



**cycle
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DESIGN FOR LIFELONG
HEALTH & WELLBEING

**Understanding cycling in
later life and the health and
wellbeing benefits of
velomobility in age-
friendly communities**



BSG Conference | Newcastle | 3 July 2015
Dr Ben Spencer | Oxford Brookes University
on behalf of the cycle BOOM team



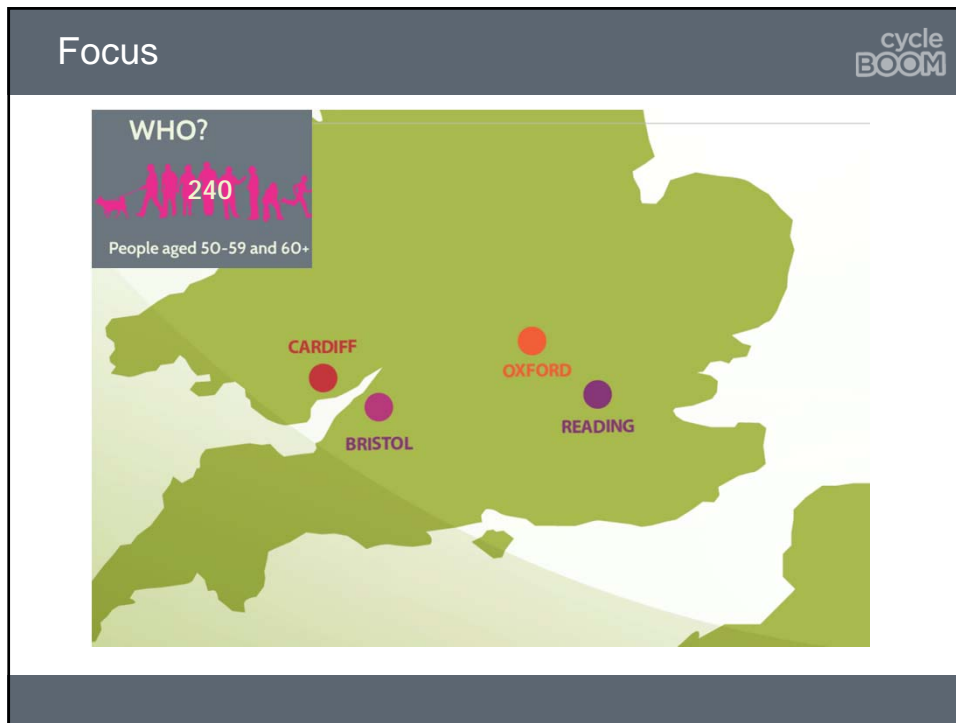





Design for Wellbeing: Ageing & Mobility in the Built Environment **cycle
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 Call 2012
Announced March 2013 | Commence October 2013

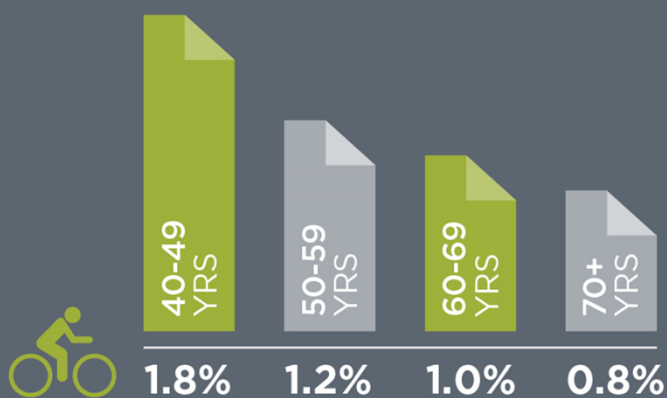
- Understanding the relationship between the built environment, mobility and activity in older populations
- [Providing] Evidence based and user-centred design and engineering approaches, in the context of the whole system, that are driven by a desire to increase and enable mobility and activity, decrease isolation and enable greater independence
- Understanding what environmental designs encourage activity/inactivity and how these can be engineered to facilitate older users to increase their physical activity





LOW LEVEL OF CYCLING AMONG OLDER PEOPLE IN THE UK

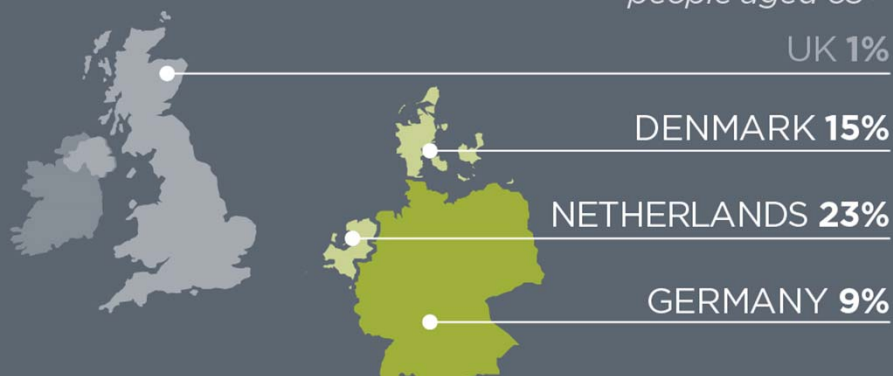
The share of journeys made by bicycle is low for all all age groups, but particularly low in older age.



DIFFERENT STORY ELSEWHERE

Cycling is an important method of transport in older age in other parts of Northern Europe.

*Share of journeys by
people aged 65+*



OLDER PEOPLE MAKE SHORTER, MORE LOCALISED CYCLE JOURNEYS

Older people's cycle journeys are **shorter** than younger adults' and are **usually for personal business or social purposes** (as opposed to commuting)

70+
YRS



1.8 miles

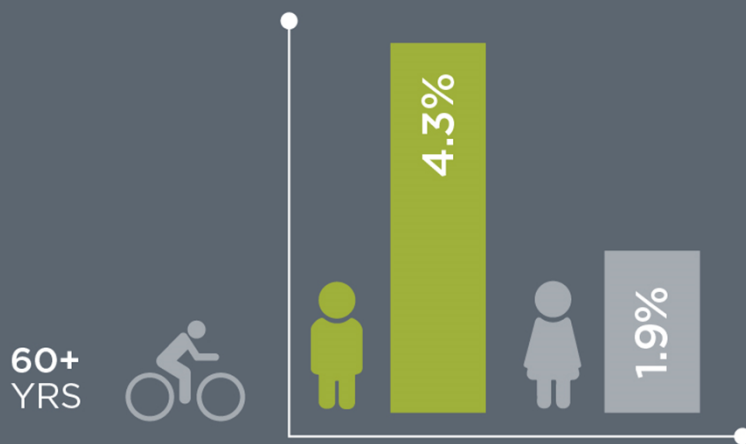
40-49
YRS



4.8 miles

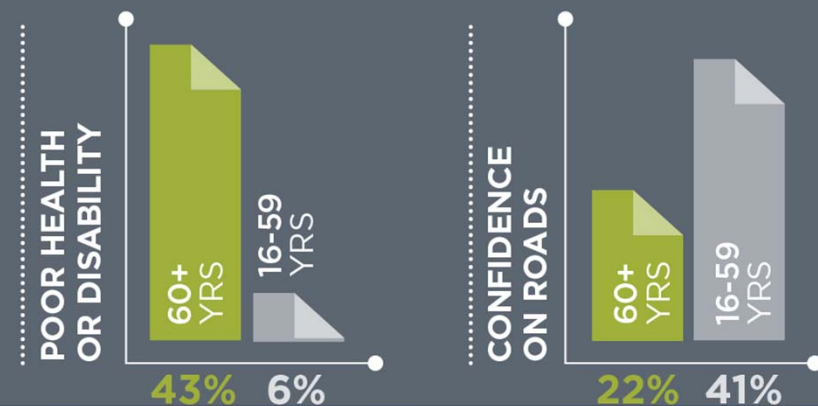
OLDER MEN CYCLE MORE THAN OLDER WOMEN

Older men are **twice as likely** to cycle as older women, raising concerns over equity.



LACK OF CONFIDENCE TO CYCLE ON ROADS

Nearly half of older people feel it is physically difficult for them to cycle and only **one in five** are confident cycling on roads.



BUT THERE IS POTENTIAL FOR MANY MORE OLDER PEOPLE TO CYCLE

60-69
YRS



27% of 60-69 year olds own a bicycle but only 1 in 9 regularly use their bike

CYCLE
PATHS



42% would cycle (more) if more dedicated cycle paths

E-BIKES

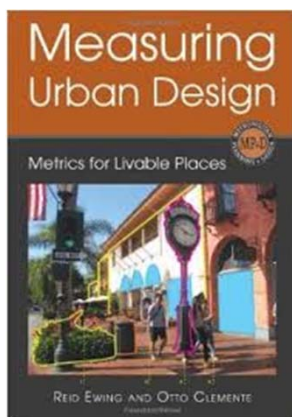


e-bikes support older people's cycling. In the Netherlands one third of all distance cycled is by e-bike!



Developing Urban Design understanding

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Cycle BOOM responding to call by Ann Forsyth and Kevin Krizek:

"...to take the experience of cycling seriously in urban design. This involves moving beyond a concern with safe and convenient facilities and complete networks to a more substantial interest in the experience of the environment from a cyclist's point of view."

Ann Forsyth & Kevin Krizek (2011) Urban Design: Is there a Distinctive View from the Bicycle?, *Journal of Urban Design*, 16:4, 531-549, DOI: 10.1080/13574809.2011.586239

Urban Design Audit

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Comparing 'traditional' urban design approaches (to walking) with 'forgotten middle' perspectives (on cycling)

4 locations in Reading



Urban design quality assessment



Community engagement

3 Focus groups | Q-Methodology



Analysis and design guidance

Identifying the attributes, features and principles that influence or contribute to quality urban environments for cyclists

A reimagining and rearticulating of urban design principles from a cyclists perspective

Urban Design Qualities



Imageability	Coherence	<i>Variance with cycling 'lense':</i>
Enclosure	Human scale	
Transparency	Complexity	<i>Same principles?</i>
Legibility	Tidiness	<i>Priorities?</i>
Comfort		






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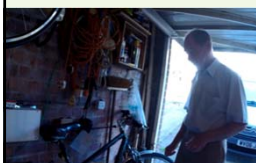
Life history interview: Objectives

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Through individual life histories of cycling reveal

- Whole-life view on engagement with cycling
 - Behaviour change and continuity in relation to life events and transitions and evolving social and physical settings
 - Practice of contemporary cycling
- Experience and narratives of cycling and ageing
 - How cycling is affected by later adulthood transitions?
 - e.g. changing work patterns, family structure, roles, health
 - Adaptive, restorative and diminishing changes
 - Outlook for future cycling



Life History Interviews: Emerging themes

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- Heterogeneity in past cycling trajectories:
 - continued | expanded | diminished | rediscovered | discontinued | new | stopped | absent
- Heterogeneity in future cycling trajectories:
 - continue | increase | decrease | uncertain | start | behind me
- Later life:
 - transitions: retirement | residential moves | family roles | body | motivation
- Cycling niches:
 - enduring: knowledge | skills
 - adapting: bike | kit | timing | skills | company | routes
 - explorative: geography | mentors



Naturalistic ride : background

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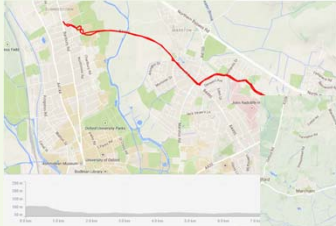
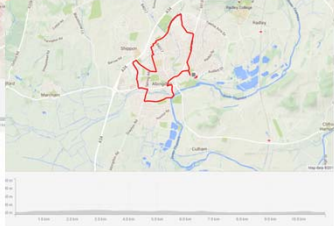
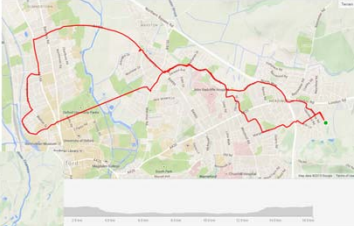


- 'New mobilities paradigm' exploring mobile bodies in mobile contexts
- Approaches that diverge from traditional methods – research 'on the move'. (Sheller and Urry, 2006)
- Mobility not just movement between point A and B (Cresswell, 2006)
- Interest in affect, place, meaning, culture and representation

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Naturalistic ride: Routes

Participant chooses route: familiar journey, similar timing, everyday experience

Sheryl: Shopping

James: Exercise

Cecil: Social visit

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Experiences



Multi-sensory – sound |
surfaces | surroundings

Pleasure | anxiety |
accomplishment

Connection – place | people
| environment

Exploration

Monotony

Naturalistic rides – emerging themes



Challenges

Traffic – type | proximity

Storage and access

Infrastructure - design,
maintenance, use

Topography

Social / technical support



Adaptations

cycles

routes

timing

manoeuvres

social

Resilience | resignation | reduction



(E)cycling - eight week trial: background

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Objective: to test the impact of (re)discovering cycling on physical activity, mental health and wellbeing in older adults.

“work on well-being and mobility should consider both the objective and the subjective and the hedonic and eudaimonic dimensions of well-being, and should pay detailed attention to the multiple ways in which well-being and its linkages to mobility are context-dependent and shaped by the particularities of time and place” (Nordbakke & Schwanen 2014)

(E)cycling - eight week trial

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Life History Interview Cycling
assessment
Pre-tests
Diary
GPS/Odometer verification
Post-tests
Focus group
Follow-up (?)

Initial test results

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- Both groups of participants - **enjoyed** the trial, feel physically fitter and better more generally
- **Improvement** on accuracy in the cognitive tests measuring executive function
 - **92%** E-bike; **72%** Pedal
- Reaction times reduced for most (responding quicker)
 - 67% E-bike; 57% Pedal
 - When reaction times increased, higher accuracy
- Practice effects? Very little change (positive or negative) in control group

E-bike opportunities

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"same amount of exercise but more pleasure because going further than my usual boundaries"

Mobility practices

- Geographies – rediscovered | extended | deepened
- Additional journeys | replacing car
- Learning effect > novelty (Fyrhi & Fearnley 2015)

"Instead of 'closing down' at our ages we're thinking of exciting and challenging things to do"

Health and wellbeing

- Greater (cycling) confidence
- Spatial awareness and control
- Social contact
- Engagement with the unknown: 'mobility of the self' (Schwanen & Ziegler 2011)

E-bike challenges

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"how is that going to help?... I imagined a little scooter that you switch on and it goes"

E-bikes: image/nature | weight | cost | security | stranding | technical support

"Oxford is a dangerous city to cycle round"

Unsupportive environments: roads | traffic | cycle tracks



European case study visits

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- 2 x 3 day study visits to **Munich** in Germany and **Seville** in Spain, May and June 2014 to explore good practice in inclusive cycling
- Interviews with key stakeholders, cycle tours/visits (e.g. testing infrastructure), filming and audio recording
- Decision to focus on 'atypical' cycling cities and also to invite a northern/southern European comparison



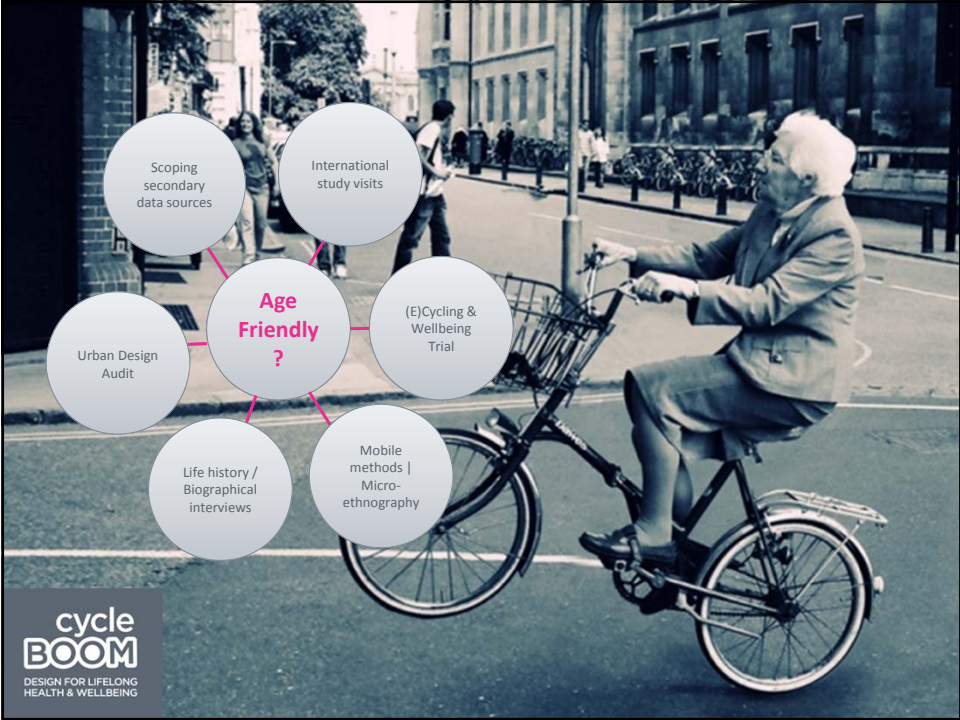
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European case study visits - findings

- Comprehensive cycling network
- Infrastructure and space reallocation to cycling and walking
- Creative communication and marketing
- Engage local stakeholders and ensure wide participation
- Cycle training to build capacity and diversity



www.cycleboom.org/outputs/videos/



Age Friendly ?

- Scoping secondary data sources
- International study visits
- (E)cycling & Wellbeing Trial
- Mobile methods | Micro-ethnography
- Life history / Biographical interviews
- Urban Design Audit

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Age friendly communities?

Current resilience
enduring | adapting

Opportunities
engagement | exploration | exercise

Constraints
body | gender | geography



<https://departmentfortransport.wordpress.com/tag/altered-images/>

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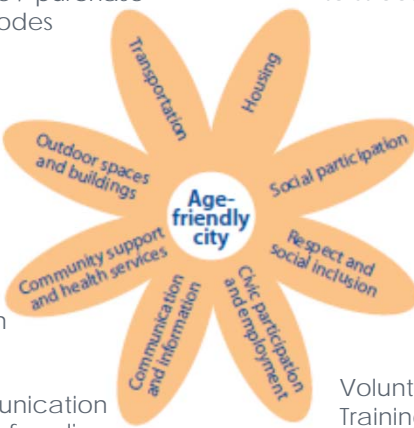
Age friendly cycling communities?

(E)-cycling as a viable transport option
Community / hire / purchase
Integration of modes

Infrastructure and space reallocation
Comprehensive network: social / direct / enjoyable

Advice on benefits
Cycling on prescription

Creative communication and marketing of cycling



Cycle storage and access to street / network

Social cycling and access
Integration

Knowledge of older peoples' cycling needs:
Government>shop

Volunteering / buddies
Training

WHO 2007 Global age-friendly cities: a guide

References

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