

Linking crash and travel data

Julien Leblud, Brecht Pelssers, Ine Polling,
Heike Martensen, Wouter Van den Berghe



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Project MONITOR

- Objectives

- Monitoring *mobility*
- Monitoring *road safety*



- Partners

- Federal public agency for mobility and transport
- Belgian Road Safety Institute



Project MONITOR

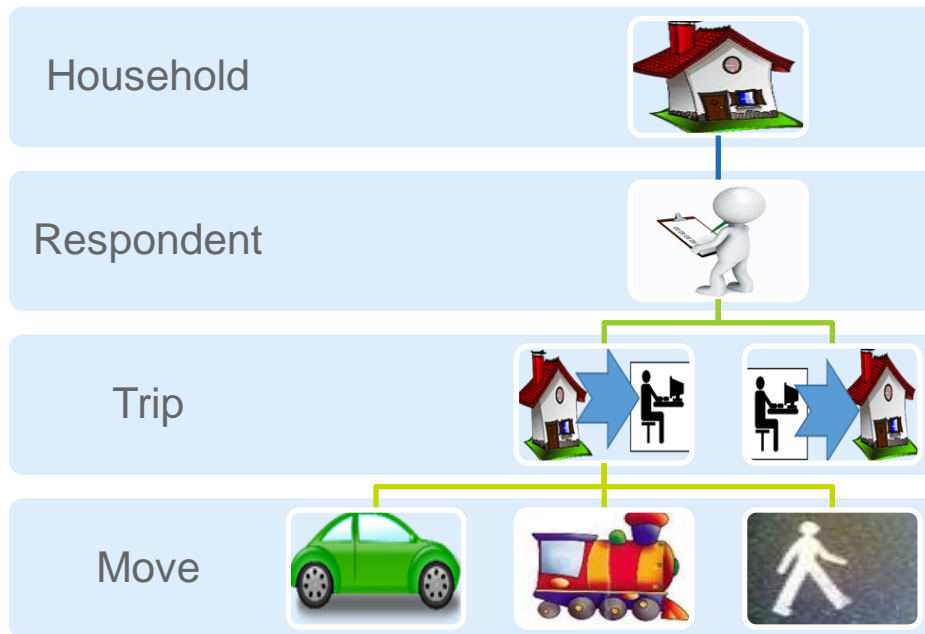
- ▶ Monitoring mobility behaviour
 - ▶ All road user types (+ train & metro)
 - ▶ Conditions & trips taken
- ▶ Monitoring road safety
 - ▶ Crashes & near crashes
- ▶ Method
 - ▶ On-line questionnaires
 - ▶ Representative panel
- ▶ 1. Detailed questionnaire + trip diary
- ▶ 2. Quick questionnaire



Detailed Questionnaire with Diary



Travel Survey + Road Safety Information



Access to Pub. Trans.	Vehicle ownership	# Persons
Gender, age	Profession, Education	Commuting
Time, speed	Departure, end	Purpose
Length	Duration	Travelmode

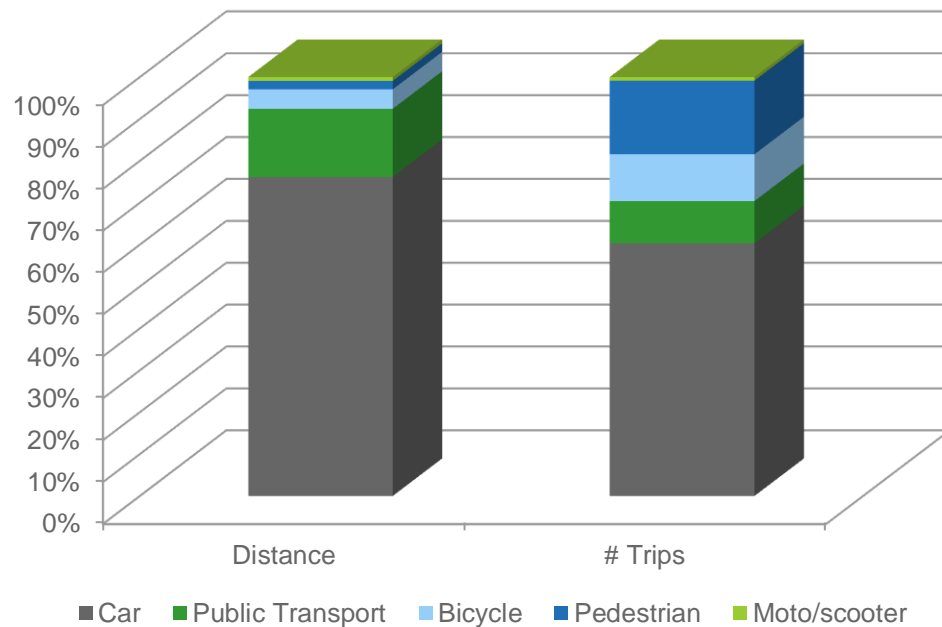
Crash?	• Opponent? Consequence?
Incident?	• Consequence?

Planned: N = 10 000

Present state: N = 3 000

Runtime Sep 2016 – Sep 2017

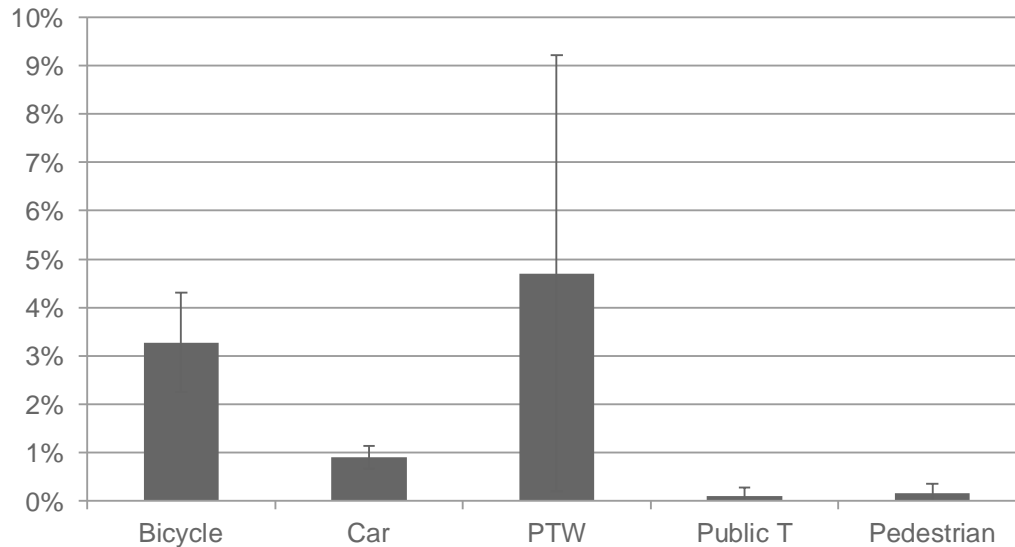
Share of Travel Modes



- Substantial share of trips done by foot, bike or public transport.



Incidents per 100 Moves

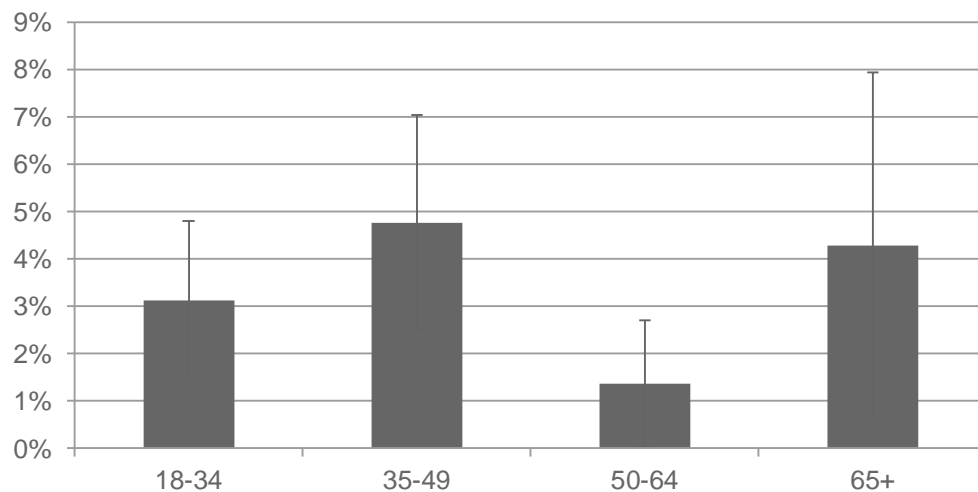


- Two-wheelers have the highest share of incidents.
- Cyclists: 3 times more than cars
- Motorcyclists: 4 times more than cars



Incidents per 100 moves

Cyclist

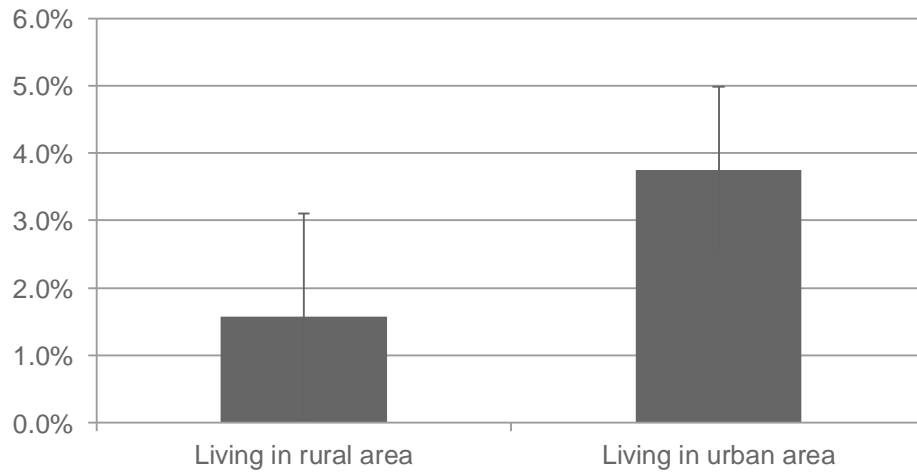


- Middle-aged cyclists have the highest incident rate.



Incidents per 100 moves

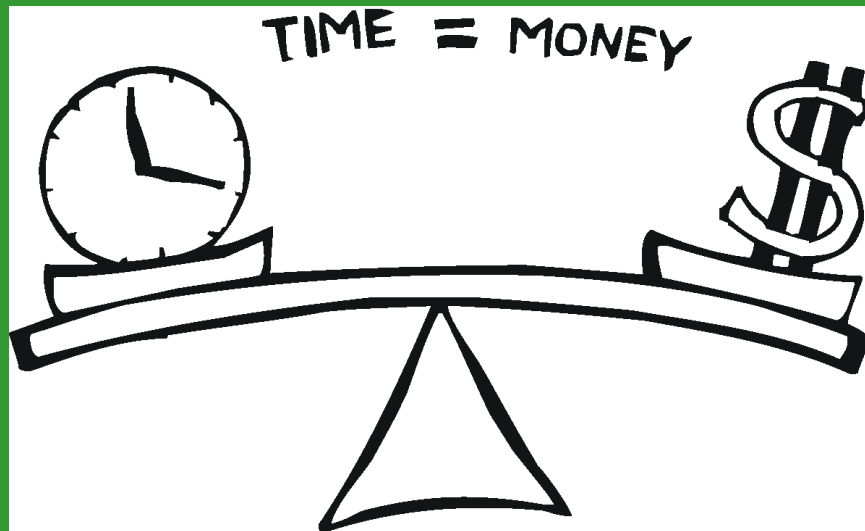
Cyclist



- Cyclists in urban areas have a higher incident rate.



Quick Question

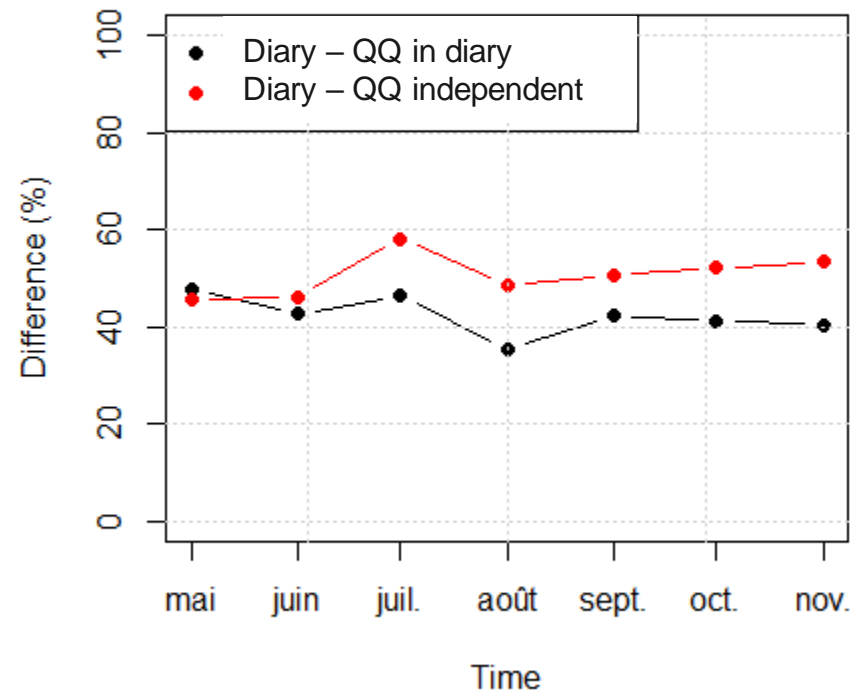


Quick Question

- Background
 - Need for continuous data disaggregated in time
 - Cost of full questionnaire + diary
- Research question
 - Can we monitor mobility & crashes in a more simple way?
- Method: quick questions
 - Did you travel yesterday?
 - Yes/no per mode
 - Number of km for each “yes”
 - Did you have a crash in the last 3 months?
 - Yes/no
 - Number of crashes
 - Mode & severity for each crash
- Target: 20 000 respondents

Quick Question (QQ) calibration with trip diary

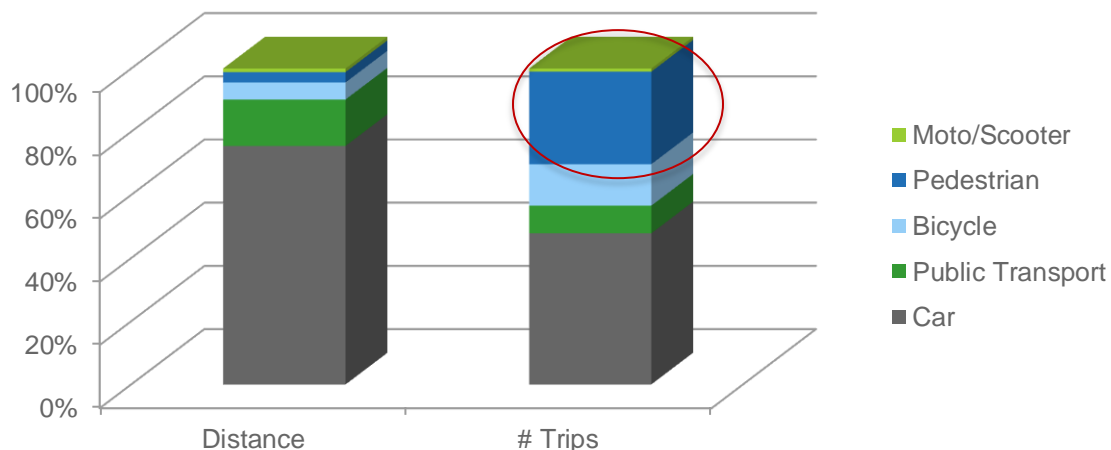
- ▶ QQ delivered in 2 ways
 1. Together with trip diary
 - ▶ quick question first, then diary
 2. Independently
- ▶ Comparison
 - ▶ Diary: Mean distance per person per day is almost double of QQ
 - ▶ No difference between two types of QQ.
 - ▶ Difference QQ – diary is constant.



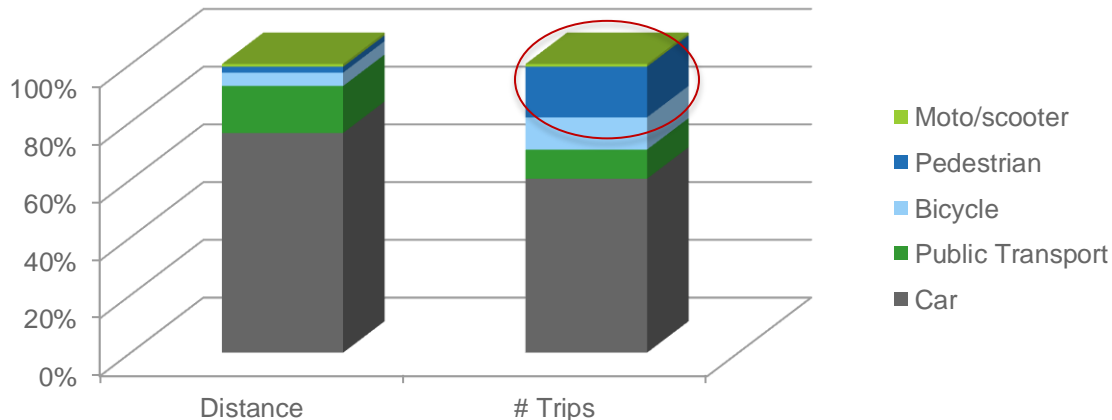
Comparison Quick Question and Trip Diary

- ▶ Relative share per mode agree between QQ and trip diary.
 - ▶ Except for pedestrians
- ▶ Absolute numbers (estimated distances & # of trips) are far larger in trip diary.
- ▶ Use trip diary to calculate conversion factors for quick question data.

Quick Question



Trip Diary



Conclusion

- ▶ Trip diary delivers detailed mobility data.
 - ▶ Who goes where, when, how, to do what?
- ▶ Near crash data link mobility to road safety
 - ▶ Which trips have to become safer?
 - ▶ Indispensable when promoting “active modes”
- ▶ Continuous monitoring of mobility per travel mode is difficult (expensive) to achieve with detailed questionnaire & trip diary
- ▶ Quick question can be used intermediary to estimate travel behaviour
 - ▶ Calibration with trip diary
 - ▶ Calculation of conversion factors



WANT TO KNOW MORE?

julien.leblud@ibsr.be



brecht.pelssers@bivv.be



ine.polling@mobiliteit.fgov.be

