

Velo-city Falco Lecture Prize 2000

Second prize winning paper

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Introduction

“There’s nowhere to leave my bike at work ” – a statement like this indicates a barrier to using the bicycle, but how valid a reason is it?

There are various obstacles which may discourage people from cycling such as speed and volume of traffic, length of journey, difficulties carrying luggage and lack of cycle paths or lanes. When these are taken into account, it is clear that the availability and standard of cycle parking is only one of a number of factors that may influence the decision to cycle. However we need to examine how important a factor it is. Furthermore, is there any relationship between the purpose of a journey e.g. shopping, and the need for cycle parking? Does the type of cycle parking on offer at a certain destination, and at stopping points during a journey, have any influence on someone making the decision to cycle? A local case-study will concentrate on the Bike & Ride journey.

This paper will examine the relevance of cycle parking in creating an environment that encourages cycling.

Different types of cycle parking

Fear of theft or damage to the bicycle is often cited as a major deterrent to cycling. With more attractive and better quality machines being sold, the European Cyclists’ Federation states that cycle theft is increasing in many European countries. Clearly there is a relationship between cycle parking and theft.

The following main types of cycle parking have been identified:

Sheffield stands are of an inverted U shape and support the bicycle allowing the frame and both wheels to be locked. They are relatively cheap and make efficient use of space – 6 to 10 bicycles occupy the area required by one car. Undoubtedly this is the most common type of cycle parking across Europe.

Butterfly stands or wheel racks only support one wheel making secure locking of frame and wheels more difficult or impossible. They can cause damage to wheels. When presented with a choice of Sheffield stand, wheel rack or butterfly stand at a single location, cyclists made greatest use of the Sheffield stands. (1)

The Fietzersbond enfb (Dutch Cyclists’ Association) have helped to develop a Quality Standard for these most common stand and rack types of cycle parking. Parking systems are judged on criteria such as ease of use and resistance to theft. It is hoped that as a result manufacturers will develop better products, and achieve a major improvement in the quality of cycle parking in the Netherlands. Making cycle parking

more user friendly and achieving a perceptible improvement in security for its users must surely contribute to more cycling.

Cycle lockers offer a high level of security and allow most types of bicycles together with luggage and clothing to be stored. UK research showed that 77% of people on commuting trips who were not prepared to leave their bikes for more than 2 hours, expressed concern about theft or vandalism.¹ Therefore this type of facility is especially suitable for longer-term parking and, as will be shown, cyclists are willing to pay for it. In the Netherlands cycle lockers are common, 200 train stations surveyed having approximately 14000 lockers in total¹³

Cycle centres combine a secure (usually supervised) cycle storage facility with a range of additional services such as repairs, cycle hire, showers and lockers. Cyclists can leave their bicycle for servicing while at work and have it ready for the return journey without losing any time. This and other services could encourage new cyclists, especially when these are not available at their usual destination. Off street parking needs to complement not compete with nearby on street parking. Evidence from the cycle centre in Taunton, England showed little demand for short term parking at the centre when it first opened, because there was sufficient cycle parking in the nearby high street. (2)

Bike and ride

The use of the bicycle as a feeder to public transport interchanges is increasingly being seen by transport planners as a vital link in an integrated transport system. However despite 60% of the UK population living within a 15-minute cycle ride of a railway station, less than 1% of passengers arrive at their outward station by bike. In Germany the figure is 15%, in the Netherlands 30%, and in Denmark 35%. Because of this disparity between the UK and other European countries I have chosen to look in more depth at the Bike and Ride journey. How important is the cycle parking available at these stations/interchanges in persuading people to travel by bike? With the following case-study in Birmingham and other examples, I will seek answers to that question.

Case-study: Sutton Coldfield Railway station

Sutton Coldfield is a large suburb of northern Birmingham and lies on the Cross City Line, the most heavily used local rail service in the UK, outside South East England. Cycle parking facilities comprise of 4 Sheffield stands located next to the ticket office and 6 cycle lockers next to the north bound platform. Staff report that the facilities are well used - there was a waiting list of 10 people for lockers at the time of my survey. The lockers are free to use, though a £7.90 key deposit is required.

A questionnaire survey of 50 rail passengers was conducted over 3 days in November 1999. The central aim of the survey was to discover what people want from cycle parking and to ascertain whether they would pay extra for more secure parking facilities. In focussing on one particular station I wanted to determine which factor(s) made the decision to cycle more difficult (or prevented people from cycling), and specifically whether the cycle parking available was perceived as being secure or not.. Related data which was collected included the number and frequency of those travelling to the station by cycle. In questioning all passengers, as opposed to only

those who already cycled, I hoped to learn about the opinions of potential future cyclists. Research has to address this group and not just existing cyclists. See Appendix A for a copy of the questionnaire.

Of the 50 passengers who answered the questionnaire only 5 (10%) said that they ever travelled to the station by bike, and of these only 2 (4%) did so on at least a weekly basis. Nevertheless with the generally low level of cycling in Birmingham (only 1% of all journeys) this is still a reasonable figure.

Figure 1

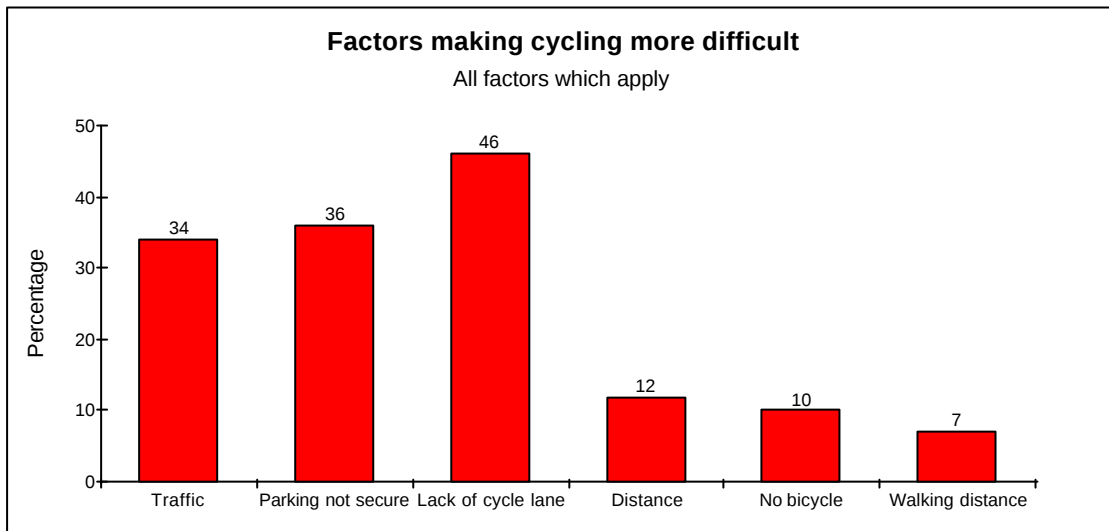
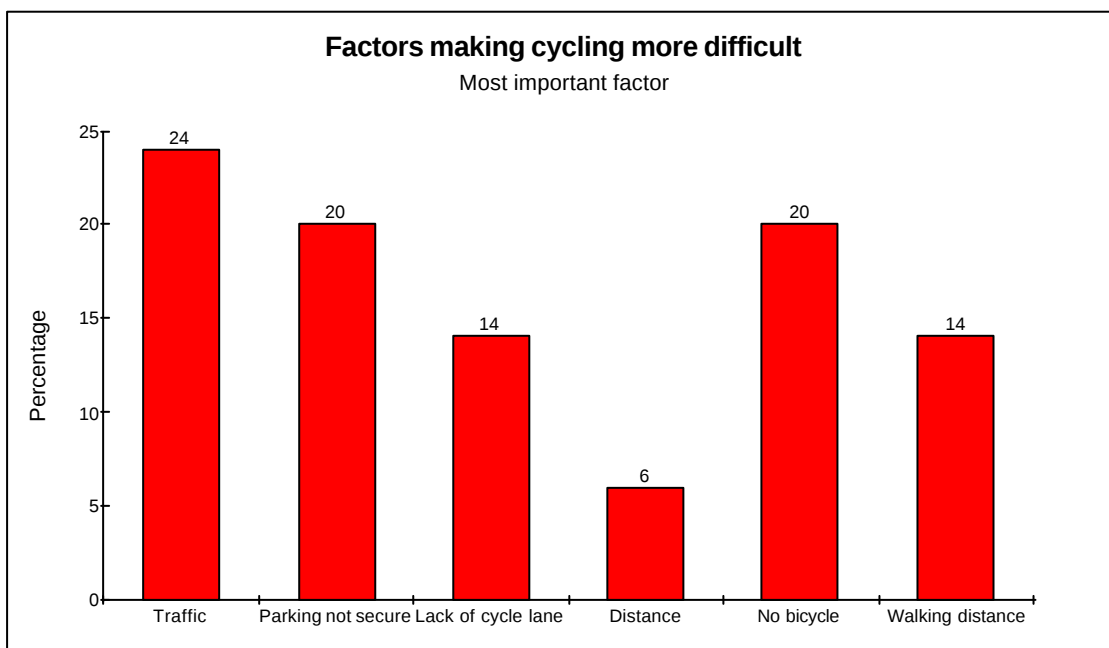


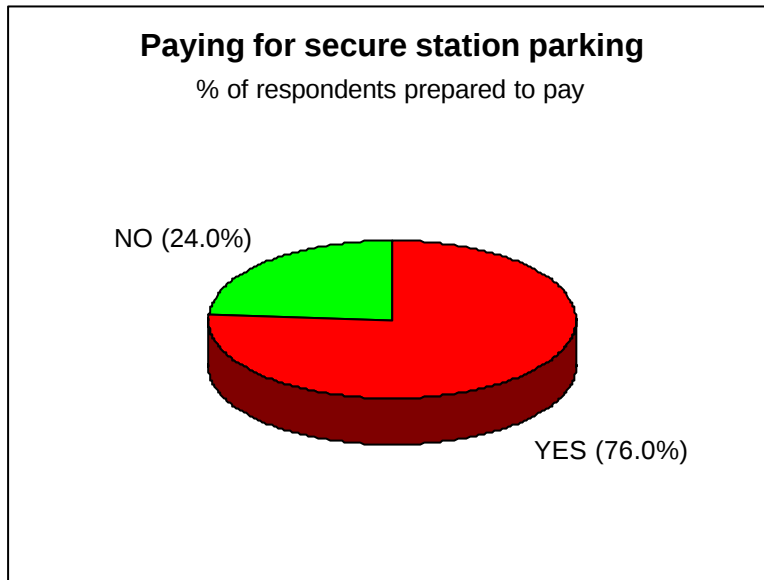
Figure 2



As might be expected, volume and speed of traffic, and lack of cycle lanes/paths were the factors that most felt made it more difficult to cycle to the station. However,

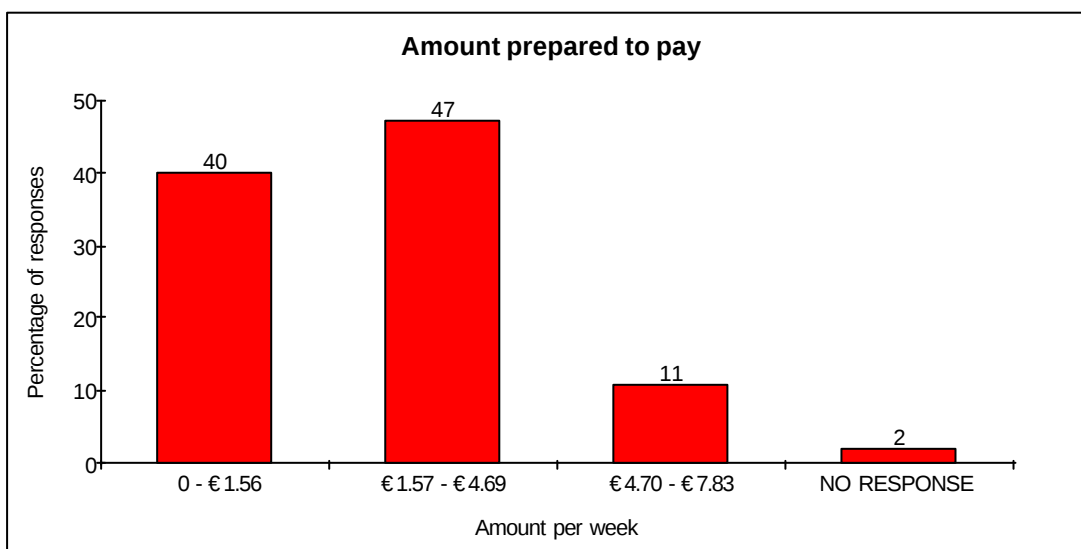
whether looking at all factors (*Figure 1*) or just the most important factor (*Figure 2*) for each respondent, the security of cycle parking at the station is in each case ranked second (or joint second).

Figure 3



Surprisingly a large majority, 76%, of the rail passengers surveyed said that they would pay for secure cycle parking (*Figure 3*).

Figure 4



A 47% majority of these people were prepared to pay a moderate amount - between 1.50 and 4.50 per week (*Figure 4*). Currently there is no charge for secure parking i.e. lockers at Sutton Coldfield station and (as previously mentioned) there is a waiting list for this facility. Other stations on the same train line have very little

secure parking. Therefore these findings should be of interest to Centro, the local transport authority, who are responsible for stations and their facilities in this area.

When questioned on the importance of different aspects of cycle parking, respondents largely wanted facilities to be as comprehensive as possible with over 80% considering the different features listed to be either essential or desirable. However the questionnaire did not allow consideration as to whether the aspects listed were economically viable, for example. Nevertheless it was noticeable that the security features of cycle parking were thought more important than those of convenience. 92% stated that parking in a visible location, enclosed, locked and supervised was either essential or desirable, with 85% believing parking in a number of locations and under cover to be necessary.

See Appendix B for other data gathered from the questionnaire.

Bike and ride at other locations

A 1999 British Government paper (3) reported on a project to install secure, covered cycle parking at a number of train stations in Hampshire, England. In this case, secure parking meant Sheffield style stands. Generally the scheme was successful with increases in the number of cycles being parked. At some stations however there were still no cycles parked, even after new equipment enhanced or replaced existing facilities. Clearly availability of cycle parking does not alone influence the decision to cycle.

The problem of cycle parking being underused has also been recently reported at Leeds City Station. This main station in northern England is about to commence with a major refurbishment. The City Council insist that extra cycle parking is included as part of the work, but developers say that approximately 100 stands at 4 sites around the station are currently only 10-15% utilised. However, further investigation reveals an absence of cycle routes to the station, no cycle lockers and that the parking outside is uncovered. More secure and better quality parking could make a difference here, but as ever the key to more cycling is not one initiative, but several at the same time.(4)

Research from the German Transport Ministry (6) found that 40-50% of Bike and Ride users would like supervised cycle parking and would be prepared to pay between 0.50 and 0.80 per day for it. If realised, this demand could not only improve security for existing users, but could also provide the necessary impetus for new cyclists to travel to public transport stops.

A lack of cycle parking spaces may also indirectly stop potential new cyclists from getting on a bike. At some common destinations for cyclists, such as railway stations, bikes may be carelessly parked causing an obstruction to pedestrians. This then adversely affects the image of cycling in the eye of the non-cycling public.

Shopping

In relating shopping journeys to cycle parking, there is a commonly held misbelief that economic progress is only possible through allowing access by car. However, surveys have discovered that in many centres the majority of shoppers arrive by other modes of transport such as buses.(7) In these cases the retail environment is

negatively affected, for example through the building of large car parks, by a minority of shoppers travelling by car. But do motorists always need their car when shopping ? In fact, hardly 25% of motorists leave a shop with 2 or more bags of goods (as opposed to 17% of cyclists).(8) Therefore, three-quarters have nothing to carry, which would stop them from using another method of transport, such as the bicycle.

One of the greatest attractions in cycling is its door to door nature. To maintain this advantage over other forms of transport it is vital that cyclists are allowed access to shopping streets. Secure cycle parking located as close as possible to the most popular destinations is important in encouraging more shopping by bike.

This is confirmed by British research on supply and demand for cycle parking (1), which showed that proximity to destination was the main reason for choosing to park in a certain location. This was especially true for short stay trips, such as those associated with shopping. In addition, when cyclists were asked for suggestions to improve cycle parking facilities, the greatest demand for additional parking was associated with retail development. Figures on distance parked from a destination, indicate that to be well used at a certain location, cycle parking needs to be located within 50m of the destination it is serving. So if cycle parking is to be of value in a shopping area, it needs to be distributed widely across the area, rather than concentrated at a few larger sites. This distribution would permit many intermediate stops without needing to leave the bicycle far away. The shopping journey by bike would be much more convenient.

Commuting

In Birmingham, UK people now travel an average of 21 miles (34 km) per day compared to an average of 8 miles (13 km) in 1958 (9). It is widely accepted that growth in car ownership and the resulting capability to travel further to work is a big factor in this increase. As Jensen points out, increasing trip distances are still the biggest enemy of bicycle use.(4) However, 75% of journeys in the UK are still under 8km and could easily be cycled in less than half an hour.(9) In the UK, strategies to increase cycling have to date tended to concentrate on the journey to work, with attempts to develop cycle routes on main transport corridors and the concept of 'Cycle Friendly Employers'.(10) Cycle parking is of course important at the workplace destination, but to what extent? A survey by Cleary of cyclists at three main companies in the city of Nottingham, England (11), produced the following list of measures seen as necessary to help cyclists:

Measures to alleviate drawbacks to cycling	% of all responses
More cycle facilities	25.6
Promote modal shift	9.7
Provide secure cycle parking facilities	6.9
Driver education/awareness campaigns	6.8
Better designed facilities to improve safety	5.4

The list continues with a further 18 different but less weighty responses, which were obtained from the cyclists questioned. As in other surveys looking at actions required

to increase cycle use, availability of secure cycle parking appears high on the list, in this case as the third most important factor.

Many companies now believe it important to project an environmentally responsible image. For example, Pfizer Pharmaceuticals in England aims to support local communities and improve the environment. Naturally, providing facilities for cyclists is one of a number of measures to encourage commuters to use sustainable modes of transport.

In addition to cycle parking for its employees, some progressive employers are also providing cycle parking for visitors. This can encourage some travel to meetings and other work-related business to be made by bike. Visitors' cycle parking is also more likely to be prominently located and thus be more easily seen. The association of the company with cycling and vice versa can be beneficial for both.

The facilities available at a person's home (usually the start of a journey) may even discourage them from owning a bicycle in the first instance. In many blocks of flats there is no suitable place to store a bicycle, and so the owner could be faced with the inconvenience of carrying their machine up and down flights of stairs. Without a bicycle of their own they are unlikely to cycle, especially in their everyday journeys.

Leisure

For many people cycling is first and foremost a leisure activity. This is supported by a 1996 study in Germany (states of former West Germany), which showed the following distribution of all cycle journeys according to purpose (12):

Shopping	29 %
Commuting and work related	19 %
Education related	14 %
Leisure	38%

Leisure journeys represent over one third of all journeys by bike. In Germany between the 1980s and 1990s cycle touring had the greatest growth rate of all holiday sports (13). So leisure trips must not be ignored when developing an infrastructure and facilities for cycling.

As leisure journeys generally take longer, the cyclist will probably make more intermediate stops than on other types of journey. If there is nowhere secure to park their bike when stopping at a café, restaurant, shop etc. then they might choose to stop somewhere else. It is however unlikely that someone would decide not to undertake a tour for this reason alone. If a certain route is perceived as having nowhere suitable to break the journey and leave a bike safely, then it is more likely that a different route will be chosen.

In Switzerland the development of a 3300 km national cycle network has included selecting 650 cyclist-friendly hotels. Among other bicycle orientated services the touring cyclist has a safe place to leave their bike. It is important for developers of leisure routes to consider details like this – they could be an influencing factor for someone in choosing a cycling holiday.

Conclusions – the way forward

Both existing research and information gained from my own study convinces me that cycle parking is of great importance for an environment encouraging cycling. Although other factors such as traffic conditions and infrastructure for cycling may be of greater significance overall, the availability and quality of cycle parking is usually close behind. As part of a strategy to encourage more cycle use, cycle parking needs to be appropriately located, sufficient in quantity, easy to use, and available at a variety of destinations.

Parking facilities should also vary according to location. As a general rule, more security will be needed (and demanded) at the start and final destination of a journey, where the bicycle is parked for longer. Intermediate stops on a journey eg. at shops, are normally for a shorter time so convenience is more important than security.

The link between cycle parking and theft is inextricable. Standards of quality for cycle parking (as in the Netherlands) could help cut theft, resulting in more cycling. After having their bicycle stolen, some cyclists may not be willing or able to buy another. More secure provision i.e. lockers, supervised parking and cycle stations will not only reduce theft, but also people's perception of theft. A further positive effect of increasing cycle parking security is that people may be stimulated to buy and use a better quality and safer bike. In turn this may increase their enjoyment of cycling and lead to more cycle use.

In persuading motorists to switch to the bicycle (at least for some journeys) we should focus on the 50% of car journeys in Europe that are less than 5 km. Short trips where the bicycle can more easily replace the car offer the greatest potential for change. The UK especially with its very low level of Bike and Ride journeys needs to concentrate on these trips. Bike and Ride needs to be an integral part of local transport plans.

Many European countries have much work to do before cycling is regarded as a normal form of daily transport, for example as in Denmark. In working towards that goal we should perhaps remember the following:

The enthusiastic cyclist will cycle regardless of poor or non-existent facilities. To persuade the non-cyclist to take up cycling you have to make life easier for them.

Notes

1. (1997) "Supply and Demand for Cycle Parking", Traffic Advisory Unit, The Department of the Environment, Transport and the Regions
2. (1999) "Cycle Parking Examples of Good Practice", Traffic Advisory Unit, The Department of the Environment, Transport and the Regions
3. (1999) "Improved cycle parking at South West Trains' stations in Hampshire", Traffic Advisory Unit, The Department of the Environment, Transport and the Regions
4. (1999) Jensen, Søren Underlien, "3P Cycling Promotion", VeloCity Falco Lecture Prize 1999
5. (1997) Gyukits, Hartmut, "Verkehrliche, Wirtschaftliche und Planerische Aspekte des Bike+Ride-Verkehrs im Verkehrsverbund Rhein-Ruhr, das Fahrrad als Ersatz

- für öffentliche Zubringerverkehrsmittel”, Allgemeiner Deutscher Fahrrad-Club, Forschungsdienst Fahrrad
6. (1997) Bundesministerium für Verkehr, “Fahrrad und ÖPNV/Bike & Ride – Empfehlungen zur Attraktivitätssteigerung des Fahrradeinsatzes für zu und Abbringerfahrten sowie Fahrradmitnahme im ÖPNV”, Allgemeiner Deutscher Fahrrad-Club, Forschungsdienst Fahrrad
 7. (1996) Carley, “Sustainable Transport and Retail Vitality”, Historic Burghs Association of Scotland
 8. (1999) Dekoster, J., Schollaert, U., “Cycling: the way ahead for towns and cities”, European Commission
 9. (1998) Birmingham City Council Transportation Department, “Visions – A Transport Strategy for Birmingham”
 10. (1995) Mathew, Don, “More Bikes – Policy into Best Practice”, Cyclists’ Touring Club
 11. (1993) Cleary, J., “The Greater Nottingham Demonstration Cycle Route Project”, VeloCity Conference 1993
 12. (1996) Kloas, J., “Die Entwicklung des Fahrradverkehrs in Deutschland”, Allgemeiner Deutscher Fahrrad-Club Nord Rhein Westfalen, Velo-Regio Fahrradkongreß Troisdorf, Kongreßdokumentation; Düsseldorf
 13. (1999) “Erster Bericht der Bundesregierung über die Situation des Fahrradverkehrs in der Bundesrepublik Deutschland”, Bundesministerium für Verkehr, Bau- und Wohnungswesen