

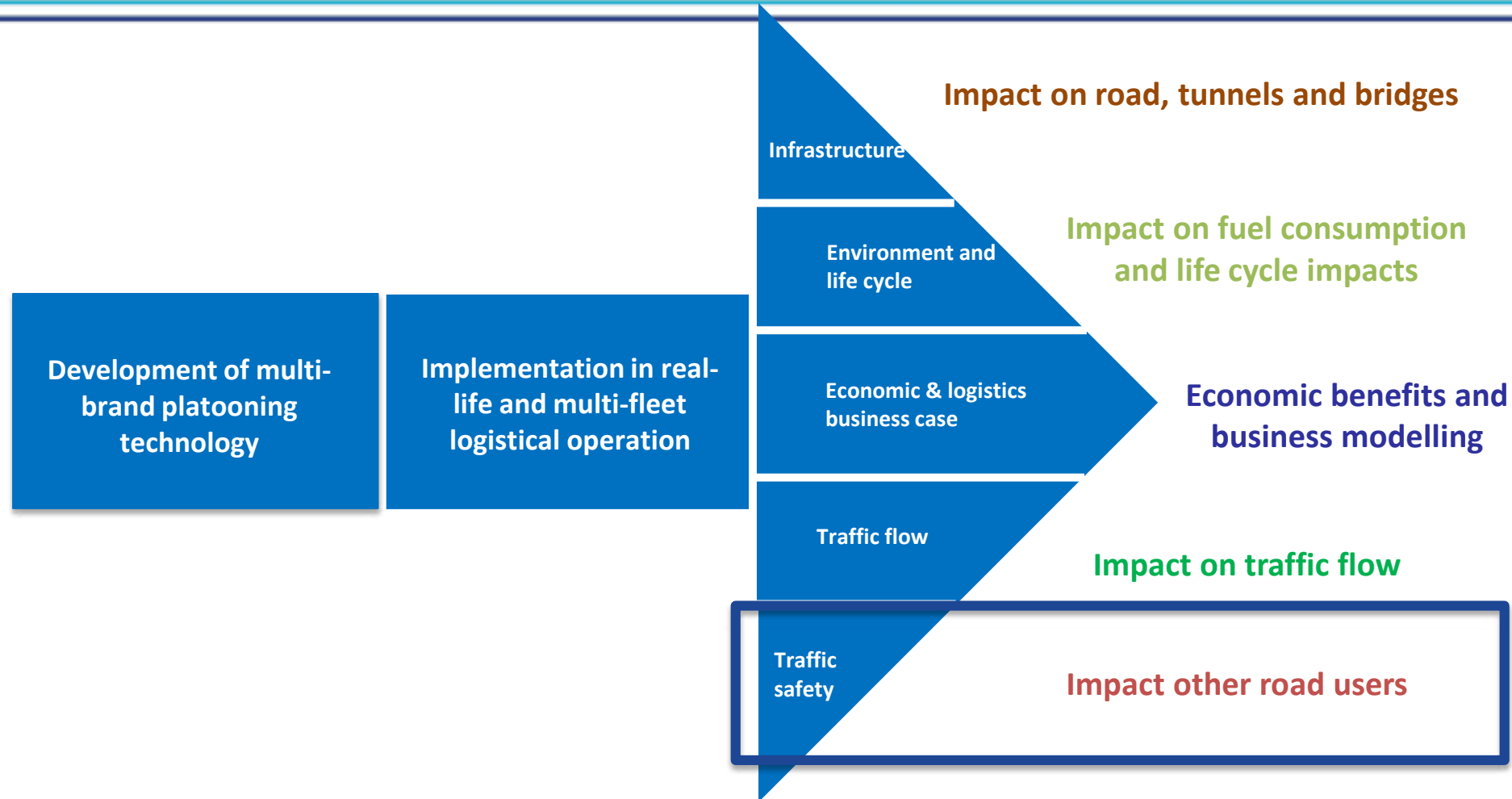


ENSEMBLE

The Impact of multi-brand platooning on other road users: a simulator study

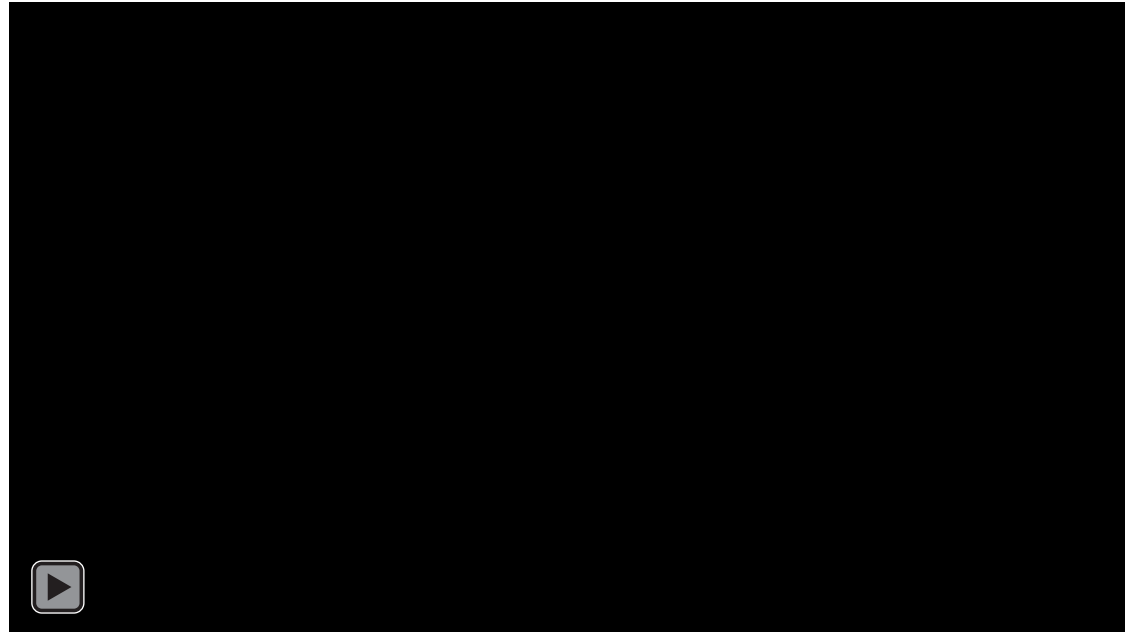
Jallais, C., Vincent, F., Hoarau, A., Moreau, F., Ndiaye, D., Tattegrain, H.
Université Gustave Eiffel

Focus on other road users



Evaluating the interaction between the platoon characteristics and car drivers

- Road users' emotional and attentional states
- Road users' driving behaviour



Experimental Design



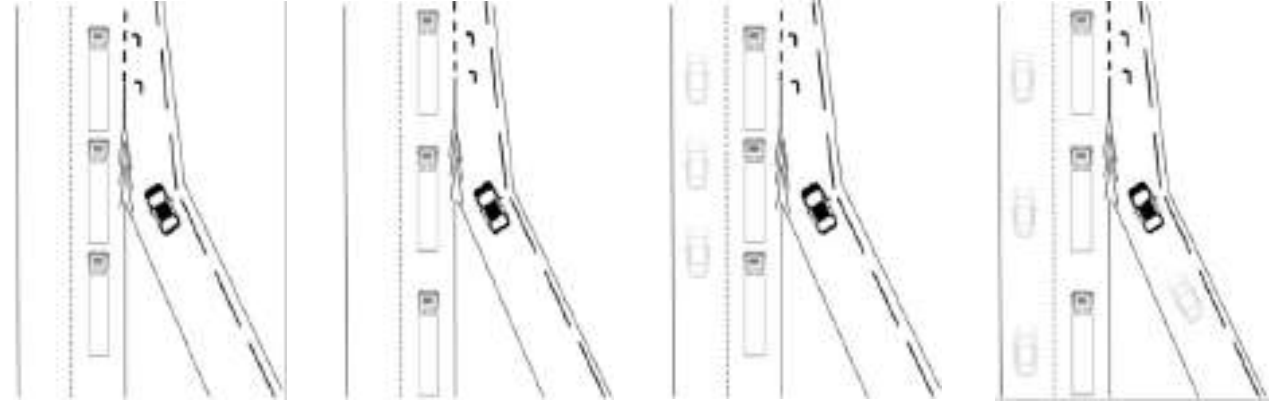
- Use cases:
 - 3 or 7 trucks
 - Truck Inter distance 0,8 sec and 1,5 sec
 - Overtakings; egress and ingress on highway; low and high traffic

Experimental Design & Hypotheses

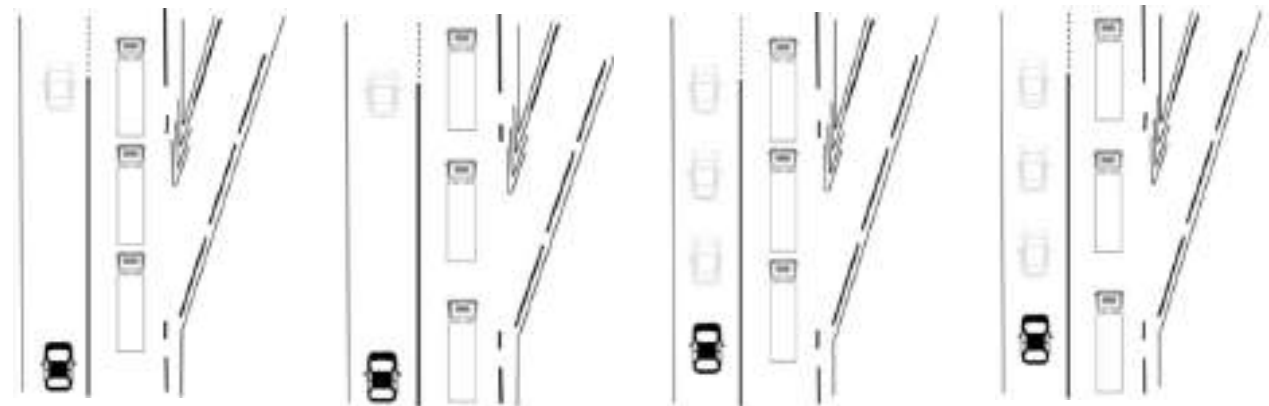
Hypotheses:

- Emotion and attention:
 - Higher negative impact of 7-truck platoon
- Road users' driving behaviour
 - No cut-in with 0,8 sec intervehicle distance



Ingress (highway entry)



Egress (highway exit)



Experimental Design

- Participants
 - 51 persons involved (32 males)
 - Between 20 and 49 yo (mean=27.63 yo, sd=8.62)
 - French driving license for 3 years or more
- Divided into 2 groups
 - (3 trucks platoon group) 
 - 7 trucks platoon group 

Measurement

- **Subjective:**

- Emotional state:



Fear



Anxiety



Anger

- Attentional level: Alertness



Alertness

- **Behavioural:**

- Speed

- Position of the participant: ahead, between trucks or behind the platoon