Understanding barriers to participation across gender, age & disability

Dr. Rachel Aldred

University of Westminster

www.rachelaldred.org

@RachelAldred

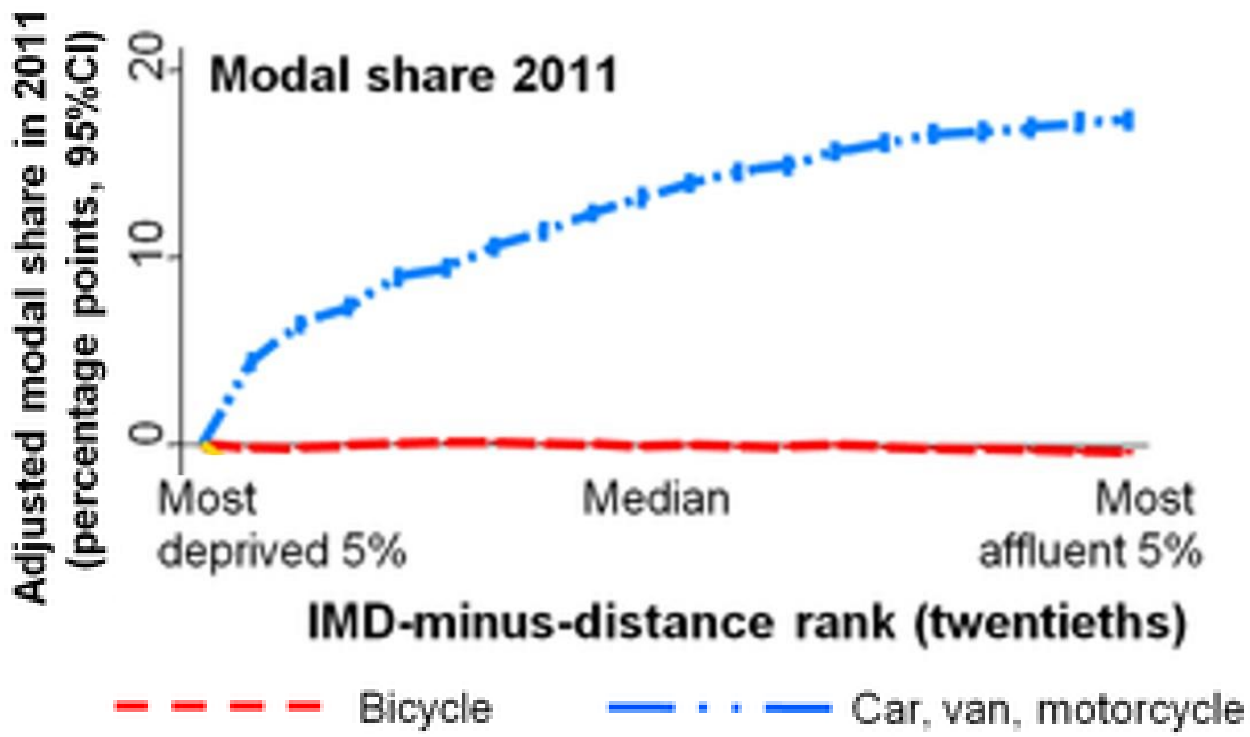
Cycling is… or is it?

- **“Not for disabled people”**
- “A white man’s game”
- **“Only for the young and fit”**
- “A middle class religion”

…or a middle class myth?

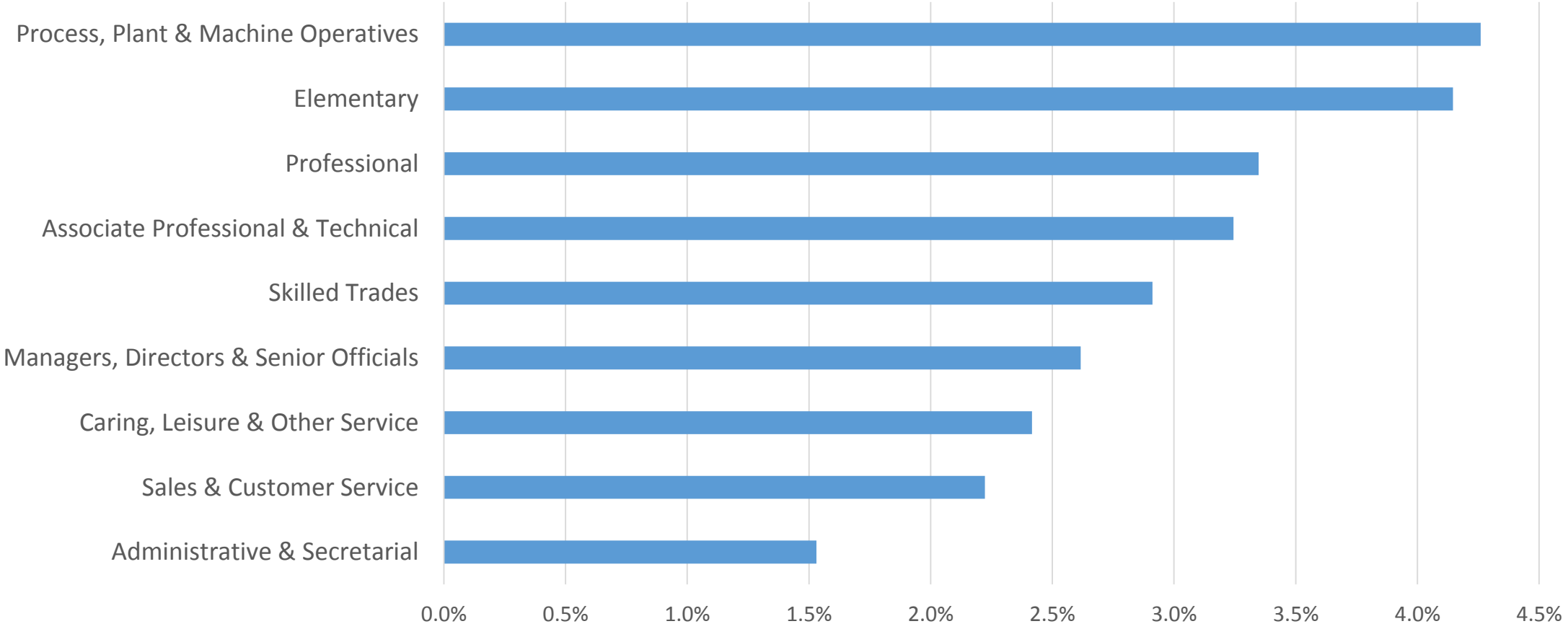
Area-level deprivation and cycling to work

- In 2011 Census, no association with greater affluence (at local area level) and cycling to work)
- By contrast use of private motorised transport associated with increased affluence



Source: Walking, cycling and driving to work in the English and Welsh 2011 census: trends, socio-economic patterning and relevance to travel behaviour in general, A Goodman
PloS one 8 (8), e71790

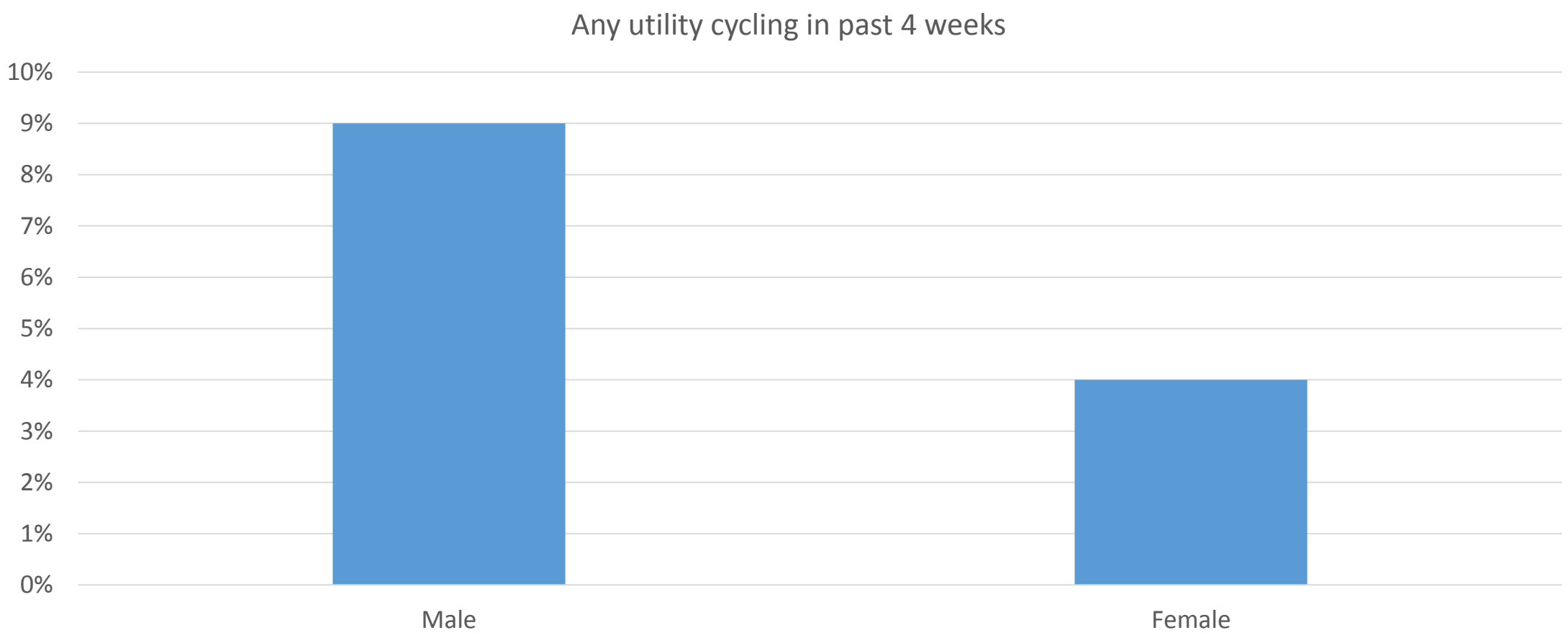
Cycle commuting by occupational group, UK



Source: Labour Force Survey, Autumn 2012

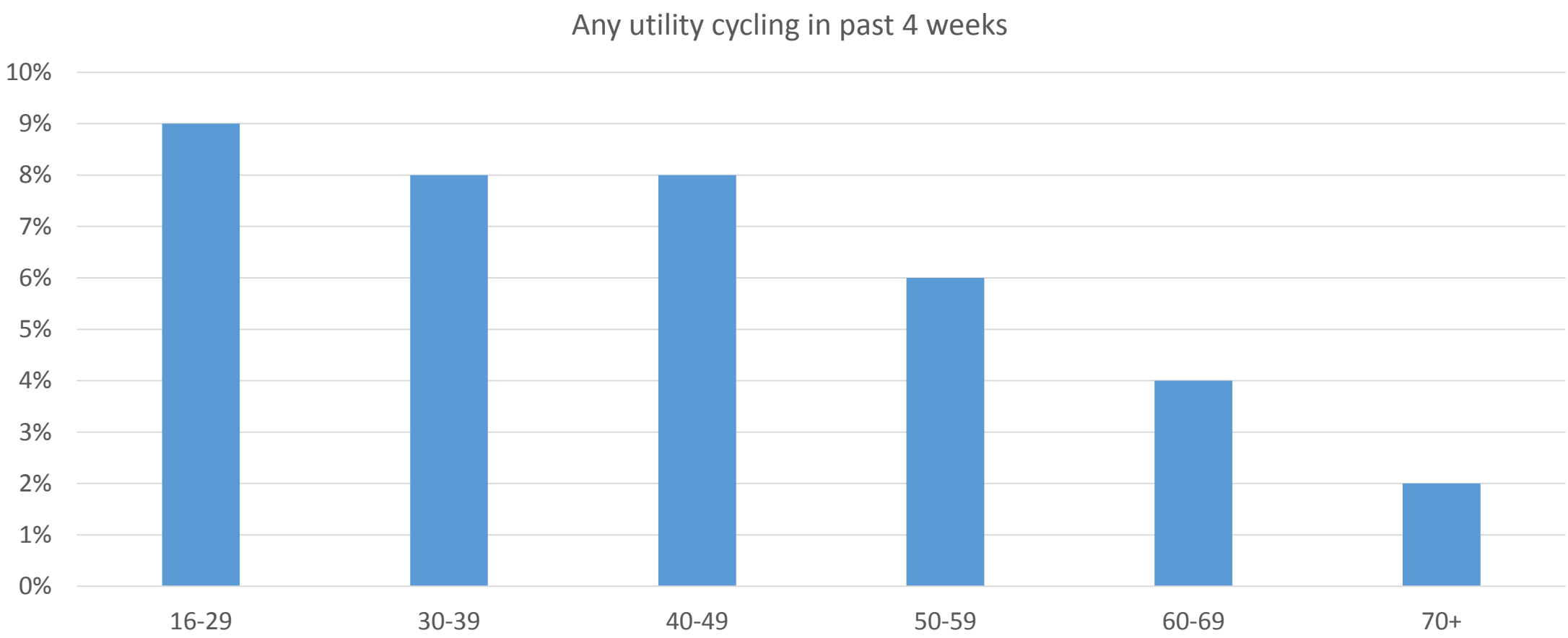
Inequalities in participation by gender, age, ethnicity, disability (England)

Gender



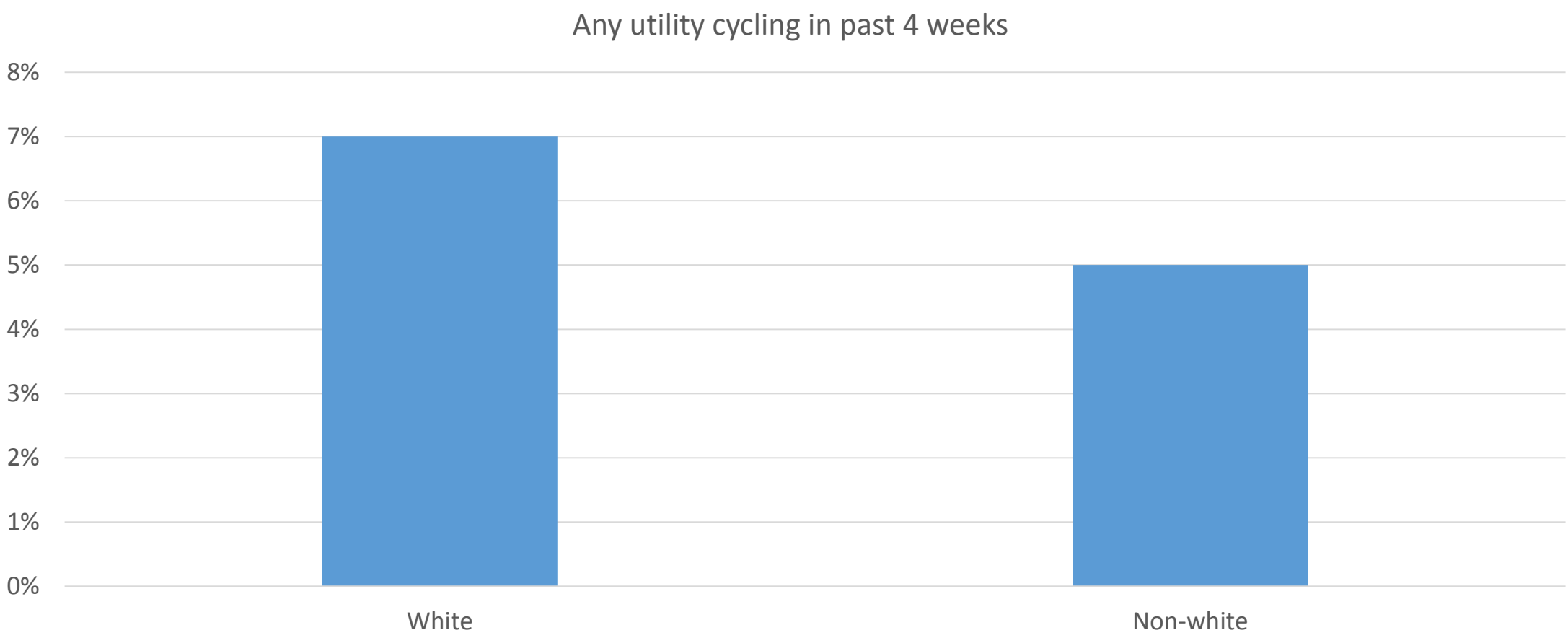
Source: analysis of APS data, collected 2011/12 to 2015/16, Aldred and Goodman, in press

Age



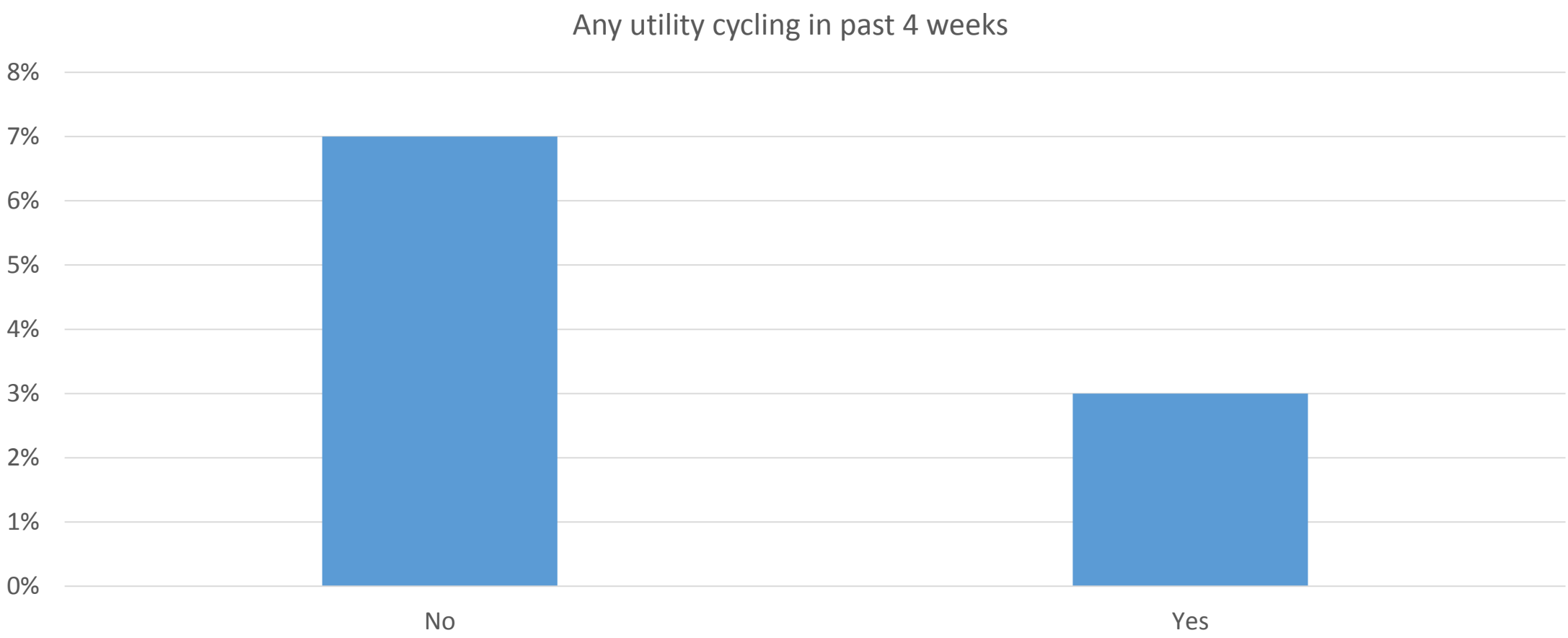
Source: analysis of APS data, collected 2011/12 to 2015/16, Aldred and Goodman, in press

Ethnicity



Source: analysis of APS data, collected 2011/12 to 2015/16, Aldred and Goodman, in press

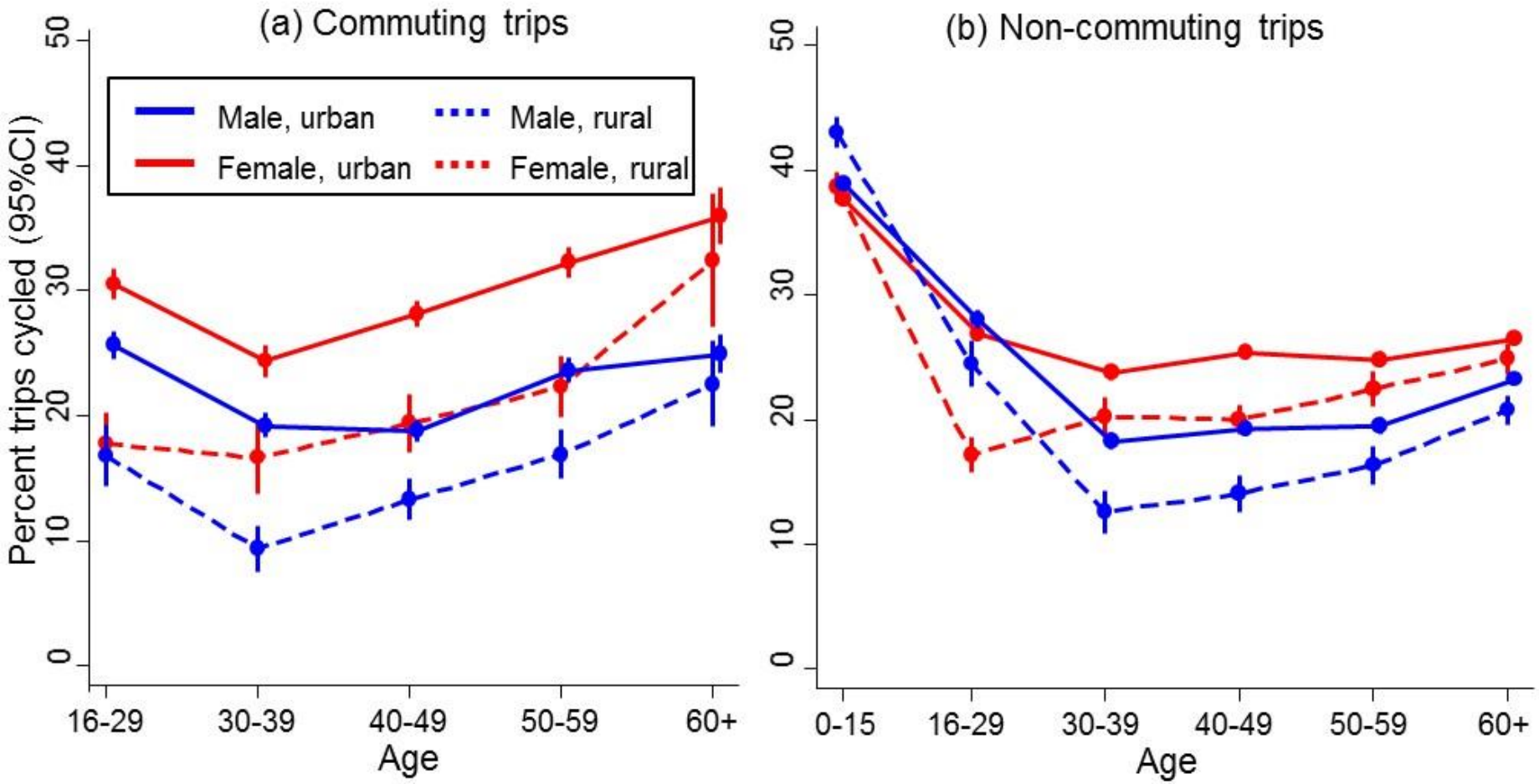
Disability



Source: analysis of APS data, collected 2011/12 to 2015/16, Aldred and Goodman, in press

Are these inequalities natural?

E.g. gender and age in the Netherlands



Source: DfT (2016) National Propensity to Cycle Tool Stage 1 Report, Appendix 8 https://www.gov.uk/government/publications/national-propensity-to-cycle-first-phase-development-study .
NTS (England) analysis by Anna Goodman.

Or disability in England

- Census data shows that 5.1% of cycle commuters in England and Wales are people whose day-to-day activities are limited in some way (vs. 6.8% of all commuters)

- As with gender, age, and ethnicity, cycling rates vary with rates of cycling in the local area (from 0.2% to 25.9% for disabled commuters)

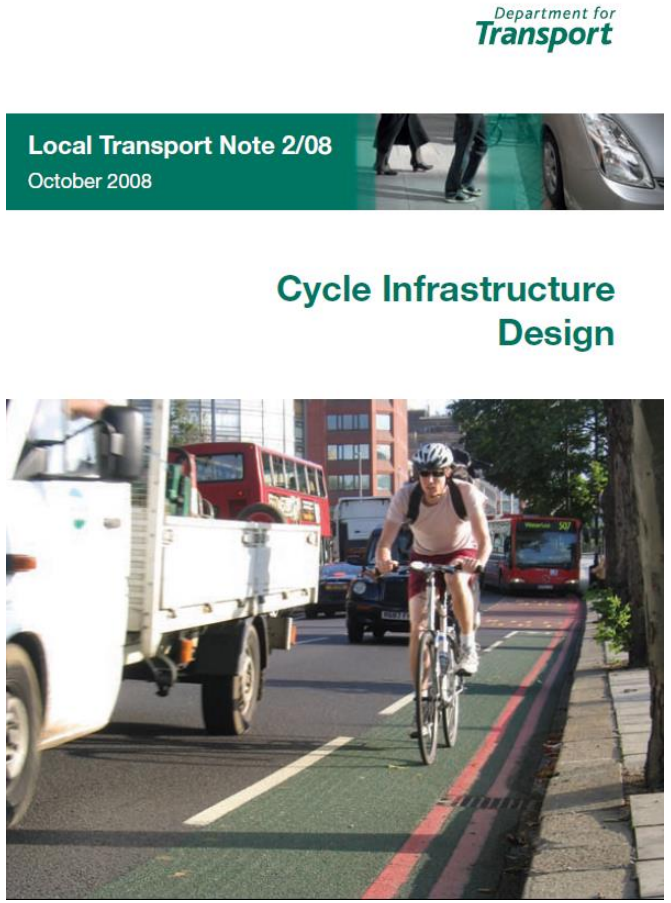
(i) Cycle commute mode shares of 25% do exist within in England for ‘under-represented’ groups & (ii) worryingly though, between 2001-11 places where cycle commuting grew didn’t get more age- or gender-equal*

*Does more cycling mean more diversity in cycling? R Aldred, J Woodcock, A Goodman Transport Reviews 36 (1), 28-44

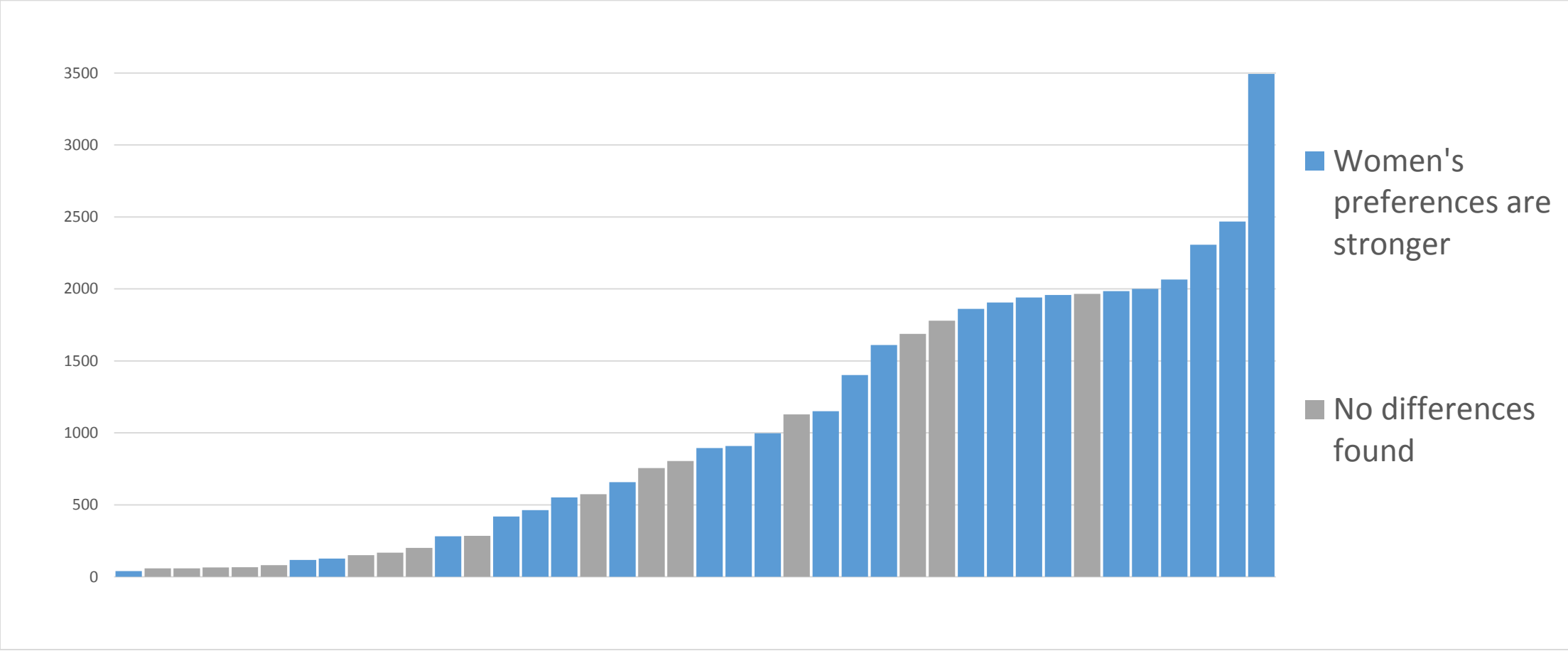
Why do inequalities exist & what can we do?

1. Improve conditions for cycling

- Poor quality cycling environments have disproportionate impacts on some or all under-represented groups.
    - E.g. lack of protection from motor traffic, obstacles, detours



(a) Gender and protection from motor traffic



Cycling provision separated from motor traffic: a systematic review exploring whether stated preferences vary by gender and age, R Aldred, B Elliott, J Woodcock, A Goodman, Transport Reviews 37 (1), 29-55

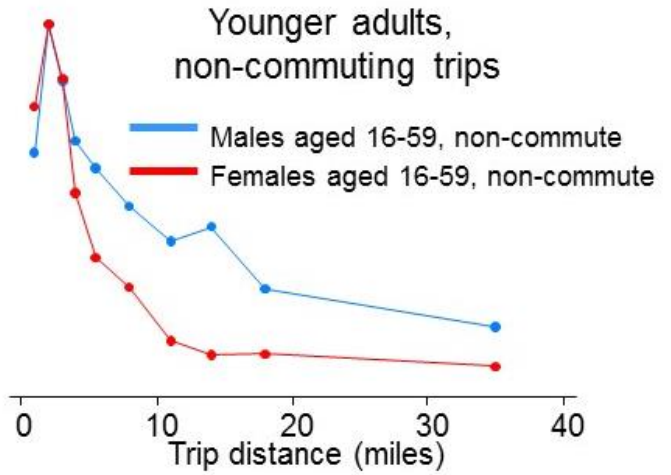
(b) Obstacles

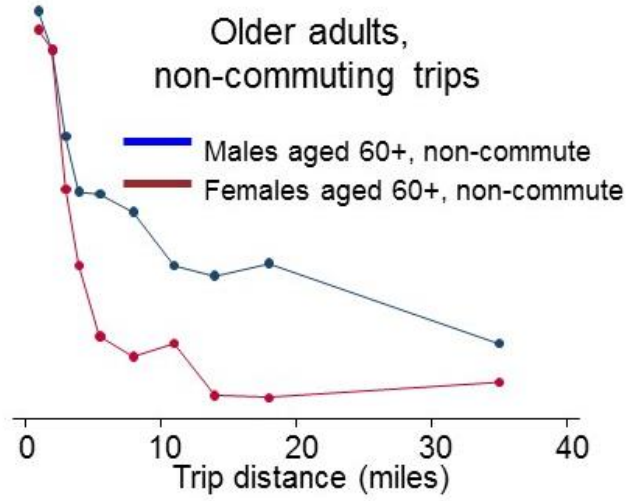
Pictures: Push Bikes (above), Ron Reid (right)

(c) Detours

- The probability of cycling a trip declines faster among older adults (60+) than among younger adults with increased distance.

- This ‘distance decay’ is also steeper for women than for men.

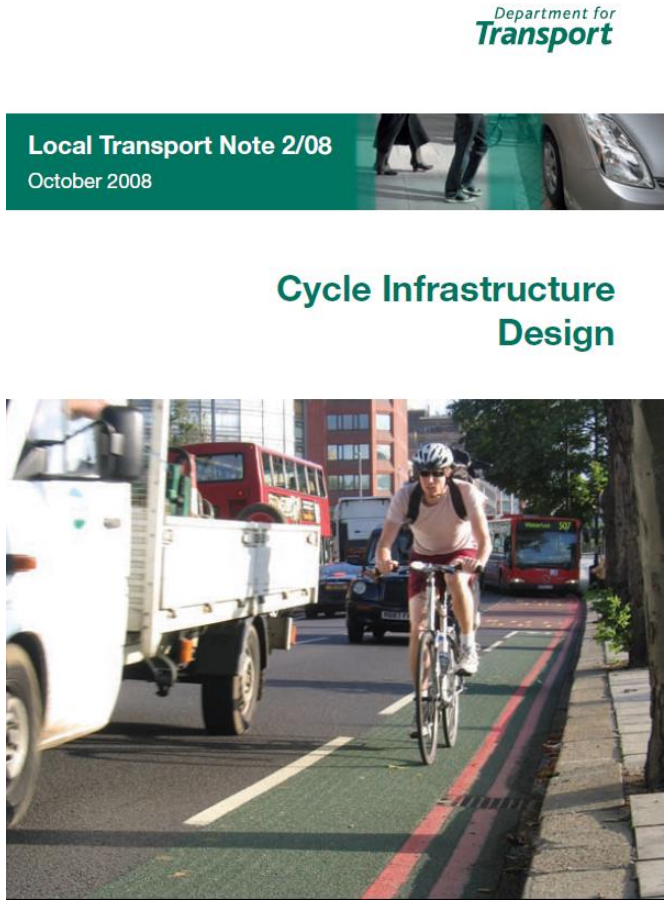




Source: DfT (2016) National Propensity to Cycle Tool Stage 1 Report, Appendix 8
https://www.gov.uk/government/publications/national-propensity-to-cycle-first-phase-development-study .
NTS (England) analysis by Anna Goodman.

2. Take an inclusive design approach

- We need to look at cycling from the perspective of under-represented groups
  - Because these groups are often more sensitive to generally poor cycling conditions, this will help improve things for all
  - It will also help us address additional, more specific barriers to participation



Modelling World 2014 Conference Programme

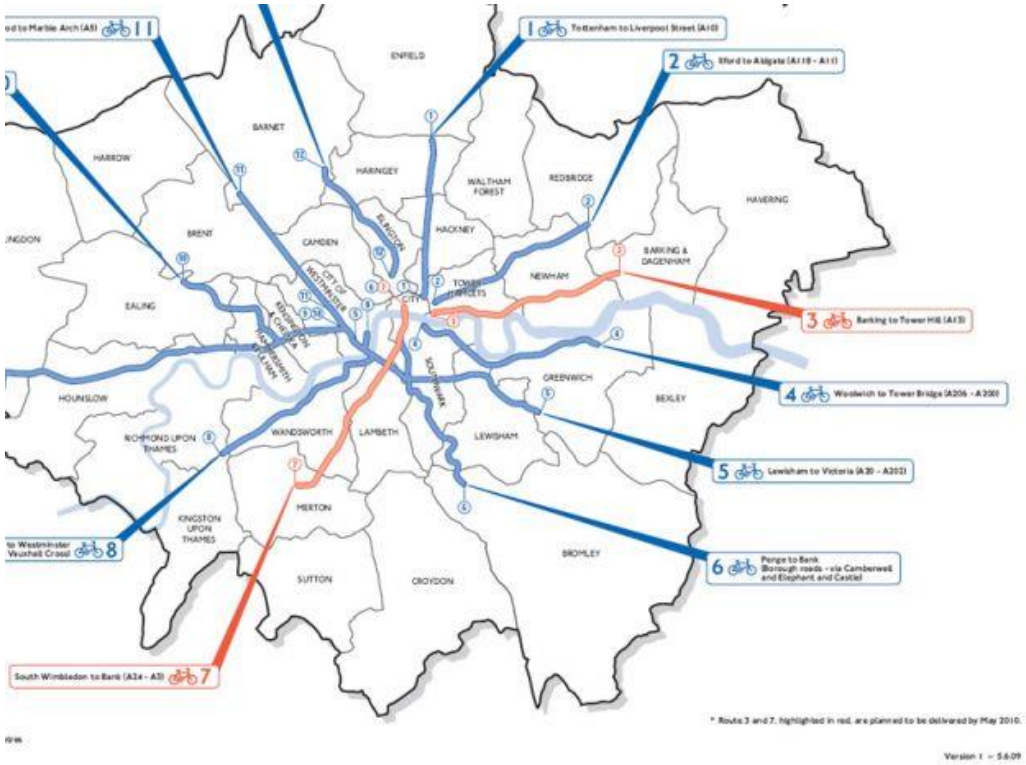
5 June	India Room	John Major Room	Executive Double Box 52
09.00	**Registration opens** in the main England Suite exhibition area Tea & Coffee served		
09.30	**Plenary: Evolving analytical approaches to regional and national infrastructure projects** Chair: *Tom Van Vuren, Mott MacDonald* • *Dominic Walley, Director, Connected Economics* • *Henry Overman, Professor of Economic Geography, London School of Economics (LSE)*		
11.00	Morning tea and coffee served in the England Suite exhibition area		
11.30 Choose **1** of **3**	**Modelling for walking and cycling** Chair: Tom Van Vuren, Mott MacDonald • *Yaron Hollander, Policy Appraisal & Sub-Regional Modelling Manager, Transport for London* Moving cycling into mainstream transport assessment • *Rachel Aldred, Senior Lecturer in Transport, Faculty of Architecture and the Built Environment, University of Westminster* Why has modelling often marginalised cycling? Views from the Modelling on the Move series • *James Woodcock, Senior Research Associate, Public Health Modelling, UKCRC Centre for Diet and Activity Research (CEDAR), University of Cambridge* Modelling cycling: health, culture and complexity	**Current and future challenges/opportunities** • *Peter Jones, Professor of Transport and Sustainable Development,University College London* Beyond the limitations of current transport modelling approaches • *John Miles, Arup/Royal Academy of Engineering Professor of Transitional Energy Strategies, University of Cambridge* Intelligent mobility: modelling the future • *Dr Alex Erath, Future Cities Laboratory (FCL), Swiss Federal Institute of Technology in Zurich, Singapore ETH Centre* Visualising and analysing agent-based model data for decision support	**Big data and urban analytics for future mobility** Chair: Miller Crockart, PTV Group • *Rick Robinson, Executive Architect, IBM Smarter City solutions* The sharing economy and the future of movement in smart, human-scale cities • *Paulo Humanes, Director, Business Development at PTV Group, & Devrim Kara, PTV Group* Modelling sustainable, liveable and safe cities • *Josep Maria Aymamí, Senior Project Manager, TSS-Transport Simulation Systems* It's about (real) time: simulation-based decision support systems

More research is needed on…

Issues disproportionately affecting under-represented groups may include

- Social safety, fear of crime
- Difficulty parking bikes in flats, shared accommodation
- Cost in accessing adapted bikes and e-bikes
- Harassment and targeted violence in public space

And when good routes are built, what origins & destinations do they serve?



Key Points

- Inequalities are *not* natural – we need to take a systemic view & look at structural causes
  - People don't 'choose not to cycle', rather most people have been excluded from cycling
- Improving cycling conditions generally will do a lot for groups under-represented in cycling – especially creating high quality, direct routes without obstacles
- And we also need to take an inclusive design approach
  - To overcome planning assumptions (e.g. just building for commute destinations, not shops and schools) that might cause disadvantage
  - And to address more specific barriers (e.g. social safety, harassment, cost)

Understanding barriers to participation across gender, age & disability

Dr. Rachel Aldred

University of Westminster

www.rachelaldred.org

@RachelAldred