

## Rachel Aldred

Why has modelling often marginalised cycling?

Views from the Modelling on the Move series



## What the research tells us.....

1. Cultural & qualitative change is key but poorly understood
2. Cycling needs to be understood *as cycling*
3. Choosing cycling involves thresholds and trade-offs
4. Yes, we need more data but can do a lot in the meantime

# Cultural & qualitative change

## Cities could look very different

- Even apparently small shifts imply major change
  - E.g. LDN 1% → 2% → 5%
- At what point does junction modelling start to break down?
  - 20% of flow?



## Attitudes are changing

- Balance of symbolic benefits is changing
  - Cars no longer ‘cathedrals’
- Perceived benefits of other modes ...
  - Communication
  - Being outside
  - Physical activity

Implications for travel time paradigm...

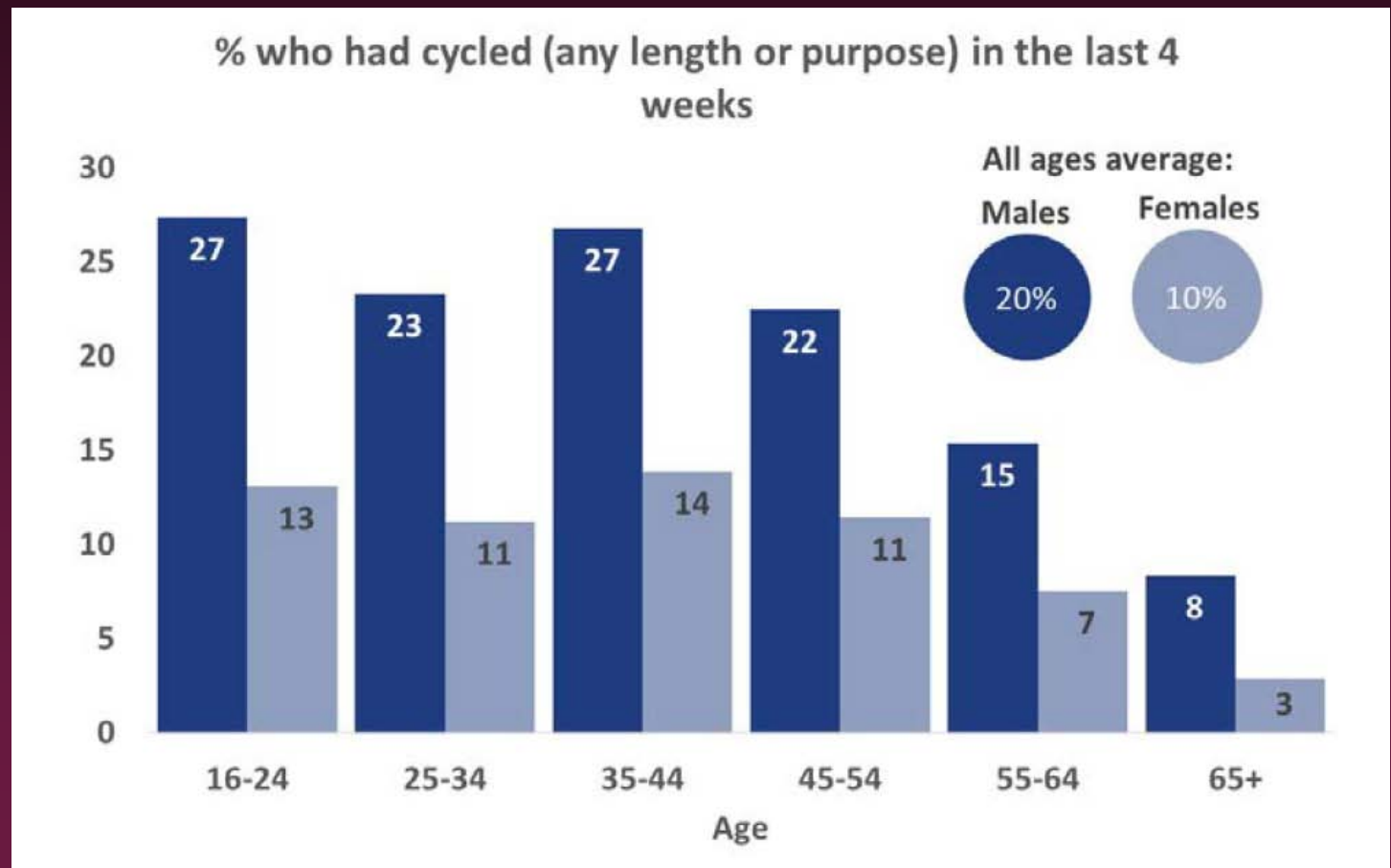
“I work in an office and I love being outside so [cycling] gives that opportunity.”

“[If] I biked in, I’m certainly more awake and that bit of exercise has set me up for the day.”

(Source: Cycling Cultures Research Project, 2010-11)

# Local Area Walking and Cycling Statistics: England 2012/13

## Cyclists could look very different...



High-cycling contexts see very different patterns...



## Understanding the changes under way

### Cycle Infrastructure Design



Demography  
& Dynamics

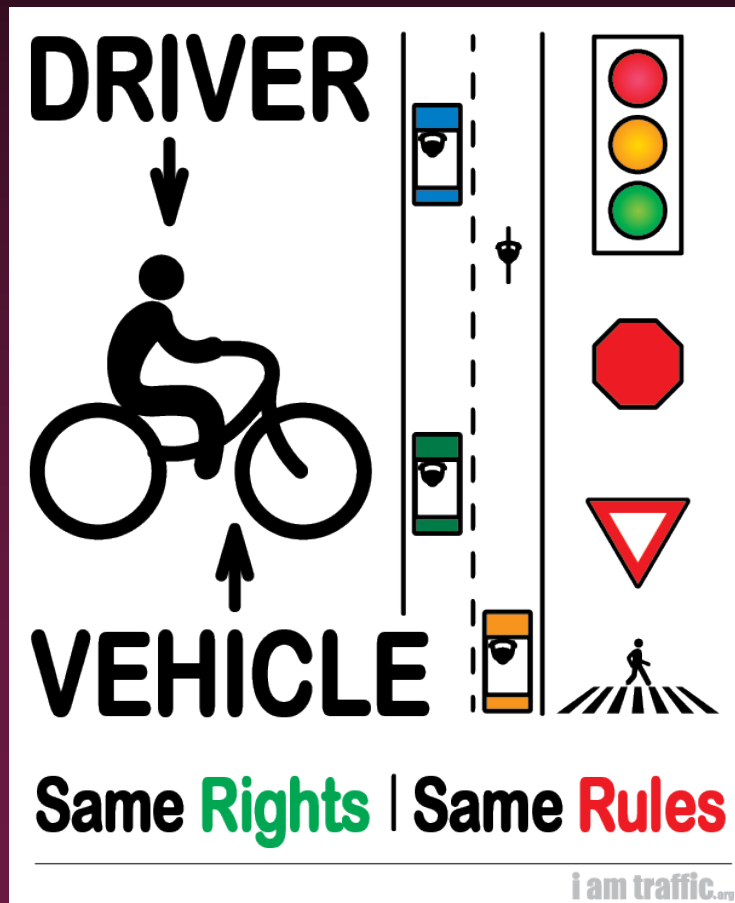
Social  
observation

Social  
interaction

# Cycling IS cycling



## Cycling is cycling



Before it is

traffic, slow modes,  
healthy modes,  
active modes,  
green modes,  
sustainable modes,  
'walking and  
cycling'.....

'PCU factor for cycle traffic will likely vary by type of user and volume of cycle traffic' (John Parkin, 2014)





## Cycling behaviour



- Cycling behaviour is not inherently odd / difficult / unpredictable
- It's a paradigm thing...

# Thresholds and trade-offs



# Thresholds & trade-offs: explaining 'irrationality'

Find Property To rent For sale My saved properties Cool things Login or register

## Is it faster to cycle or use public transport in London?

Click on the map below where you want to travel to/from, and we'll calculate where it is faster to cycle or use public transport!

Public transport faster Cycling faster

Add  minutes to cycle times (e.g. for showering)

Show underground lines

Map data ©2014 Google Terms of Use Report a map error

## Not even in the choice set for many

- “I am too nervous to cycle in London given the number of accidents in which cyclists are involved in on any routes I could take to work.”
- “I do not have enough confidence and still fear of the real dangers that exist on London roads for cyclists. Therefore the bus, tube and walking will remain my mode of transport and will only alter between these for the foreseeable future.”

(Source: Westminster University Travel Survey 2013-4)

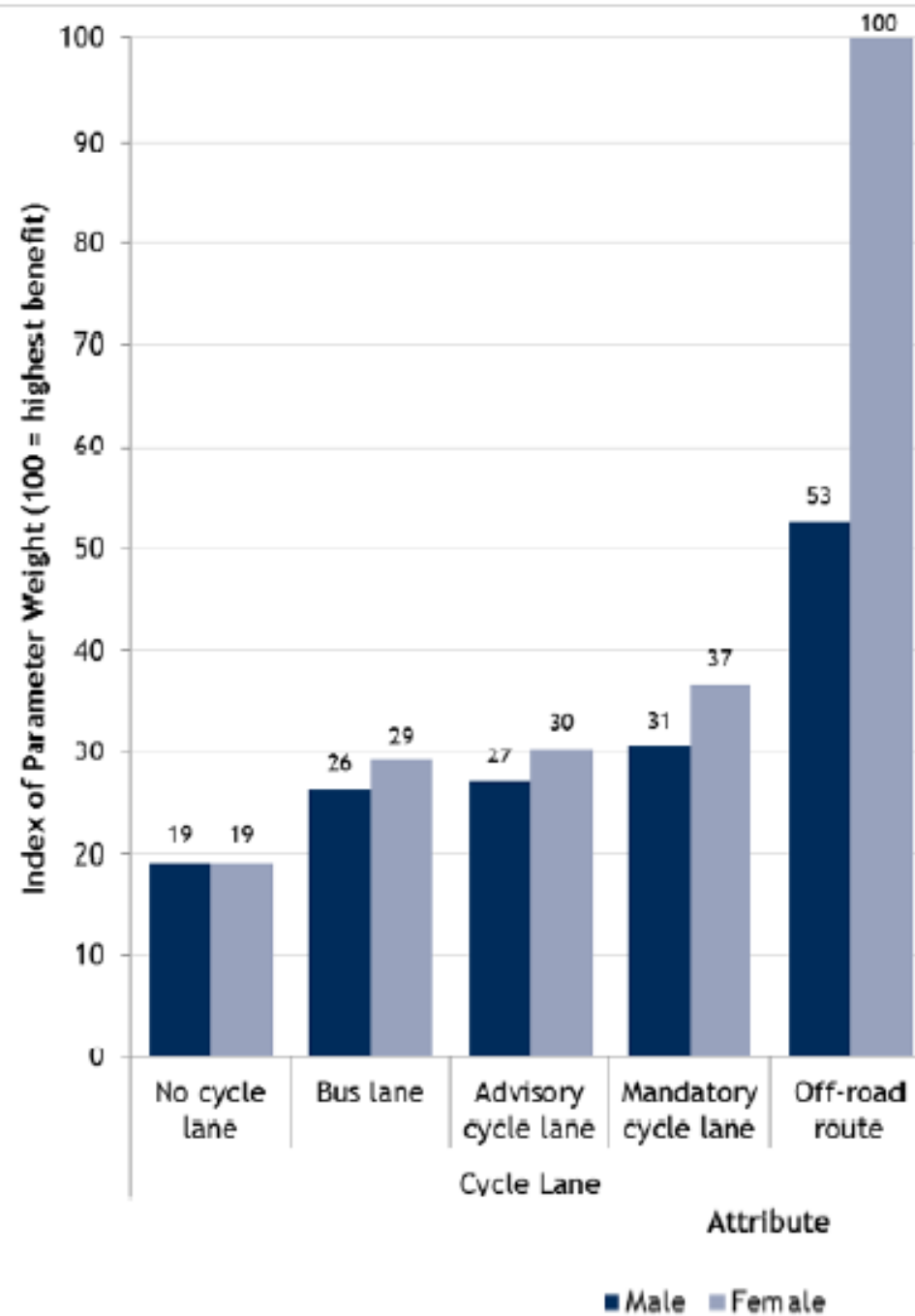
## Different thresholds, different trade-offs...

- “[O]ne of my best friends, she’s just started cycling two weeks ago [...] I’m trying to make her assertive. [...] I’m not saying we all have to go around being aggressive [...] but I think it’s more dangerous to be timid in the city.”
- “[It’s] just having the sort of the guts to say, “Okay, I’m a user of the road and I’m not afraid of you. You can do all those things but I’m where I want to be. You’re threatening me so I’m going to be in the middle of the road”.”

(Source: Cycling Cultures Research Project, 2010-11)



Source: adapted from TfL 2012,  
available at  
<https://www.whatdotheyknow.com/request/143729/response/398827/attach/3/Final%20report%20CRC.pdf>



## Thresholds and trade-offs: thoughts

- Use of MCA could incorporate thresholds
- We should measure ‘cycle-ability’ for different groups and journey purposes
  - So we could for e.g. say:

This scheme will increase delays to commuting motorists *by X*, however the higher quality cycling environment will mean that *A%* of children will be able to cycle to the local school, proportions of commuting residents able to cycle to work will rise *from B% to C%*, and *D%* of older residents will be able to cycle for local utility and leisure trips.

# Do We Need Lots More Data?

## Lack of data is not an excuse

- Do we lack data on cycling?
  - Yes, BUT...

[There] are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns, the ones we don't know we don't know.

Donald Rumsfeld, when US Secretary of Defense

- Many big cycling research gaps are 'known unknowns', about parameters not structure

## Filling in the known unknowns

Data collection/  
analysis and model  
development can  
happen in tandem



Some key areas in my view...

- Cycling with/by children
- Bus/bike interaction
- Modelling cultural change – social influence
- ‘Stuff’ – danger – hassle nexus
- Near misses & implications for infrastructure

## Conclusions

1. We need to plan for not just *more* but *different* cycling
2. Cultural change taking us beyond the travel time paradigm
3. People on bikes are people on bikes
4. Differential take-up thresholds and trade-offs
5. We need data but can do a lot even with gaps in the data  
Breaking out of the circle of no funding/no policy  
interest/no uptake/no research/no data/no modelling.....

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