# Electronic Supplementary Material

*The role of bicycle sharing systems in normalising the image of cycling:
an observational study of London cyclists*

Selection of docking stations

For each of our three observation periods (weekday peak, weekday inter-peak and weekend), five samples of stations were selected at random. The sample covering the widest range of areas was then chosen. Docking stations were sampled without replacement, and docking stations within 300m of a previously-sampled station were excluded. The selected docking stations are presented in Supplementary Figure 1.

Supplementary Figure 1: Map showing LBSS docking stations selected for observational fieldwork at different times of the day and week
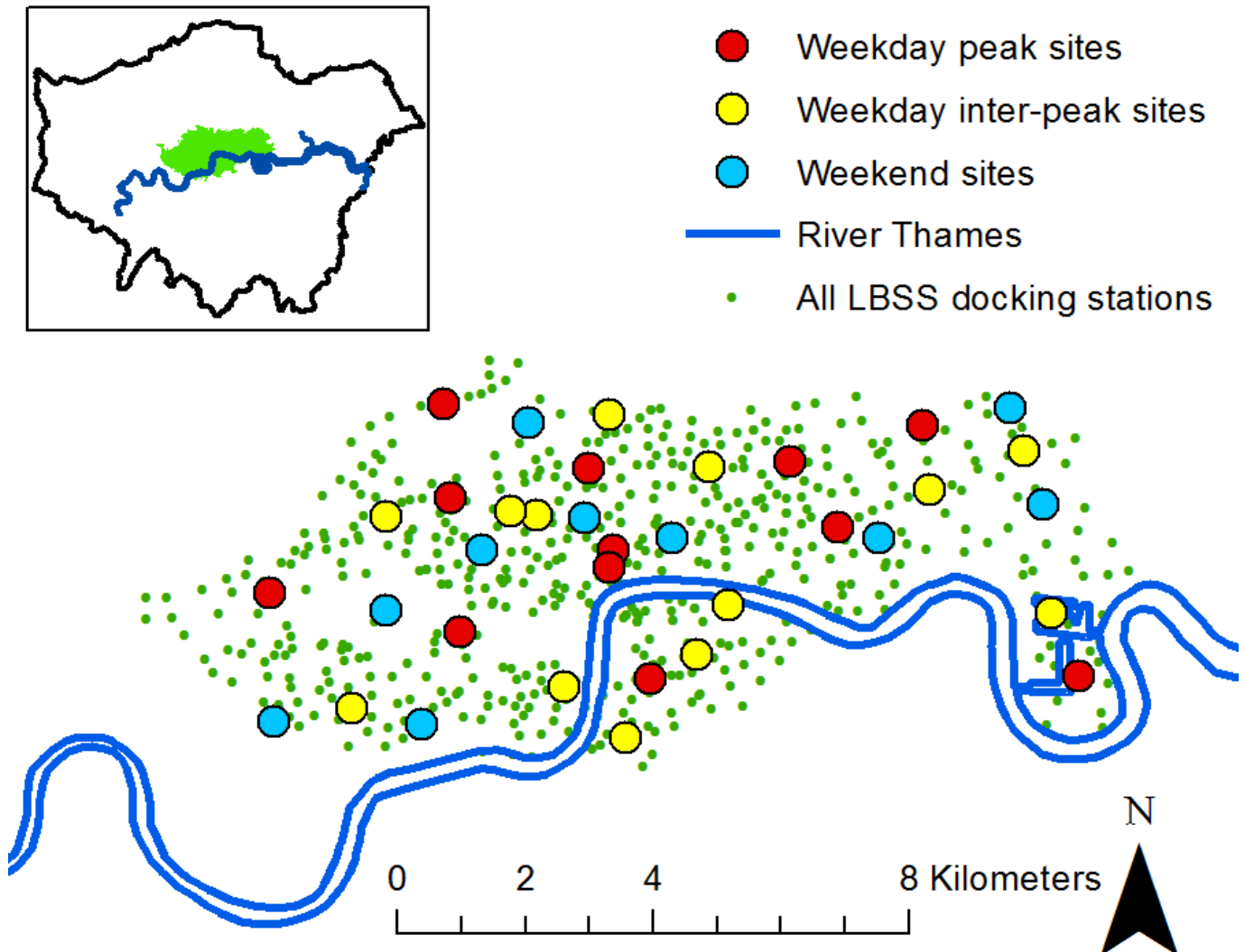
LBSS=London bicycle sharing system. Insert of map in the top left corner shows the area of Greater London served by the scheme

Random intercepts model

We accounted for differences between sampling sites by fitting two-level random intercept logistic regression models of bicycles nested within sites:

$$Y_{ij} = \beta_0 + \beta_1 x_{1ij} + ... + \beta_p x_{pij} + S_j + e_{ij}$$

Where Y_{ij} is the outcome of interest for the ith bicycle in the jth site; $\beta_1...\beta_p$ are the parameters for the fixed effects of interest ($x_{1ij...}x_{pij}$), for example LBSS status; S_j is a random intercept for the outcome in the jth site; and e_{ij} is the residual error term. Random intercepts were assumed to be normally distributed, allowing different variance parameters for each random intercept and the residual error, and were estimated using adaptive Gaussian quadrature.

Sensitivity analyses, excluding sites with a high proportion of recreational cycling

Two of the sites selected were in London's parks and were sampled at times when a large proportion of the cyclists appeared to be cycling for recreation not transport. These were
1. Outer circle of Regent's Park, sampled 7:00-7:30am on a weekday. Although this is a commuting route for bicycles, it is also used by sports cyclists to train individually or in groups.
2. Car park in the centre of Hyde Park, sampled 15:25-16:00pm on a Sunday. This site is next to a road and can be used by cars and bicycles to travel from North to South across this part of London. It is, however, also part of a network of off-road cycle lanes around Hyde Park which are very popular with recreational cyclists.
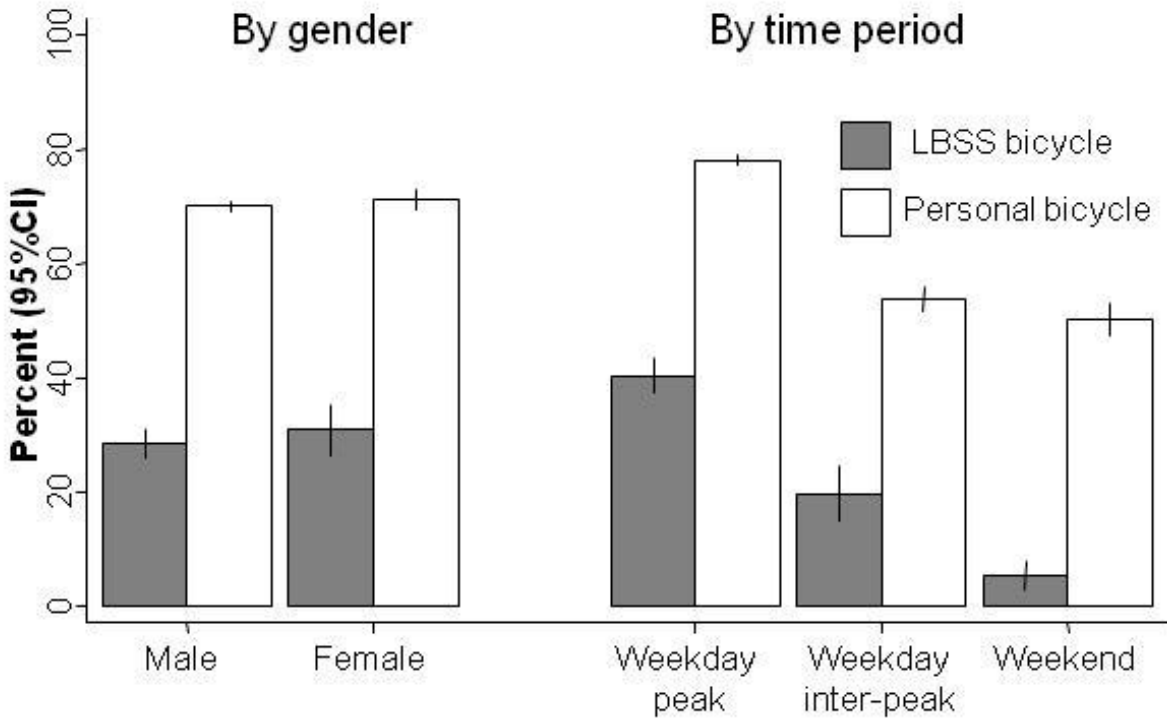
Supplementary Table 1 and Supplementary Figure 2 show the results of our analyses repeated excluding these two sites.

Supplementary Table 1: Predictors of wearing different types of cycling clothing, excluding two sites in parks with a high proportion of apparently recreational cycling (N=3212 bicycles)

		Wearing a helmet		Wearing high-visibility clothes		Wearing sports clothes		Wearing any cycling clothing	
		%	Adjusted OR (95%CI)	%	Adjusted OR (95%CI)	%	Adjusted OR (95%CI)	%	Adjusted OR (95%CI)
Bicycle	LBSS (N=416)	23%	1	15%	1	2%	1	29%	1
	Personal (N=2796)	64%	7.67 (5.86, 10.03)	36%	3.20 (2.39, 4.27)	23%	14.60 (7.45, 28.61)	70%	7.26 (5.62, 9.39)
Gender	Male (N=2460)	57%	1	33%	1	23%	1	65%	1
	Female (N=752)	62%	1.15 (0.95, 1.40)	36%	1.10 (0.92, 1.32)	11%	0.40 (0.31, 0.51)	65%	0.96 (0.79, 1.16)
Time period	Weekday peak (N=2202)	68%	1	41%	1	24%	1	74%	1
	Weekday inter-peak (N=582)	41%	0.35 (0.20, 0.61)	21%	0.44 (0.29, 0.67)	12%	0.40 (0.24, 0.67)	50%	0.36 (0.21, 0.62)
	Weekend (N=428)	35%	0.29 (0.15, 0.54)	12%	0.25 (0.15, 0.41)	14%	0.39 (0.21, 0.72)	41%	0.26 (0.14, 0.49)

CI=confidence interval, LBSS=London bicycle sharing system, OR=odds ratio. Adjusted odds ratios adjust for all variables in column.

Supplementary Figure 2: Proportion of cyclists wearing any of the three types of cycling clothing recorded, excluding two sites in parks with a high proportion of apparently recreational cycling (N=3212 bicycles)

CI=confidence interval, LBSS=London bicycle sharing system.