CIPTEC

COLLECTIVE INNOVATION FOR PUBLIC TRANSPORT

Nudging people towards public transport

an experimentally tested intervention to increase public transport use

Samuel Franssens (KU Leuven)
Willie De Swart (RET)
Prof. Siegfried Dewitte (KU Leuven)
Efhtymios Altsitsiadis (KU Leuven)

Overview

- ✓ Problem
- ✓ Solution: nudging
- ✓ Examples of nudging in public transport
- ✓ Field experiment in Rotterdam
  - Design
  - Results
  - Practical side
- ✓ Discussion

Problem

- ✓ How to encourage bus users in Rotterdam to take the bus more often?
- ✓ Without changing prices

Photo: Rick Keus

Solution

- ✓ Nudge:
  - "[an intervention] that alters people's behavior in a predictable way
  - without forbidding any options or significantly changing their economic incentives.
  - The intervention must be easy and cheap to avoid [for consumers].
  - Nudges are not mandates.
    - Putting fruit at eye level = nudge.
    - Banning junk food ≠ nudge"

(Richard Thaler, 2017 Nobel Prize winner & Cass Sunstein)

Examples: parking spots

- ✓ “Sfpark”
  - Problem: almost 1/3rd of car traffic in San Francisco = drivers circling while looking for space

Examples: parking spots

- ✓ “Sfpark”

Examples: parking spots

- ✓ "Sfpark"
  - Problem: almost 1/3rd of car traffic in San Francisco = drivers circling while looking for space
  - Intervention: online info on availability & rates
  - Intervention: variable rates -> each block, one space
- ✓ Results: average parking rates lower, availability improved, more PT use, less traffic, less CO2
- ✓ Cf.: displaying walk time to nearest PT station at heavy foot traffic places => people will consider taking PT before deciding to take car / taxi

Examples: PT maps

- ✓ PT maps may differ from reality in terms of route length & directness
- ✓ Washington D.C.
  - Problem: shift demand from blue to yellow line for SW -> East travelling
    - Intervention: redesign map? (online experiment)

Examples: PT maps

- How would you go from SW -> East?
  - Actual: 72.1% vs. least distorted: 74.7% take yellow line.

Examples: PT maps

- How would you go from SW -> East?
  - Actual: 72.1% vs. optimal: 81.6% take yellow line

Nudging

- ✓ Advantage:
  - Can have large effects on behavior…
  - with a relatively cheap intervention (altering an existing and often arbitrary choice architecture) …
  - that doesn't require significantly changing economic incentives

- ✓ Disadvantage:
  - Most often: small interventions -> small effects (but still high ROI)
  - Does not significantly change economic incentives
  - Justified or not, some people will identify nudge as manipulation / coercion

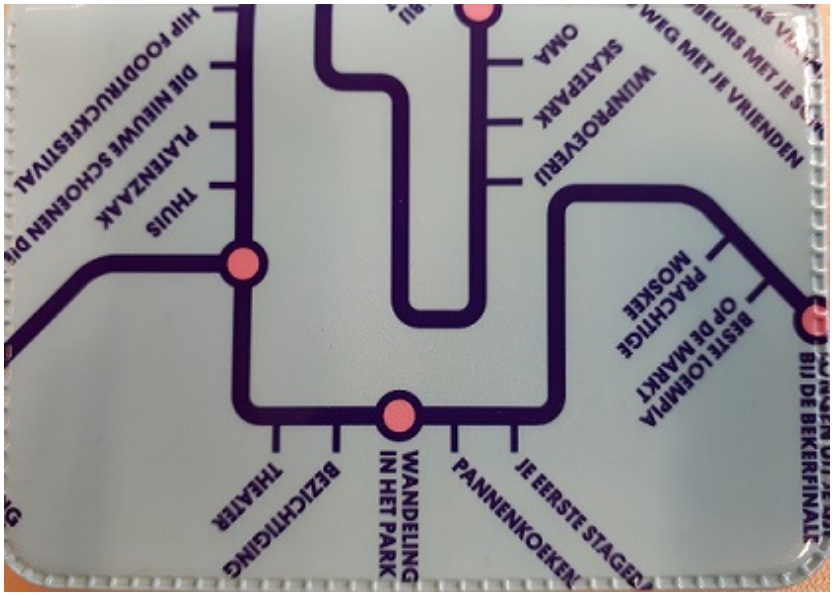
Field experiment in Rotterdam

- ✓ Problem: How to encourage bus users to take the bus more often?

- ✓ Nudge = ‘social labelling’
  - making a statement about an individual's identity, with the aim of eliciting from the individual, behavior that is congruent with that identity
  - E.g., “taking the bus shows that you are an environmentally conscious citizen”

Field experiment in Rotterdam

- ✓ Intervention: label people as environmentally friendly individuals on free travel card holders
- ✓ On six bus lines in Rotterdam
  - Three bus lines received **standard** card holder:



Field experiment in Rotterdam

- ✓ Intervention: label people as environmentally friendly individuals on free travel card holders
- ✓ On six bus lines in Rotterdam
  - Three other bus lines received '**experimental**' card holder:

Field experiment in Rotterdam

- ‘experimental’ card holder:
  - distributed about 4000
  - designed by RET marketing team:
    - “Natúúrlijk ga ik met het OV. Doordeweeks of in het weekend, jij reist natuurlijk duurzaam”
    - “Naturally, I take public transport. During the week or during the weekend, you travel quite sustainably”
  - based on pre-test: message enhanced people’s perception of themselves as environmentally friendly

Field experiment in Rotterdam

- ✓ Evaluation: intervention effective at increasing PT use?
- ✓ Measure: bus payment records that are created when people validate their ticket
  - Number of passengers per hour, per bus line
  - for approximately 21 months before the intervention and 1 month after the intervention
  - = about 13000 observations per bus line
- ✓ Post-intervention bus use – pre-intervention bus use larger on 'experimental' than on standard lines?

Field experiment in Rotterdam

- ✓ Result:
  - Post - pre-intervention bus use **0.89% larger** on experimental than on standard lines (**= 120 - 340 rides**)
- ✓ Small or large effect?
  - Intervention reached only 4000 or 6% of all passengers
  - Small intervention: merely a message
- ✓ Cost of intervention?

Practical side

- ✓ Establishing the problem:
  - Encourage commuters to take bus for other purposes
- ✓ Designing the experiment:
  - Working with lab results to design message
  - Important not to mix control and experimental group
  - Travel card holders with message
  - Also for control group to rule out the influence of a gift
  - Picking bus lines with the same demographics

Practical side

- ✓ Intervention:
  - Handing out the travel card holders
- ✓ Measure:
  - Obtaining bus payment records
- ✓ From experiment to ‘daily use’ of nudging
  - Ideas for using this message

Conclusion

- ✓ Social labelling = cost-effective intervention to increase public transport use

Photo: R. Utrecht

Discussion

- ✓ Questions or comments?
- ✓ Experience with nudging that you would like to share?
- ✓ Would you be interested in implementing a similar intervention? What do you see as benefits & costs?
- ✓ Any other problems that you think could be solved with nudging?

✓Thank you

✓ Samuel.Franssens@kuleuven.be

✓ Siegfried.dewitte@kuleuven.be

✓ WdeSwart@ret.nl

CIPTEC project has received funding by the Horizon 2020 research and innovation programme of the European Union (No 636412).