An original way of enforcing speed limits: the use of 2D police dummies

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Overview of presentation

1. Context
2. The experiment in Belgium
3. Results
4. Conclusions

Context

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Police dummies and why they are used

- When policemen are visible, car drivers tend to respect traffic rules, including speed limits.
- It is very labour intensive and costly to have policemen on all critical places. An alternative could be a "police dummy"
- "Police dummies" are replicas (from plastic, hardboard, wood, …) of policemen or police cars. These silhouettes feign the physical presence of the police.
- It is supposed that such police dummies could also have a similar deterrent effect as real policemen.

Examples from all over the world (1)

Luxembourg

Germany

Ukraine

Examples from all over the world (2)

USA

China

Thailand

Does it work?

- Basic assumptions
  - The deterrent effect for speeding enforcement is the risk which drivers think they have of being caught.
  - The presence of policemen increases this subjective risk (and hence the deterrent effect)
  - The presence of a dummy has a similar deterrent effect as a real policemen

- Results from a literature survey
  - Dummies can be effective for a short term
  - Best effects at hazardous locations
  - Keep surprise effect by regular moves
  - Can be combined with real controls

- Few scientific effect evaluations

The experiment in Belgium

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Characteristics of the experiment

- Research question: what is the deterrent effect of police dummies on roads in an urban environment?
- Cooperation between local police of Zaventem and BRSI
- Streets selected
  - 30 and 50 km/h roads
  - Roads close to schools
- Measurements during 3 weeks/experiment:
  - week 1: baseline (pre-measurement)
  - week 2: experimental manipulations
  - week 3: post-measurement

Initial design and modifications

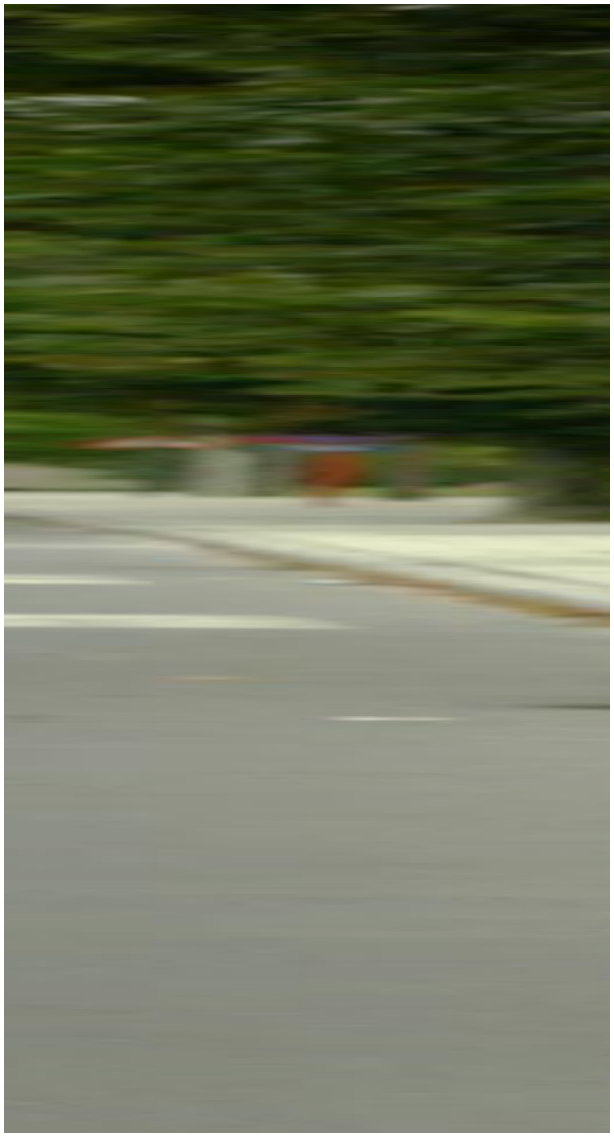
- Initial design
  - measurement during a full week
  - at 4 different locations
  - with control locations for all streets
  - complemented with pre- and post measurements

- Adaptations
  - Initially planned to measure speed with radar lasers, but eventually replaced by induction loop systems

  - Because of data quality and measurement problems, eventually only 3 experiments were implemented

Some lessons learned

- Not easy to find adequate locations:
  - Visibility of dummy (could be masked)
  - Sufficient space on the footpath
  - Protection against theft
  - Find equivalent control locations
- Need for very accurate measurements
- Measure both directions of traffic
- More labour intensive than initially thought
  - Identification of appropriate locations
  - Installation and calibration of measurement equipment
  - Verification

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Results

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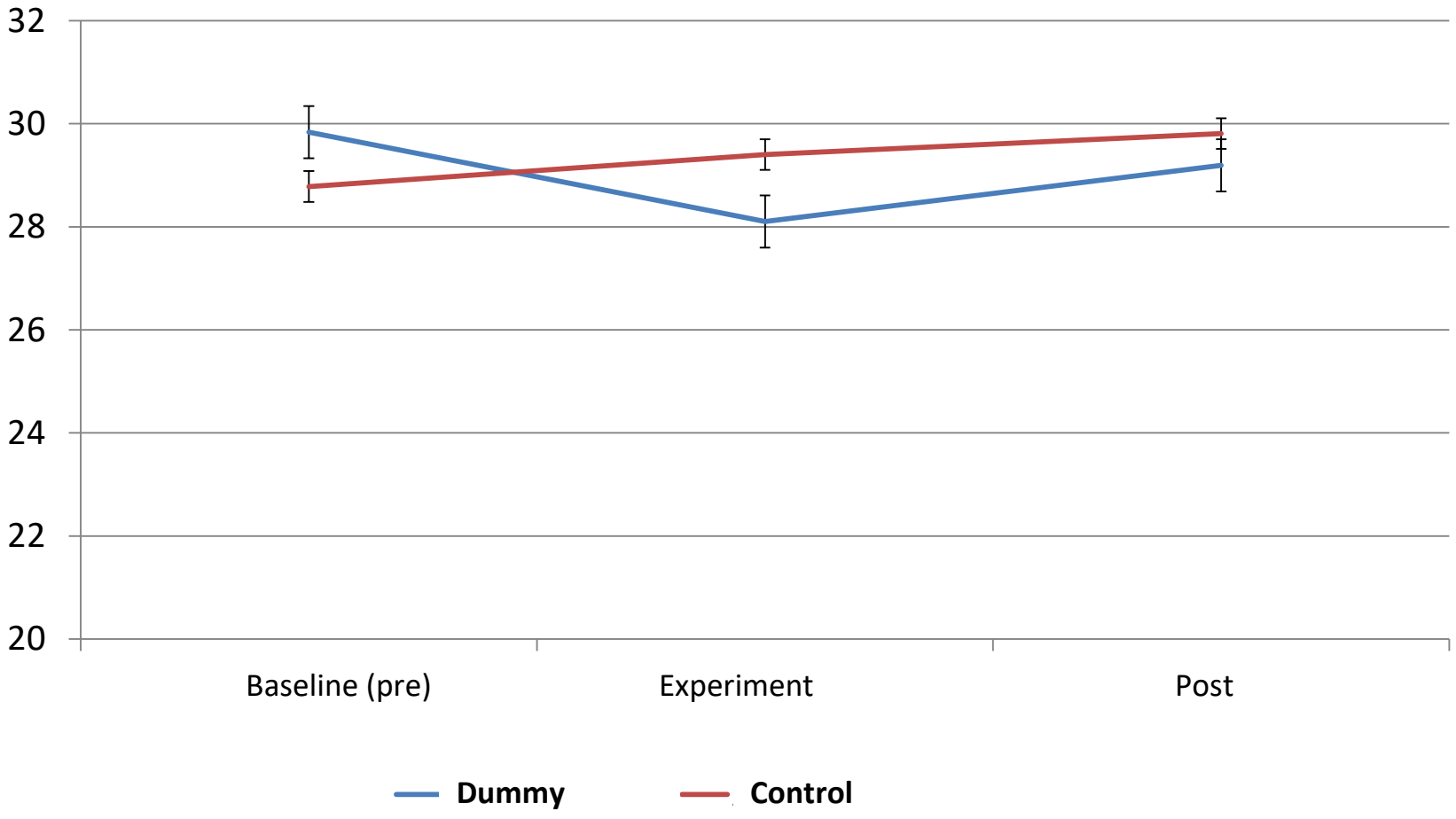
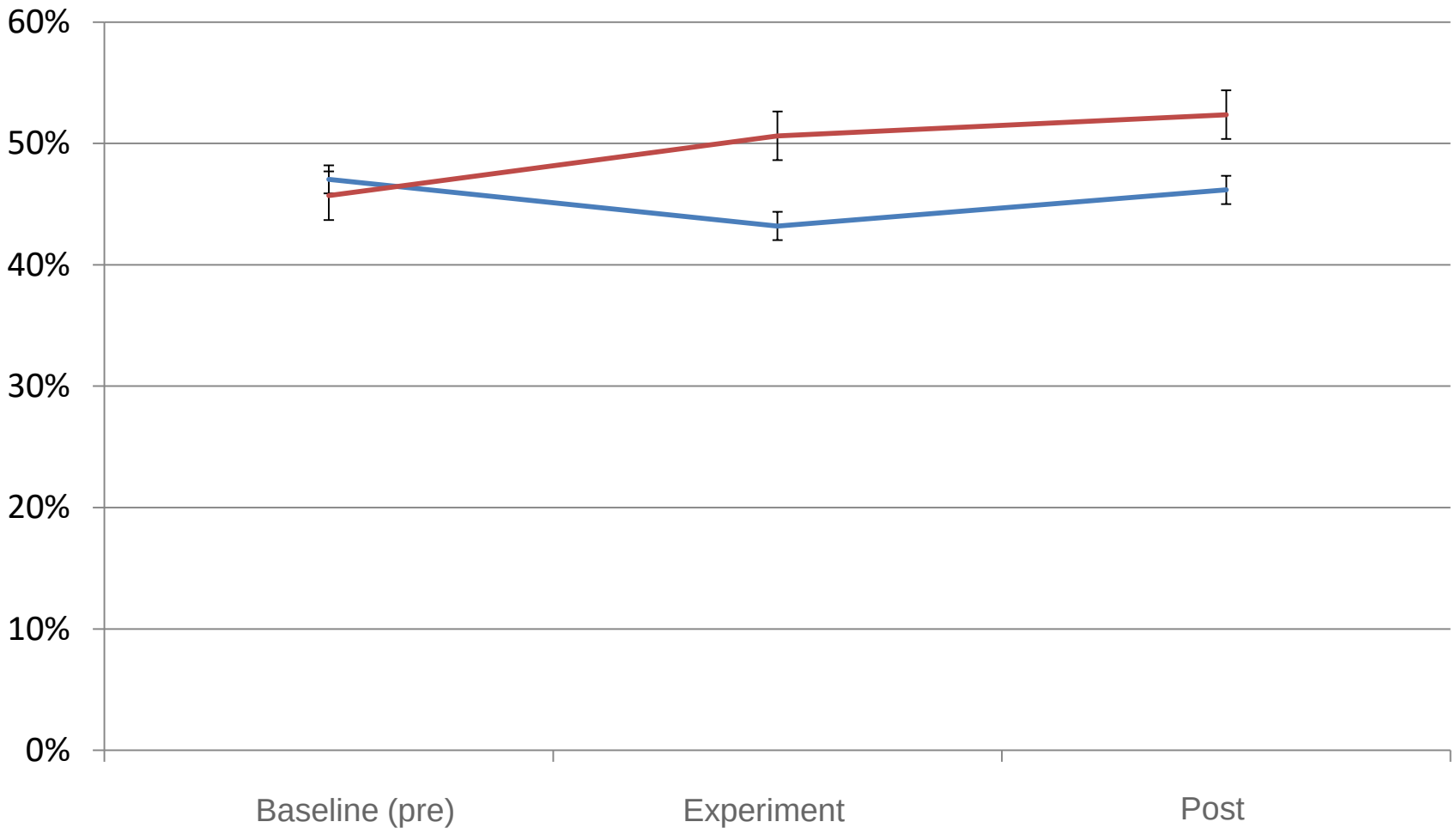
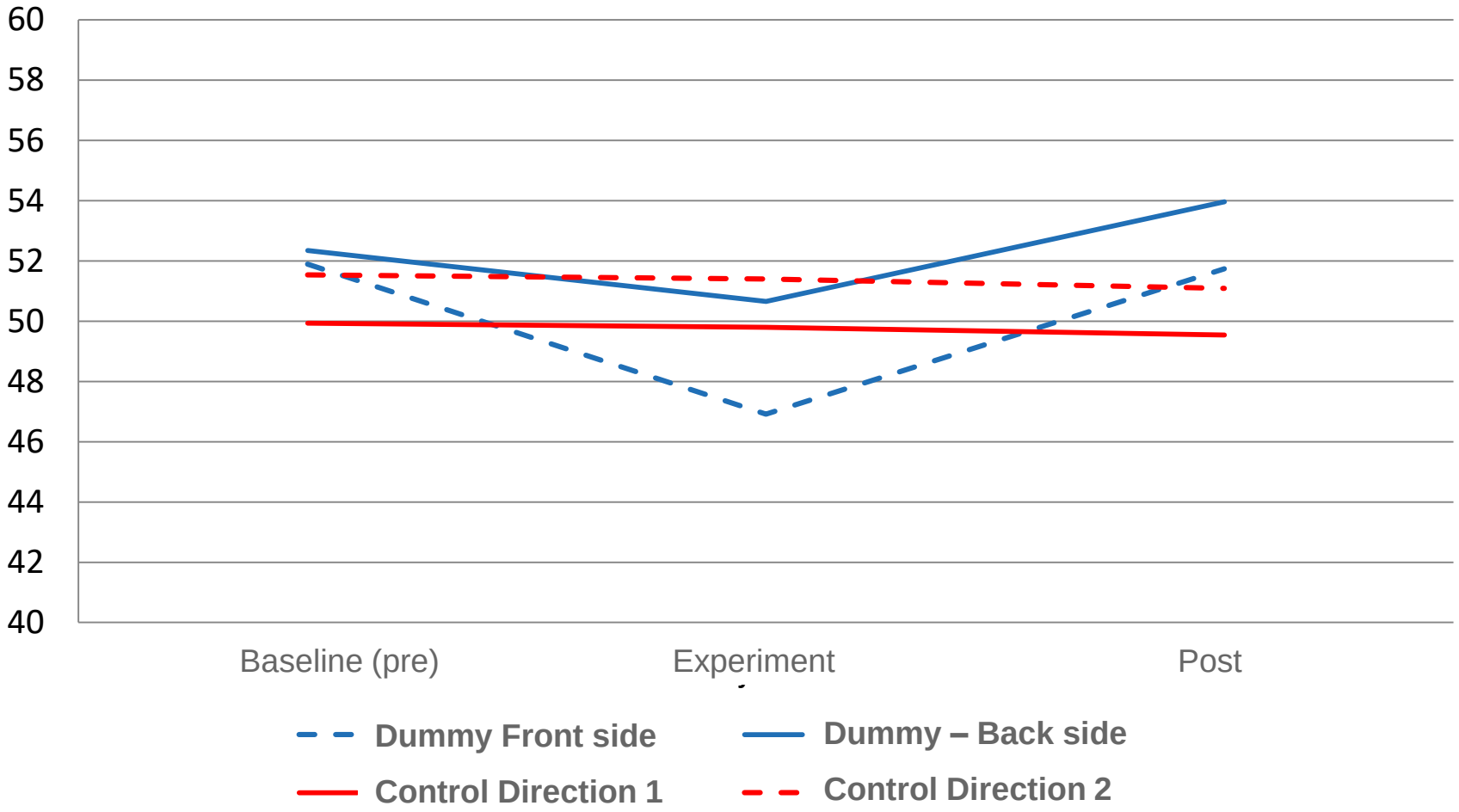
Experiment 1 – Average speed



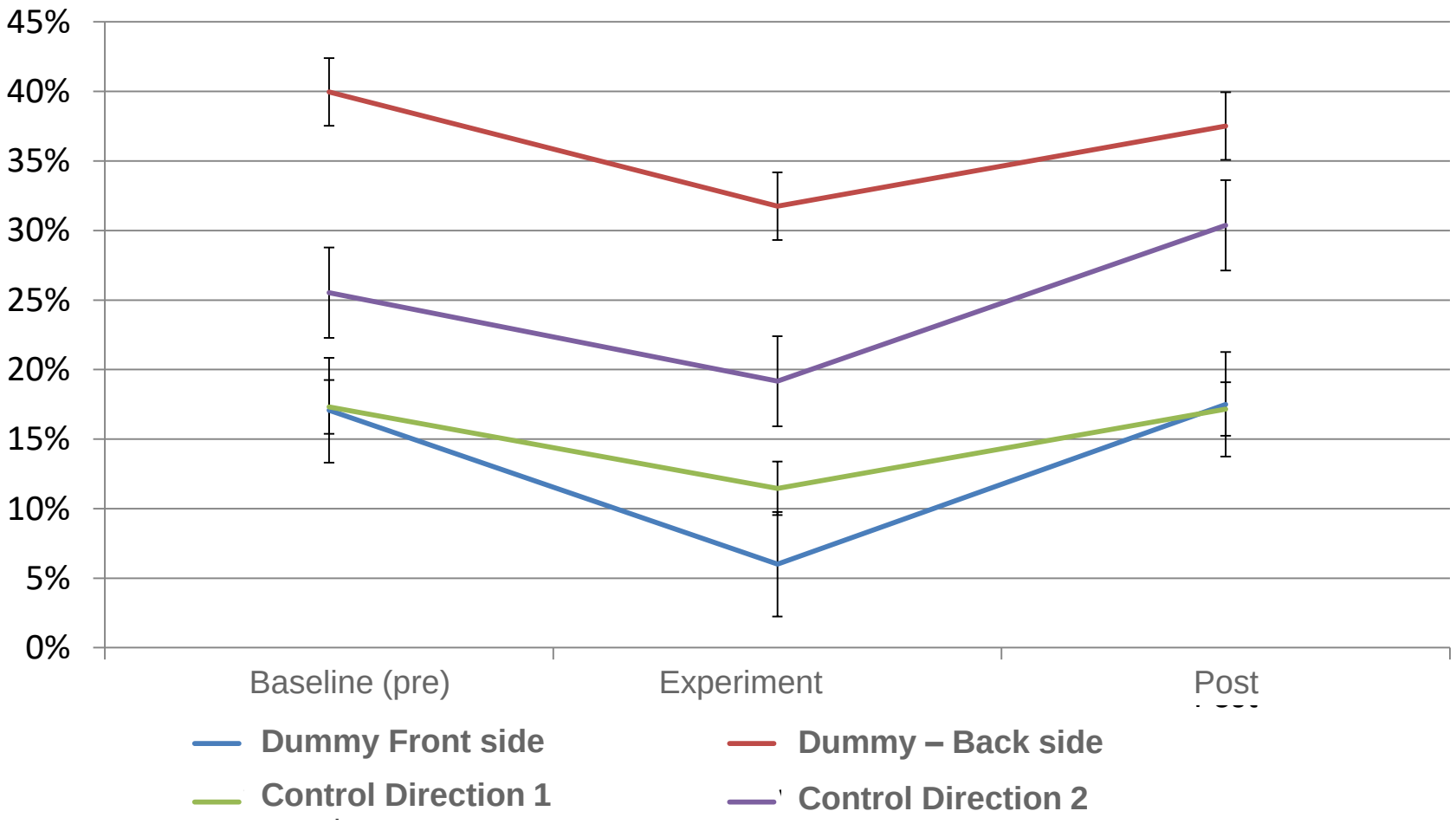
Experiment 1 - Percentage speed infractions



Experiment 2 – Average speed (in 2 directions)



Experiment 3 - Percentage infractions (2 directions)



Conclusions

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Conclusions

- Effect of dummies
  - Light but statistically significant reduction in speed
  - The number of drivers exceeding the speed limit halved during the period that the dummy policeman was placed.
  - The effects do not last when dummies are taken away

- Recommendations
  - Put at hazardous locations
  - Displace dummies on a regular basis
  - Interchange with real policemen

- Further research
  - Compare with effects of real policemen
  - Compare with effects of other devices

Thank you for your attention !

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