to ride the bicycle with a child in a seat on the back rack. Before partaking in the course, the women primarily walked or used public transport to get around: 60 women stated that they use public transport to travel around the city and 75 women indicated that they usually go on foot to their local shopping centre. Roughly one third of the women holds a drivers license, which gives an indication of how quickly a participant might learn the rules of the road for cyclists and how familiar she is with participating in traffic conditions.

The results from the before-after survey show that many respondents indeed learned to cycle. After the course, 61 out of the 72 women who were absolute beginners, are now able to cycle independently. Although almost all respondents used to walk to their local shopping centre, or sometimes used public transport, virtually all of them express the ambition to use a bicycle instead. For instance, most of the 61 respondents typically used public transportation to go to the city center. Fifty of them state that they will now use a bicycle to get there. The 11 respondents, who already had some experience with cycling, are also all able to cycle independently after the bicycle lessons. Six of them who would usually walk to the local shopping center state that they now want to use a bicycle instead and seven express the ambition to use a bicycle to visit the city centre. These statements underline that the bicycle lessons have substantially increased the cycling skills of the participants, but it is not completely clear from the survey questions under what traffic conditions this holds true.

The lessons have been less successful in teaching women how to bicycle with children. Roughly half of the participants stated they wanted to learn to cycle with a child on the back rack. Of this group, only 24 respondents indicated that they actually dared to do so at the end of the course. This means that the majority of them is not yet ready for trips in which they have to escort children. Another aspect of the appropriation, access to a suitable bicycle, seems to be problematic. Of the 72 absolute beginners at the start of the course, 54 respondents stated that they wanted to buy a bicycle. At the end of the course, 52 respondents

still had this wish; apparently they still do not have a suitable bicycle. All 11 women that already had some experience at the start of the bicycle lessons and can cycle independently now, also still want to buy a bicycle.

Taken together, the motility of the participants of the bicycle lessons has increased, in the form of an increase in cycling skills. In contrast, their access to a suitable bicycle has not increased. It is not clear from the survey results how likely it is that the access component will increase in the longer term. And while the ability to cycle could have the potential to reduce women's travel times and costs and to enlarge their activity space, the results of the survey do not allow a conclusion regarding cycling lessons' impact on women's activity participation.

In the survey at the end of the cycling course, the women were also asked about the effect of the cycling lessons on their social abilities. Sixty women indicated that they felt mentally stronger after the cycling lessons, and 54 women felt more independent after the lessons. Also, 47 women reported to go out of home more frequently and 42 women stated that they take personal initiatives to participate in activities more often. The cycling lessons thereby seem to contribute, to some extent, to the empowerment of the women (56). This may be closely related to the social aspects of the cycling course: the majority of the women (64) indicated to have gained new social contacts or friends during the cycling lessons.

In the following, we discuss the results of the in-depth interviews with a selection of women that participated in bicycle lessons. This provides us more insight in whether the potential is actually translated into increased levels of activity participation.

Results from in-depth interviews

Separate from the survey in the borough of Amsterdam Nieuw West, a more exploratory study on the effects of bicycle lessons in Amsterdam was carried out, also in 2011 (55). The respondents encompassed 19 women who were individually interviewed at community centres, schools and health centres, where the bicycle lessons took place. The majority of the respondents is between 35 and 55 years old (table 2). They are all immigrant and refugee women from non-western countries, mostly from Morocco. Fifteen women have (small) children and over a third of them is a single mother.

The women were interviewed at different stages of the bicycle lessons. Eight women finished the bicycle lessons, ten still participated in the course, and one woman quit the course for health reasons. These differences are obviously reflected in the level of 'bicycle appropriation' (figure 2). All women who finished the lessons are able to bicycle, but their position on the 'ladder of bicycle appropriation' differs. Four women are able to use the bicycle for everyday errands, while others are merely able to cycle in the park. The level of the women who were still participating in the bicycle lessons at the time of the interview varies between 'Cannot cycle' and 'Can cycle in park and has a bicycle'.

Although the skill levels vary, the ambitions of the respondents for participating in the cycling lessons are identical. All hope that in the (near) future they will be able to use the bicycle to go to activities, do their shopping, or take their children to activities. They all expect that this will save them time. When asked whether they expect to start participating in extra activities, as their activity space might increase and they might gain time, most respondents state that they will not have the time to participate in extra activities.

TABLE 2. Overview characteristics of respondents. Source: Wolters, 2011 (adapted)

Characteristics	Number	Description
Stage	8	Passed bicycle exam
	10	Currently taking bicycle lessons
	1	Quit lessons
Country of origin	9	Morocco
	2	Turkey
	2	Surinam
	2	Ghana
	1	Afghanistan
	1	Egypt
	1	Irak
	1	Pakistan
Year of birth	3	1959 or earlier
	6	1960 - 1969
	6	1970 - 1979
	3	1980 - 1989
	1	Unknown
Household type	3	Single person household
	6	Single-parent family
	9	Couple with children
	1	Couple without children
Education level	2	No education
	6	Primary school
	2	Secondary school
	5	Secondary vocational
	3	Higher vocational/ academic
	1	Unknown
Employment	4	Employed
	15	Unemployed
Year of immigration	2	1979 or earlier
	8	1980 - 1989
	4	1990 - 1999
	5	2000 - 2009

The goal of the in-depth interviews was to explore to what extent respondents who passed the bicycle exam used the newly acquired skills in their everyday life. The differences between these respondents are significant.

One respondent, her fictitious name is Samira, only cycles in the park. She is a 42 year old married woman with 4 children aged 5 to 18 years. She lives in the Netherlands since 1980, has no formal education, but does have a driver's license. She works 5 times 2.5 hours a week; her husband is jobless for 4 years. Samira finished the bicycle lessons two years before she was interviewed and she started to use the bicycle. However, at some day the road on which she cycled was slippery and she fell. Therefore she will now only cycle in the park when the weather is nice. Otherwise she is afraid to fall and she finds it difficult to cycle in

traffic. Also, she does not dare to ride the bicycle with the children. In order to move around Samira mainly uses the car. She drives the 5 and 12-year-old children to primary school, does her shoppings by car and also her commute.

Two other respondents are able to cycle in regular traffic, but do not own a bicycle. One of these respondents indicated her bicycle was stolen and she does not have another one yet. The other lacked the financial means to acquire a bicycle. One rung higher on the ladder is another respondent. She is able to cycle in the streets and owns a bicycle, but only uses the bicycle for leisure and uses public transport and walking to go to work and do shoppings. Her fictitious name is Gladys and she is a single mother with a 16-year-old son. She arrived in the Netherlands in 1992 and her educational level is primary school. She has a full time job. Half a year before the interview was conducted she finished the bicycle lessons and Gladys immediately bought a bicycle. She uses it to do her shoppings and to go to church. The bicycle is quicker and a good exercise for her legs, as she suffers from osteoarthritis (a rheumatic disease). When the weather is nice she likes a leisurely ride with her neighbour. Still, her main form of transportation is public transport, as her workplace is too far to cycle to.

LADDER OF BICYCLE APPROPRIATION

Uses a bicycle for practical purposes	4 ('Leila')
Is able to bicycle on streets, owns a bicycle, but not used practical purposes	1 ('Gladys')
Is able to bicycle on streets but does not own a bicycle	2
Passed cycle exam but only bicycles in park	1 ('Samira')

Is able to bicycle in park and owns a bicycle	1
Is able to bicycle in park and has access to a bicycle	3
Is able to bicycle in park	5
Is able to bicycle in protected premises	1
Is not able to bicycle	1



FIGURE 2. Position of the 19 respondents of the in-depth interviews on a 'ladder of bicycle appropriation'; from an absolute beginner to an accomplished cyclist.¹

Half of the respondents who passed the exam can be positioned at the highest rung of the ladder: they use the bicycle for practical purposes. Leila is the fictitious name for a 30-year old single mother of two children aged 8 and 10. She arrived in the Netherlands with her former husband in the year 2000 and has a university education. Leila finished the bicycle lessons about four years before the interview was conducted and bought a bicycle immediately afterwards. Also, she started to practise cycling with a cycling buddy. Before the lessons, Leila used to take public transport or walked. Now she travels to almost all of her

¹ The cycle exam is not an official exam. Most organizations in Amsterdam that offer bicycle lessons undertake an informal exam, in which basic cycling skills are tested.

destinations on the bicycle, also together with her children. She finds that the bicycle is faster, easier and that it is less heavy to take goods on the bicycle. It also saves her money, she does not have to wait for the tram, and it is a form of sports. Because she wants to share all the advantages of the bicycle with women who cannot cycle yet, Leïla is now volunteering in the bicycle lessons.

When we have a closer look at all four respondents that actually use the bicycle for practical daily transportation, we see that they use the bicycle to go to activities in which they already participated, like doing voluntary work. Three of them use the bicycle to go shopping and one participant brings the children to activities on the bicycle. Others do not bring their children to after school activities as they do not participate in those activities, or there are no children that need to be accompanied.

All four respondents now use the bicycle to go to their personal activities, instead of walking or using public transport. It is cheaper and saves them time. From the analysis of the activity participation of these respondents, it becomes clear that this does not necessarily mean that they have increased their activity participation. The respondents state that the household and the upbringing of children take up a lot of time and their ambition is not automatically to spend the time saved on extra (out-of-home) activities. Only two respondents participate in more activities compared to the period before the bicycle lessons. Yet, this is not so much because they learned how to bicycle, but because of changing circumstances: both women have more time to participate in activities as their children are a bit older and go to school during the day. Therefore they have time for more personal activities such as voluntary work. Other factors (mentioned by the respondents) that negatively influence an increase in activity participation are health issues, a lack of knowledge about where activities are offered, language barriers, and lack of financial resources.

6. CONCLUSIONS

The results of the survey and the in-depth interviews amongst (former) participants of the bicycle lessons confirm that the competences learned during the lessons can contribute to a higher use of the bicycle and to increased activity participation. But for a substantial share of the participants the bicycle lessons alone do not increase their motility or activity participation. It is a challenge for many to acquire a bicycle and to actually ride in traffic conditions. The participants who do succeed to fully appropriate the bicycle and use it for daily transportation save time and money. This does not necessarily mean that they start to participate in more activities outside of the home. The respondents state that the household and the upbringing of children take up a lot of time and their ambition is not automatically to spend the time saved on extra (out-of-home) activities.

Thus, while there is reason to expect that the full appropriation of the bicycle may, over time, lead to an increase in activity participation, the studies we describe in the paper do not enable us to draw this conclusion. A before-after survey, with a large sample to take account of changes in the circumstances of the respondents, would be necessary to draw definitive conclusions on the link between the full appropriation of the bicycle and increases in activity space and activity participation.

The studies described in the paper do point at other effects of the bicycle lessons. A substantial share of the respondents in the studies indicated that have made new contacts, feel mentally stronger, and feel more independent. Respondents also stated that, due to the bicycle lessons, they were better informed about activities in their neighborhood and city. These responses suggest that the social dimension of the bicycle lessons is just as important as the technical part. The act of learning to ride the bicycle may in itself be a way to increase women's perception of their social inclusion in the Dutch society, irrespective of the exact impact of bicycle lessons on participants' motility or activity participation.

ACKNOWLEDGEMENTS

The authors thank Sari Wolters, Claire Jansen and Mobycon for generously sharing the results of their respective master thesis and survey materials.

REFERENCES

1. Schaeffer, K.H., Sclar E.D., 1975. *Access for all: transportation and urban growth*, Penguin, Harmondsworth.
2. Wachs, M., Kumagai T.G., 1973. Physical accessibility as a social indicator. *Socio-Economic Planning Science*, 6, 357-379.
3. Lucas, K., 2012. Transport and social exclusion: Where are we now? *Transport Policy*, 20, 105-113.
4. Hine, J.P., Mitchell F., 2001. Better for everyone? Travel experiences and transport exclusion. *Urban Studies*, 38, (2), 319.
5. Martens, K., 2012. Justice in transport as justice in access: applying Walzer's 'Spheres of Justice' to the transport sector. *Transportation*, 39, (6), 1035-1053.
6. Farrington, J., Farrington C., 2005. Rural accessibility, social inclusion and social justice: Towards conceptualisation. *Journal of Transport Geography*, 13, (1), 1-12.
7. Church, A., Frost, M., Sullivan, K., 2000. Transport and social exclusion in London. *Transport Policy*, 7, 195-205.
8. Rajé, F., 2003. The impact of transport on social exclusion processes with specific emphasis on road user charging. *Transport Policy*, 10, 321-338.
9. Martens, K., Golub, A., 2012. A justice-theoretic exploration of accessibility measures. In Geurs, K.T., Krizek, K.J., Reggiani, A. 2012. *Accessibility Analysis and Transport Planning: Challenges for Europe and North America*, Edward Elgar, Cheltenham..
10. Meert, H., Bourgeois, M., Hoof, K., Asperen, T., 2003. *Immobiël op het platteland: omtrent rurale vervoersarmoede in Vlaanderen*. Koning Boudewijnstichting, Brussel.
11. Kenyon, S., Lyons, G., and Rafferty, J., 2002. Transport and social exclusion: investigating the possibility of promoting inclusion through virtual mobility. *Journal of Transport Geography*, 10, (3), 207-219.
12. Social Exclusion Unit, 2003. *Making the connections: final report on transport and social exclusion*. http://webarchive.nationalarchives.gov.uk/+http://www.cabinetoffice.gov.uk/media/cabinetoffice/social_exclusion_task_force/assets/publications_1997_to_2006/making_transport_2003.pdf.
13. Cebollada, À., 2008. Mobility and labour market exclusion in the Barcelona Metropolitan Region. *Journal of Transport Geography*, 17, (3), 226-233.
14. Wenglenski, S., Orfeuill, J.P., 2004. Differences in Accessibility to the Job Market According to Social Status and Place of Residence in the Paris Area. *Built Environment*, 30, 116-126.
15. Páez, A., Mercado, R.G., Farber, S., Morency, C., Roorda, M., 2010. Relative accessibility deprivation indicators for urban settings: Definitions and application to food deserts in Montreal. *Urban Studies*, 47, (7), 1415-1438.
16. Currie, G., 2011. *New perspectives and methods in transport and social exclusion research*. Emerald, Bingley.
17. Hine, J. Grieco, M., 2003. Scatters and clusters in time and space: implications for delivering integrated and inclusive transport. *Transport Policy*, 10, 299-306.

18. Sanchez, T., Shen, Q., Peng, Z., 2004. Transit Mobility, Job Access and Low-income Labour Participation in US Metropolitan Areas. *Urban Studies*, 41, (7), 1313-1331.
19. SCP, 2006. Sociale atlas van etnische minderheden. Den Haag.
20. World Bank, 2012. World Development Report – Gender Equality and Development.
21. Martens, K., 2013. The role of the bicycle in limiting transport poverty in the Netherlands. *Transportation Research Record: Journal of the Transportation Research Board*. Forthcoming in 2013.
22. Rosenbloom, S., 1989. Trip chaining behaviour. In: Grieco, M., Pickup, L., Whipp, R., 1989. *Gender, Transport and Employment*, Gower Press, Aldershot.
23. Lehner Lierz, U., 2003. The role of cycling for women. *Sustainable Transport, planning for walking and cycling in urban environments*, 123-143.
24. Turner, J., Grieco, M., 1998. Gender, transport and the new deal: the social policy implications of gendered time, transport and travel. Presented at the Social Policy Association conference.
25. Lehner Lierz, U., 2003. The role of cycling for women. *Sustainable Transport, planning for walking and cycling in urban environments*, 123-143.
26. Garrard, J., Rose, G., Lo, S.K., 2008. Promoting transportation cycling for women: the role of bicycle infrastructure. *Preventive Medicine*, 46, 55-59.
27. Garrard, J., Handy, S., Dill, J., 2012. Women and Cycling. In: *City Cycling*, Pucher, J., Buehler, R., 211-234.
28. Porras, F., Stoscheck, C. Van der Kloof, A., 2011. Balance on the bike, an essay on Gender and Cycling. *Interface, Cycling Expertise*. <http://www.slideshare.net/AvdKloof/balance-on-the-bike-an-essay-on-the-relationship-between-gender-and-cycling>
29. Van der Kloof, A., 2013. Lessons learned through training immigrant women in the Netherlands to cycle. To be published in *Cycling Cultures*, Cox, P., 2014. <http://www.slideshare.net/AvdKloof/20130612-angelavander-kloof>
30. Pucher, J., Buehler R., 2012. *City Cycling*, Massachusetts Institute of Technology.
31. Arora, A., 2012. Mobility for equity: A gendered perspective on bicycling in India. <http://designpublic.in/blog/mobility-for-equity-a-gendered-perspective-on-bicycling-in-india/>
32. Hajinikitas, C., 2001. Women and Cycling in Sydney: Determinants and Deterrents. Results of Pilot Survey. Melbourne (Vic): Cycling Promotion Fund.
33. Bonham, J., Wilson, A., 2012. Women cycling through the life course: an Australian case study. In: Parkin, J., 2012. *Cycling and Sustainability*.
34. World Bank, 2010. Gender and Transport in MENA: Case Studies from West Bank Gaza and Yemen. *MENA Knowledge and Learning: Quick Notes Series*, 21.
35. Porter, G., 2011. 'I think a woman who travels a lot is befriending other men and that's why she travels': Mobility constraints and their implications for rural women and girl children in sub-Saharan Africa. *Gender place and culture*, 18, (1), 65-81.
36. Slütter, M., 2013. Londen spiegelt zich aan Nederland, In: *Vogelvrije Fietser*. <http://www.vogelvrijefietser.nl/hetblad/2013-10/artikel/londen-spiegelt-zich-aan-nederland>
37. Van der Kloof, A., 2012. Get on your Bike! Cycling education in the Netherlands, Abstract and presentation for VeloCity Global Vancouver. <http://www.slideshare.net/AvdKloof/get-on-your-bike-cycling-education-in-the-netherlands>
38. Kuipers, G., 2013. The rise and decline of national habitus: Dutch cycling culture and the shaping of national similarity. *European Journal of Social Theory*, 17-35.

39. Planbureau voor de Leefomgeving, 2010. Staat van de ruimte 2010. Den Haag: Planbureau voor de Leefomgeving.
40. Harms, L., 2008. Overwegend onderweg. De leefsituatie en de mobiliteit van Nederlanders. Den Haag, Sociaal en Cultureel Planbureau.
41. Kennisinstituut voor Mobiliteitsbeleid, 2012. Mobiliteitsbalans 2012, Ministerie van Infrastructuur en Milieu.
42. Fietsberaad, 2006. Het fietsgebruik van allochtonen nader belicht. Een aanvullende analyse op de SCP-verkenning Anders Onderweg, 3-4.
43. O+S Amsterdam, 2012. Amsterdam in Cijfers, Jaarboek 2012. Gemeente Amsterdam.
44. O+S Amsterdam, 2003. Amsterdam op de Fiets!
<http://www.fietsberaad.nl/library/repository/bestanden/rdamopdefiets2.pdf>
45. Van der Kloof, A., 2009. Bicycle training for adults in the Netherlands. Good practices and methods. Paper for VeloCity Brussels.
<http://www.slideshare.net/AvdKloof/bicycle-training-for-adults-in-the-netherlands>
46. Van der Kloof, A., 2003. Breaking out by bike: cycling courses as a means of integration and emancipation. Sustainable Transport, planning for walking and cycling in urban environments, 650-658.
47. Fietsberaad, 2002. Fietsles geeft allochtone vrouwen meer zelfvertrouwen, Fietsverkeer, 14-15.
48. Mobycon, 2009. State-of-the-Art review Fietsvaardigheid Amsterdam: Inventarisatie rapport.
49. Keuzekamp, S. Merens, A., 2006. Sociale atlas van vrouwen uit etnische minderheden. Den Haag: Sociaal en Cultureel Planbureau.
50. Sager, T., 2006. Freedom as Mobility: Implications of the Distinction between Actual and Potential Travelling. Mobilities, 1, (3), 465-488.
51. Kaufmann, V., 2002. Re-thinking mobility: Contemporary Sociologie. Aldershot, Ashgate.
52. Kaufmann, V., Bergman, M. M., Dominique J., 2004. Motility: mobility as capital. International Journal of Urban and Regional Research, 28, (4), 745-756.
53. Martens, K., 2004. The bicycle as a feeding mode: experiences from three European countries. Transportation Research Part D, Transport and Environment, 9, (4), 281-294.
54. Janssen, C., 2011. Survey before and after bicycle lessons in Amsterdam Nieuw West.
55. Wolters, S., 2011. Helpt de fiets allochtone vrouwen vooruit?: Een verkennend onderzoek naar het effect van fietseducatie op de activiteitenparticipatie van allochtone vrouwen. Master Thesis Radboud Universiteit Nijmegen, Nijmegen.
56. Mahmud, S., Shah, H.M., Becker, S., 2011. Measurement of Women's Empowerment in Rural Bangladesh. World Development, 40, (3), 610-619.