The PASTA project
Bike it. Walk it. Live it.

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Centre for Environmental Policy – Imperial College London

Transport and Health group seminars
London School of Hygiene and Tropical Medicine
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• The PASTA project (Audrey)
• Behaviour change towards AM (Esther)
• Health and tracking add-ons (Juan Pablo)
• Where we are now (All)
The urban challenge – connecting transport and health

The quality of our health and how we get about are closely linked. Cycling and walking and public transport use promote health in four ways. They provide exercise, reduce fatal accidents, increase social contact and reduce air pollution.

At present:
• Physical inactivity is the fourth leading risk factor for death worldwide.
• Only 1/3 of the European population is estimated to meet the minimum recommended levels of physical activity.
• Uptake of active mobility could readily substitute a large share of trips which cover less than 5km.

The policy challenge: how can we effectively increase the amount of physical activity of citizens in the urban environment?
This is where PASTA comes in: the EU funded PASTA project aims to show how promoting active mobility (i.e. walking and cycling) can lead to a healthier, more physically active population - saving money and more importantly improving our lives.

Our overall objectives are:

- To promote and assess active mobility;
- To reduce sedentary behaviour;
- To integrate physical activity as part of our daily routine.
Our approach: building a more complete picture through trans-disciplinary research, PASTA will do the following:

**Workshops & Interviews**
Key stakeholders from city dev. – transport & health assess a range of related approaches and policy options.

**Longitudinal survey**
General public (2,000 each city) physical activity, travel, road traffic collisions and air pollution.

**Good practice examples**
Open to all cities Top ten interventions will be selected and presented in a compendium.
The seven case-study cities

1. Vienna
2. Zurich
3. Antwerp
4. Barcelona
5. Örebro
6. Rome
7. London Borough of Newham
Project benefits & outputs for towns and cities

• Importance of the city at EU level
• Encouraging cooperation in the city
• Investigation of the effects of active mobility on health
• Revealing positive health effects of measures
• Promotion of active mobility

• **HEAT tool** – to calculate health and economic impacts of initiatives promoting active mobility.
• **Compendium of good practice recommendations** – selection of good practices related to promoting active mobility.

Both will be made available online to download for free.
The project partners:
made up of an interdisciplinary group of researchers specialising in transport and health, health organisation and city networks.
More info:

Website: www.pastaproject.eu

Twitter: @EUPASTA

Newsletter: sign up by visiting our website
What is the PASTA London team doing research on?

Esther Anaya
Influence of policy interventions in behaviour change towards Active Mobility.

Juan Pablo Orjuela
Improving air quality modelling tools to estimate Black Carbon inhaled doses
Esther Anaya
Influence of policy interventions for behaviour change towards Active Mobility.

Before and After the Leaway complete construction

Source: Borough of Newham Archives
Photomontage by 5th Studio
What is needed to make people cycle (more)?

- Perception as or more important than built environment.
- What interventions/policies are more effective?
- Same for everybody? Otherwise, w groups are influenced by w policies?
- Policy packages (>1) more effective.

By Roxanna Vizcarra

by Robbie Gillett (CTC)
Cycling is beneficial

But, what influence people to cycle?

Then, how to promote it?

Behaviour change towards cycling

Policy – interventions for the promotion of cycling

by Roxanna Vizcarra

by Robbie Gillett (CTC)
Research gaps:

- Longitudinal analysis before and after interventions
- Assessment of multiple, complex interventions
- Adding the context
  - Social context: equity
  - Physical context – quality and quantity of interventions
- Integrating different conceptual frameworks (behavioural theories of Planned Behaviour, Trans-Theoretical Model; ecological and geographical approaches…)
Methods: introduction

**Aims**

- **Policy – interventions for the promotion of cycling**

**Methods**

**Quantitative:**

- Cross-sectional statistical analysis of the survey
- Longitudinal analysis. Controlled Before – After study
  - Observation of the interventions
  - Differentiation of control group: GIS buffer to establish exposed/non exposed
- Dose - response: definition of levels of exposure

**Qualitative:**

- Small sample of in-depth interviews

- Translational research (bridge science-policy)
Conceptual framework for behavioural change

Analysis of the survey: attitudinal (mindset) and behavioural (expression) profiles (cross-sectional) and changes (longitudinal).

Do not cycle
Do not intend to
Have no access
Contemplation

Do not cycle
Intend to
Have access
Preparation

Cycle +1 time/week
Increased last year
Have access
Action

Cycle +1 time/week
Not increased last year
Do it automatically
Maintenance

Do not cycle
Intend to
Have access
Precontemplation

Static vision
(Cross-sectional)

Dynamic vision
(Longitudinal)

Trans-theoretical Model of the five stages of change. Based on Prochaska and DiClemente (1986)
Study design: case control

Controlled before and after study: Assessment of multiple interventions. Differences between case (exposed to interventions) and control (non-exposed to interventions).

*Survey of interventions in the study area (around Queen Elizabeth Park)*

<table>
<thead>
<tr>
<th>SPECIFIED INTERVENTIONS (so far)</th>
<th>UN-SPECIFIED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle Superhighway 2 Extension</td>
<td>Sustrans</td>
</tr>
<tr>
<td>Quietways</td>
<td></td>
</tr>
<tr>
<td>Leaway</td>
<td></td>
</tr>
<tr>
<td>Smaller interventions</td>
<td></td>
</tr>
</tbody>
</table>
Study design: case control
Study design: Impact of interventions

Before and after: the impact of interventions in the attitudes and behaviour of the population towards cycling.

*Selected interventions in the study area (around Queen Elizabeth Park)*
Study design: Measurement of exposure

Exposure: proximity buffers to Origin and Destination, and to route.

Dose-response: develop an impact assessment framework of policy measures depending on the levels of exposure of the population to these interventions.
Qualitative Methods

In-depth interviews, semi-structured: qualitative assessment of attitudinal and behavioural change. Small sample.

- Could help detect confounders (such as life events)
- Will provide a more complete anthropological and sociological approach.
Translational research: bridging science and policy. Making useful policy recommendations.
Health add-on

• Sample from the PASTA questionnaire

• Three cities: Antwerp, Barcelona and London

• 40 participants in each city

• Monitored for a week in their normal activities (repetition for data in three different seasons)

• Health measurements at the beginning and end of the week (retina pictures, lung capacity and exhaled nitrogen oxide)

• Through the week: BC exposure, geo-position, physical activity levels
The week kick-off
Our devices
Our “mobile lab”

Kick-off
After evaluating your health, you start your week as a mobile lab.

Day 1
Add a heart rate monitor to your mobile lab.

Day 2
Leave the heart rate monitor at home. Take your mobile devices with you. Hit the road.

Day 3
Repeat the measurements of day 2. Nearly halfway. Keep on going.

Day 4
Tonight you measure your heart rate and blood pressure. Don’t forget to travel with your mobile devices.

Day 5
Repeat the measurements of day 2.

Day 6
Time to go out with your heart rate monitor again.

Day 7
Repeat the measurements of day 2.

The finish line
Re-evaluation of your health status.
Our sample

Sex distribution

Male 40%
Female 60%

Physical activity distribution

Active (transport) 25%
Active (transport + leisure) 43%
Active (Leisure) 22%
Inactive 10%

Age distribution

30 - 39 40%
18 - 29 35%
50+ 13%
40 - 49 12%
Tracking add-on

- Sample from the PASTA questionnaire: In London around 80% of the participants said they wanted to be part of further studies

- Using MOVES in people’s smartphones will give additional and valuable information on:
  - Trips
  - Mode use
  - Proxy to physical activity data

- Will be a bigger sample (aiming at 10-20% of the PASTA main sample)

- Better info on participant trips and routes in order to check the answers in the questionnaire
Some issues so far

Recruitment:

- Low response rates for the inclusion criteria questionnaire (50%)
  Included “please scroll down” in the mail and the response rate increased to more than 95%

- Meeting all the inclusion criteria and trying to get a heterogeneous sample
  Relaxed the heterogeneity needs

While measuring:

- Micro-aethalometer filters
- Changing physical activity patterns or failure to measure while active
- Failure to charge or turn on
Largest free living population tracking study

Largest longitudinal survey of this kind

Tracking add-on

Challenges with recruitment
Where we are now

<table>
<thead>
<tr>
<th>PASTA Platform</th>
<th>Researcher</th>
<th>Juan Pablo</th>
<th>English</th>
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<tbody>
<tr>
<td>Antwerpen</td>
<td>Prep: 188</td>
<td>Act: 1454</td>
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<tr>
<td></td>
<td>Reg: 182</td>
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<td>Barcelona</td>
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<td>Reg: 614</td>
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Where we are now
Where we are now

Gender statistics

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<th>Count</th>
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<tr>
<td>Male</td>
<td>272</td>
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<tr>
<td>Female</td>
<td>380</td>
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Age distribution

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Count</th>
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<td>0-9</td>
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<tr>
<td>10-20</td>
<td>167</td>
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<tr>
<td>21-30</td>
<td>202</td>
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<tr>
<td>31-40</td>
<td>124</td>
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<tr>
<td>41-50</td>
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<td>61-70</td>
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<td>71-80</td>
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SES - education level

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Count</th>
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<tbody>
<tr>
<td>No degree</td>
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<tr>
<td>Primary education</td>
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<tr>
<td>Secondary education</td>
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<tr>
<td>Highest education</td>
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SES - household income

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<th>Income Range</th>
<th>Count</th>
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<tbody>
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<td>£0 - £7999</td>
<td>22</td>
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<tr>
<td>£8000 - £11999</td>
<td>51</td>
</tr>
<tr>
<td>£12000 - £14999</td>
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<tr>
<td>£15000 - £19999</td>
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<tr>
<td>£20000 - £24999</td>
<td>34</td>
</tr>
<tr>
<td>£25000 or more</td>
<td>13</td>
</tr>
<tr>
<td>Don't know / Prefer not to say</td>
<td>78</td>
</tr>
</tbody>
</table>
Largest free living population tracking study

Largest longitudinal survey of this kind

Tracking add-on

Data processing and analysis

Peer review publications

Challenges with recruitment

Policy recommendations
Join PASTA today!

https://survey.pastaproject.eu
Thank you!

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