Velo-mobility and an ageing society: the UK cycle BOOM study
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Design for Wellbeing: Ageing & Mobility in the Built Environment

“Approaches should consider use of novel methodologies for robust evidence generation that inform the design process and create decision tools for policy makers and industry.”

Ageing population | Healthy Ageing

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For too long the focus has been on advising individuals to take an active approach to life. There has been far too little consideration of the social and physical environments that enable such activity to be taken.”

The ‘Velomobile Elite’

Cyclists’ identities and practices have been shaped by acclimatizing to current hostile cycling conditions to the extent that they sometimes struggle to understand why more people don’t cycle. In so doing, they inadvertently perpetuate their identity as part of a ‘velomobile elite’.

Invisibility of older cycling

ABSENCE OF OLDER PEOPLE CYCLING IS GETTING NOTICED

Public figures are starting to draw attention to the unusual distribution of cycling amongst the population.

“The current cycling is disproportionately among and near the younger end of the spectrum. It appears there are the people who are used to cycle. What hasn’t been seen from these figures is that it’s the middle-aged people who are not cycling. Therefore doing so, is for older people doing so,”

(Commenting on figures that have been released in recent years discussing the nature of London’s plans for cycling in the capital)

Mixed Methods

“The complexity of our research problems calls for answers beyond simple numbers in a quantitative sense or words in a qualitative sense. A combination of both forms of data provides the most complete analysis of problems. Researchers situate numbers in the contexts and words of participants, and they frame the words of participants with numbers, trends, and statistical results. Both forms of data are necessary today.”

Creswell & Plano Clark, 2011, Designing and Conducting Mixed Methods Research

Testing novel research methods
Representing affect | developing a UD vocabulary

...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.


Focus

Methods and Preliminary Results

Integrating methods

Integrated methods

Life history interview

Naturalistic ride and video elicitation interview

How has their cycling status arisen over their life course

Practices and experiences of later life cycling

Life history interview: Objectives

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

Wave One: Participants

Range of experienced cyclists: age, sex, location

Bristol 12

Oxford 10
Methods

- Life grid
- Time Line
- Life history interview
- Naturalistic ride
- Post ride interview

Cycling Life History: Grid

Cycling Life History: Timeline

Methods

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- Time Line
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Life History Interviews: Emerging themes

- Heterogeneity in past cycling trajectories:
  - Continued | Expanded | Diminished | Rediscovered | Discontinued | New | Stopped | Absent
- Heterogeneity in future cycling trajectories:
  - Continue | increase | decrease | uncertain | start |
- Influences on pathway:
  - Body | gender | environment | social | culture
- Cycling niche:
  - Enduring knowledge | skills
  - Adapting: bike | kit | timing | skills | company |
- Explorative: mentors
- Later life:
  - Transitions: retirement | residential moves | family roles | motivation
  - Niches established and evolved
Methods

Life grid  Time line  Life history  Interview  Naturalistic ride  Post ride interview

Naturalistic ride: background

• ‘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

Naturalistic ride: Routes

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

Sheryl: Shopping  Cecil: Social visit  James: Exercise

Naturalistic ride: Equipment

Participant:
- Binaural microphones inside windjammers
- Mindwave EEG
- Mobile phone to record EEG
- Forward facing GoPro video camera
- Garmin GPS
- Edulab proximity sonar measure / log

Researcher:
- Lapel microphone for autoethnography
- Forward-facing GoPro video camera

Abraham, Oxford

Naturalistic ride: Ride Video

Methods

Life grid  Time line  Life history  Interview  Naturalistic ride  Post ride interview
Naturalistic ride: Post-ride interview

Strategies and tactics:
- route choice, road position, manoeuvres, transgressions, infrastructure, wider environment

Experiences of cycling: sensory, affective, social

Naturalistic ride: Revised approach

- More less-experienced cyclists
- Better socio-economic and BME representation
- Researcher / participant equipment burden reduced for naturalistic - waymarked enhanced
- Rear facing participant camera (Laurier 2014)
- Eliciting affect: priming, reviewing, delving

Wellbeing | Executive Function

Wellbeing - multifaceted concept that encompasses a sense of mental and physical health, (social) engagement, satisfaction and fulfilment in life.

When we age, we experience a decline in our mental and physical functioning, which can affect our sense of wellbeing.

Low cognitive function is associated with low psychological wellbeing in middle/older aged adults (Llewellyn, 2008).

Exercise particularly impacts “executive function” — inhibition of irrelevant information, enhancement of goal-relevant information, (motor) planning, and cognitive flexibility (Hillman et al., 2008)

Cycling and Wellbeing Trial

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

Measures:
1. Cognitive function (Executive function tasks)
2. Eudaimonic wellbeing (actualizing inherent potentials)
3. Hedonic wellbeing (maximizing pleasure moments)
4. Physical health (self-reported)

Tools – Psychological wellbeing (PWB) questionnaire (Ryff, 1989); Health Survey SF36v2. Exec function tasks: MMSE; CERAD I & II; Verbal fluency; Plus minus; RVP; Stroop; Letter Memory; Dot probe; Go-No-Go...

Sample of E-bike (n=40); pedal cycle (n=40); control group (n=20) matched on age, sex, SES, educational from Oxford and Reading areas.

Exposure - (Re)Engaging with cycling at least 3 times per week for at least 30 minutes during the 8-week period.

Pre-test and then re-test after 8-week period | Diary record | Focus Groups | GPS validation/Odometer.

Wellbeing trials: Focus Groups

Positive experience of E-bikes:
- Mobility
  - Geographies – rediscovered | extended | deepened
  - Additional journeys and replacing car
  - “same amount of exercise but more pleasure because going further than my usual boundaries”
- Health and wellbeing
  - Greater confidence
  - Spatial awareness and control
  - Social
- Motivation | engagement

Negative experience of E-bikes:
- E-bike weight | cost | security | stranding
- Unsupportive infrastructure “Oxford is a dangerous city to cycle round”
Summary

Heterogeneity
- discovered | rediscovered | (dis)continued

Constraints
- body | gender | geography

Resilience
- enduring | adapting | imparting

Impact

Developing more inclusive neighbourhoods, towns and cities

Designing products suited to the growing market of older people

References


