

Institution: Oxford Brookes University		
Unit of Assessment: 13, Architecture, Built Environment and Planning		
Title of case study: Co-Creating Age Friendly Cities for Cycling		
Period when the underpinning research was undertaken: October 2013 to present		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Tim Jones	Reader in Urban Mobility	[text removed for publication]
Ben Spencer	Research Fellow in Built Environment and Healthy Aging	
Period when the claimed impact occurred: October 2013 to present/ongoing		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact <p>Cycling is known to benefit the health and wellbeing of older people, but it needs better infrastructure. Research can improve understanding of how to make improvements.</p> <p>Urban mobility research at the School of the Built Environment, Oxford Brookes University, has contributed significantly to understanding how active travel such as walking and cycling can be supported and promoted. This is an important factor in achieving a low-carbon economy and improving the health and wellbeing of an ageing population.</p> <p>The Royal Town Planning Institute (RTPI) award-winning study that underpins this case study has shaped both industry and municipal authority approaches to marketing cycling. It has also influenced the development of accessibility guidance for different types of cycling. Finally, it has prompted a range of organisations to advocate support for e-biking, and key political actors to call for government investment in cycling infrastructure.</p>		
2. Underpinning research <p>People generally agree that cycling should be promoted as a healthy and sustainable form of low-carbon transport. However, cycling for everyday transport has declined over the last 50 years across the UK. The 'cycle BOOM' research project, winner of RTPI's 2017 award for research excellence (Reference 1 and Source 1), investigated how the design of the built environment and technology affects cycling habits in an ageing population, and the potential impact on older people's wellbeing.</p> <p>The investigation considered the built environment and technological systems at different scales:</p> <ul style="list-style-type: none"> • micro-level – e.g. (electric) bicycles, equipment and cycle paths • meso-level – e.g. housing, street design/layout and cycle routes • macro-level – e.g. land use patterns and information/service provision. <p>The investigation considered for the first time the influence of early life experience on shaping later life outcomes. It also looked at the wider social/cultural, organisational, environmental, economic and technological changes over time that could influence cycling habits. An innovative mixed-method approach was used involving over 240 participants, from across four UK cities, in in-depth biographical interviews, ethnography (mobile interviews) and a quasi-experimental cycling and wellbeing trial.</p> <p>The study ran from October 2013 to September 2016, led by Oxford Brookes University and involved Cardiff University, University of Reading and University of the West of England (Bristol),</p>		

and was funded by RCUK's Lifelong Health and Wellbeing cross-council programme (EPSRC Grant Reference: EP/K037242/1).

The research showed that older people who currently cycle, or who try cycling, recognise the positive benefits to their health and wellbeing. However, they find infrastructure in the UK generally unhelpful. The study reinforced the need for policymakers and cycle manufacturers to consider the different capabilities of users to encourage cycling among an increasingly older population. The study highlighted the desire for dedicated (separated) cycle lanes along major roads, lower speed limit zones, and support for the uptake of electric bikes (References 1 and 2).

The cycling and wellbeing trial component of the study then showed the positive impact of cycling (particularly electric cycling), on cognitive function and mental health (Reference 3). It also showed how electric bikes can facilitate 'micro-adventures' in the outdoor environment and promote wellbeing (References 4 and 5). Findings were used to make the case that interventions targeted at promoting older cycling support healthy ageing. They also support younger cycling, and help address the pressing issue of low fitness levels and increasing childhood obesity (Reference 6).

The evidence from the study was developed into a series of clear and accessible recommendations using the World Health Organization Age-friendly Cities framework. These advised different stakeholders how social organisation, design of the built environment and technological adaptation could support people cycling in older age, and promote physical health and wellbeing. This advice was made available on the project website (www.cycleboom.org) in the form of a summary report (Reference 1) and video vignettes of participants, as well as three specific briefing notes:

- for planners, engineers and designers
- for people involved in public health promotion
- for the cycle industry.

3. References to the research

1. **Jones, T.** Chatterjee, K. Spinney, J. Street, E. Van Reekum, C. **Spencer, B.** Jones, H. Leyland, L.A. Mann, C. Williams, S. & Beale, N. (2016). *cycle BOOM. Design for Lifelong Health and Wellbeing. Summary of Key Findings and Recommendations*. Oxford Brookes University, UK. Available [here](#)
2. **Jones, T.** Chatterjee, K. **Spencer, B.** & Jones, H. (2017). Cycling Beyond Your Sixties: The Role of Cycling in Later Life and How it Can Be Supported and Promoted. In, Musselwhite, C. (Ed.) *Transport, Travel and Later Life (Transport and Sustainability, Volume 10)*, 139-160. Bingley, UK: Emerald Group Publishing Ltd. ISBN: 9781787146242
3. Leyland, L.A. **Spencer, B.** Beale, N. **Jones, T.** van Reekum, C.M. (2019). The effect of cycling on cognitive function and well-being in older adults. *PLoS ONE* 14(2): e0211779. 10.1371/journal.pone.0211779
4. **Spencer, B. Jones, T.** Leyland, L.A. van Reekum, C.M. & Beale, N. (2019). Instead of "closing down" at our ages . . . we're thinking of exciting and challenging things to do: older people's microadventures outdoors on (e-)bikes. *Journal of Adventure Education and Outdoor Learning* 19(2), 124-139. DOI: 10.1080/14729679.2018.1558080
5. **Jones, T.** Harms, L. & Heinen, E. (2016). Motives, perceptions and experiences of electric bicycle owners and implications for health, wellbeing and mobility. *Journal of Transport Geography*, 53, 41-49. DOI: 10.1016/j.jtrangeo.2016.04.006 (One of JTRG's most downloaded articles, last checked, 7th January 2021)
6. **Jones, T. Spencer, B.** (2020). City Cycling Spaces for Welcoming and Engaging All Ages. In, Kaplan, M. Thang, L.L. Sánchez, M. and Hoffman, J. (Eds) *Intergenerational Contact Zones: Place-based Strategies for Promoting Social Inclusion and Belonging*, 1st Edition. Routledge. ISBN: 9780367189307

4. Details of the impact

The impact of the study since 2013 has several aspects:

- influence on professional bodies
- influence on industry
- influence on practitioners and policymakers at local and national levels in understanding how to promote and develop age-friendly environments and services for older cycle users.

The study has successfully communicated findings to a diverse range of stakeholders, including professional and community organisations and key actors in the political sphere. The following gives more detail about specific impacts.

Recognition of research excellence

The research won the coveted RTPI Award for Academic Excellence 2017. The RTPI's Head of Research said the cycle BOOM study was '*... highly relevant to planning with an interesting mixed-methods approach. The research team's work provides valuable insights into street design and support for older people to help more of them stay active for longer*' (Source 1). Dr Tim Jones of Oxford Brookes University has since been appointed Expert Adviser on guidelines for promoting walking and cycling for the National Institute for Health and Care Excellence (NICE) and Adviser to Oxfordshire County Council's Local Transport and Connectivity Plan Steering Group.

Helping to shape industrial strategy

Exchanging knowledge involved working closely with Raleigh UK Ltd, one of the world's oldest and best-known cycle brands. The team presented findings to staff at the head office in Nottingham in September 2016. Raleigh's Head of Marketing stated: '*The study enabled Raleigh to understand that consumers did not necessarily understand how e-bikes operate or the health and wellbeing benefits of riding one. This resulted in us embarking on a partnership with the Caravan and Motorhome Club, tailoring an e-bike advertising campaign to its million-plus active leisure users. Regular market research has now become part of our product development and go to market process.*' (Source 2)

Informing planning policy and guidance, and behavioural change strategy

The research team took part in the first London Electric Bike Summit at City Hall (31 January 2017), organised by Transport for London (TfL). They also helped develop the biggest e-bike promotional activity by a municipal authority seen nationally. The Project Manager for Surface Strategy and Planning at TfL stated that the findings '*have already been helpful in making the case for e-bikes to our decision makers*', and that cycle BOOM participant videos '*is an idea we'll explore ourselves as having "public" e-bike champions/role models*'. TfL subsequently produced a website focusing on e-biking, with accompanying videos emulating cycle BOOM video vignettes to promote the benefits of e-biking in the capital. (Source 3)

The London Plan is a spatial development strategy that sets out an economic, environmental, transport and social framework for the development of London. cycle BOOM research fed directly into Supplementary Planning Guidance (SPG) for the London Plan, highlighting measures that developers and boroughs should adopt to ensure inclusive cycling. The then Principal Access Officer at the Greater London Authority said: '*When developing the content I became aware of the need to address cycling within the guidance. The Mayor's Vision for Cycling did not address this, nor did the existing TfL guidance ... Using this [cycle BOOM] evidence I was able to develop my thinking on the promotion of inclusive cycling infrastructure within the SPG.*' (Source 4)

In July 2020, the UK Government published Gear Change, an ambitious new programme to increase cycling and walking. Jones and Spencer were invited by the UK Department for Transport (DfT) to present findings of the cycle BOOM study to support work on delivery of the programmes in Gear Change. The Deputy Director for Local Transport stated, '*Your research is*

highly relevant to our work to develop the programmes. In particular, your findings and recommendations support the thrust of policy and will help us to design individual programmes. The findings that the use of e-cycles by older people can have a marked impact on mental health and wellbeing is very helpful in linking cycling policy to health outcomes and supports and refines the case for investment in encouraging older people to cycle.' Discussions are continuing on how cycle BOOM findings can support the work of the DfT. (Source 5)

Educating the public and future generations about the benefits of (e-)cycling

The study received widespread publicity following an article in The Conversation (Source 6) on how cycling outdoors can support mental health (Reference 3). This included broadcast media on the BBC South Today news. The Coordinator of the Youth Travel Ambassador Programme, London Transport Museum (LTM) informed the team that LTM had adopted its biographical approach to understanding mobility for its educational programmes with schools, stating that it *'really inspired young people and is a fantastic way to identify specific barriers for each individual. We are going to use the exercise going forward ...'* (Source 7)

Advising and supporting community initiatives

cycle BOOM helped charities Broken Spoke Bike Co-op and Wheels for All conceive and deliver a 'Pedalling On' programme of six social rides for people aged 55 and over from August to October 2017. Six e-bikes used in the cycle BOOM study were donated to the project. A core group of volunteers ran Pedalling On, and one trained to become an accredited ride leader. Wheels for All has since administered an e-bike loan scheme to Oxfordshire councillors. The Leader of Oxfordshire County Council, who took part in the programme, said: *'I think there is a great future potential for e-bikes because it's giving that extra ability ... it's stretching that distance. I think there's a big opportunity here for e-bikes to get that modal shift.'* (Source 8)

Influencing advocacy groups and political actors

Through advocacy work, cycle BOOM has helped national cycling organisation Cycling UK understand how older people's cycling can be supported and strengthened. The findings helped the organisation develop a briefing on health and cycling. They were also used to encourage decision-makers to facilitate cycling among the older population, and to promote e-bikes, partly in response to a call for evidence on the future of mobility by the UK Department for Transport. (Source 9) The Shadow Chancellor, Anneliese Dodds MP, took part in the 'Like Riding a Bike' conference at Oxford Brookes University on 7 September 2019. She has used cycle BOOM recommendations to argue for more investment in separated cycle lanes to improve cycle safety. She said: *'I've frequently drawn decision-makers' attention to the cycle BOOM project, which provided a comprehensive evidence base for understanding how we can encourage a greater range of people to get on their bikes. The research underlined the importance of segregated cycle lanes for many elderly and disabled people to feel confident on the road – so has helped me argue for additional investment in cycling. I am really proud of the fact that Oxford Brookes led this important project.'* (Source 10)

5. Sources to corroborate the impact

Source 1 | Royal Town Planning Institute (RTPI) Academic Award for Research Excellence 2017. Certificate, 12.09.17 (available upon request). Announced on 12 September during 2017 UK-Ireland Planning Research Conference at Queen's University Belfast. <https://www.brookes.ac.uk/about-brookes/news/updated-13-sept--cycle-boom-researchers-win-top-national-research-award/>
[Last accessed 15.01.21].

Source 2 | Raleigh UK Ltd. Commercial Partnership Manager and Head of Marketing. Testimonial 21.12.20. Marketing examples: <https://www.raleigh.co.uk/gb/en/electric-bike-knowledge/> and <https://www.raleigh.co.uk/gb/en/cycling-advice/cycling-for-mental-health/>
[Last accessed 15.01.21].

Source 3 | Surface Strategy & Planning, Transport for London (TfL). E-mail correspondence, 20.9.17. TfL launches e-bike strategy – ‘TfL joins forces with the cycling industry to get more Londoners on e-bikes’ 16.03.18 <https://tfl.gov.uk/info-for/media/press-releases/2018/march/tfl-joins-forces-with-the-cycling-industry-to-get-more-londoners-on-e-bikes>. [Last accessed 15.1.21]. TfL launches a series of video vignettes to promote e-biking <https://ebikes.london/rider-stories/> [Last accessed 15.01.21].

Source 4 | Principal Access Officer at the Greater London Authority Accessible London. E-mail correspondence, 11.04.17.

Source 5 | Deputy Director, Local Transport, UK Department for Transport. Testimonial letter, 26.01.21. DfT, ‘Gear Change: a bold vision for cycling and walking’ 27.07.20 <https://www.gov.uk/government/publications/cycling-and-walking-plan-for-england>

Source 6 | Leyland, L., Spencer, B., Van Reekum, C., Jones, T. (2019) ‘Electric bikes can boost older people’s mental performance and their well-being’. *The Conversation* 09.04.19 <https://theconversation.com/electric-bikes-can-boost-older-peoples-mental-performance-and-their-well-being-112264> [Last accessed 15.01.21].

Source 7 | Youth Travel Ambassador Programme Co-ordinator, London Transport Museum. E-mail correspondence, 12.05.16.

Source 8 | Director of Wheels for All. Testimonial Letter, 01.04.20. ‘Pedalling On’ programme, developed in association with Wheels for All and Broken Spoke Bike Co-op <http://bsbcoop.org/pedalling-on/>. Director of Wheels for All, discusses impact of project in cycle BOOM video <https://vimeo.com/249020177> (at 1min 30sec). Leader of Oxfordshire County Council reflects on participation in the study <https://vimeo.com/249020177> (at 2mins). [All last accessed 15.01.21].

Source 9 | Cycling UK. Testimonial letter, 28.01.20. Briefing on health and cycling (August 2017, see page 14 in particular), available [here](#). Consultation responses on DfT call for evidence on the future of mobility, Question 6 in particular (September 2018), available [here](#). [Last accessed 15.01.21].

Source 10 | UK Shadow Chancellor and MP for Oxford East. E-mail testimonial.13.09.19. Example of Dodds making case for cycling investment at debate on Active Travel at Westminster Hall, Chaired by Mr Adrian Bailey on 9 July 2019. Hansard, Active Travel, Volume 663: available [here](#). Like Riding a Bike | Final Conference Report and Actions (January 2020) Available at: <https://www.cyclox.org/index.php/2020/02/06/like-riding-a-bike-2/> [All last accessed 15.01.21].