



VRU-proxi IWG

Accidentology analysis summary

Brussels, 20-22 March 2018



Summary

1. Introduction
2. Contributors & accident criteria
3. Accidentology results
4. Conclusions



Part I

Introduction



Introduction

➤ TOR

- The IWG shall primarily focus on low speed manoeuvres in any direction based on accident data
- The group shall focus on vehicles of categories M and N
- The work of the IWG shall be:
 - ❖ Forward motion:
 - Vehicle turning - BSIS
 - Vehicle driving straight or taking off from standstill
 - ❖ Reversing motion
 - ❖ Direct vision

➤ Accidentology data analysis update with latest information

- 🌐 Switzerland
- 🌐 Taiwan
- 🌐 Netherlands




Part II

Contributors & accident criteria










COUNTRY	Data year	Driving speed criteria	Accident scenarii (opposite vehicle manoeuver)					Fatalities	Opposite vehicle category							Comments	
			Straight (S)	Turn to Driver Side (TDS)	Turn Opposite to Driver Side (TODS)	Take Off (TO)	Reversing [®]		M1	N1	M2	N2 < 7,5t	N2 > 7,5t	N2	M3		N3
BELGIUM	2014-2016	≤ 30 khp	x	x	x		x	x	x	x							Vehicle category: one for M2+M3 and one for N2+N3
FRANCE	2011	≤ 30 khp	x	x	x		x	x	x	x	x			x	x	x	
JAPAN	2010-2014	≤ 20 khp	x	x	x	x	x	x	x	x	x	x	x		x	x	
CANADA	2011-2015	< 40 kph	x	x	x			x									Vehicle category: light duty vehicles, unit trucks >4536 kg GVWR, road tractors, buses
NETHERLANDS	2005-2013	Urban or unknown and ≤ 51 kph	x	x	x			x	x	x				x		x	M and N categories
SPAIN	2010-2013		x	x	x			x	x								Maximum 2 vehicles involved in the accident. Vehicle category: cars, vans, trucks (GVW > 3.5 T), Buses
FINLAND	2012-2016		x	x	x			x	x								Vehicle category: one for M2+M3 and one for N2+N3
TAIWAN	2011-2013 (p) 2009-2013 (b)		x (p)	x (p)	x (p)	x (p)	x (p)	x (p)	x (p)	x (p)							Vehicle category: one for M2+M3 and one for N2+N3
GERMANY	2016 (b) 2010 - 2016 (p)		x (p)	x (p)	x (p)			x (p)	x (p)	x (p)	x (p)	x (p)	x (p)		x (p)	x (p)	Only 2 participant accidents are considered. Extrapolation of results to be at national level
LATVIA	2010-2016							x									
POLAND	2011, 20012, 2013, 2014, 2105							x	x								Accident scenarii used by poland needs to be more defined Vehicle category: one category for M2, N2, M3, N3
RUSSIA	2016							x (b)									
SWITZERLAND	2011-2016								x	x		x					Vehicle category: M1, M2+M3, N1, N2 <7.5T, N2 > 7.5 T + N3, Other
HUNGARY	2014, 2015, 2016							x									

 All the accident criteria requested available (see matrix)

 Driving speed could not be detailed

 Driving speed and accident scenario could not be detailed

➤ All data can not be considered and compared (except Reversing scenario)

	R	S + TO	TDS	TODS
 FRANCE	X	X	X	X
 BELGIUM	X	X	X	X
 CANADA	X	X	X	X
 JAPON	X	X	X	X
 NETHERLANDS	X	X	X	X
 GERMANY	X			
 SPAIN	X			
 FINLAND	X			
 TAIWAN	X			

➤ Comparable indicators are necessary:

- Average numbers per year
- Percentages with the total number of road fatalities for the accident data period covered as a denominator

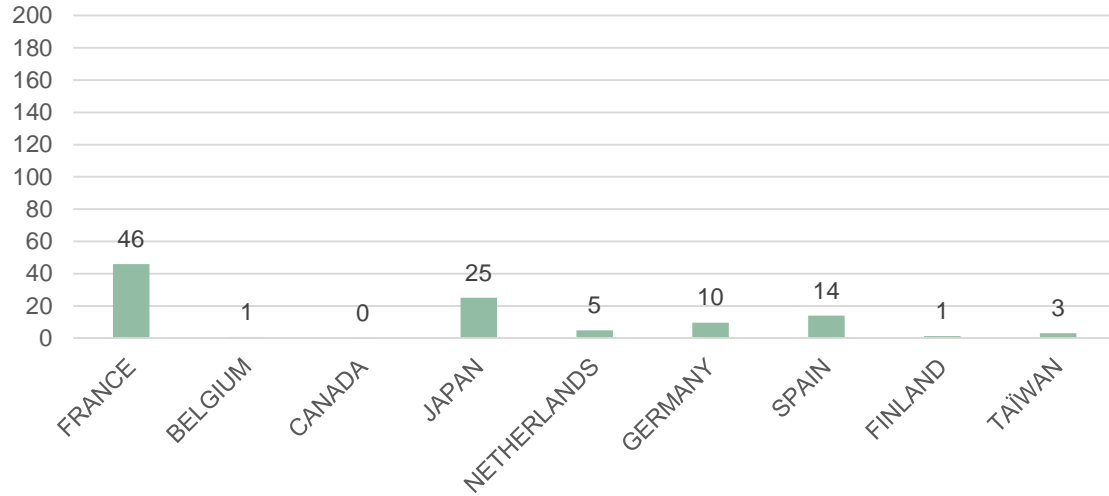


Part III

Accidentology results

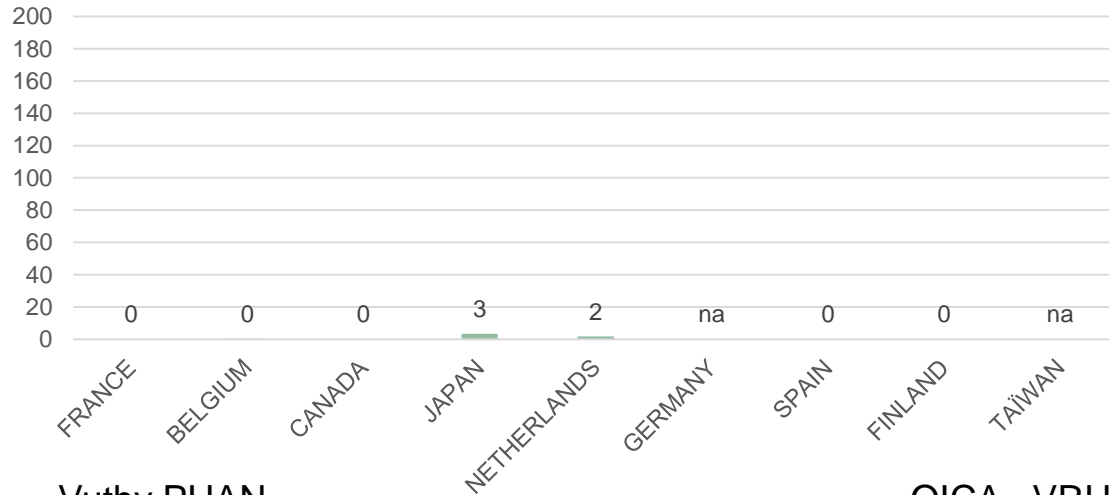


Reversing scenario – All speeds



Average number of pedestrian fatalities per year in accidents involving reversing M/N vehicles

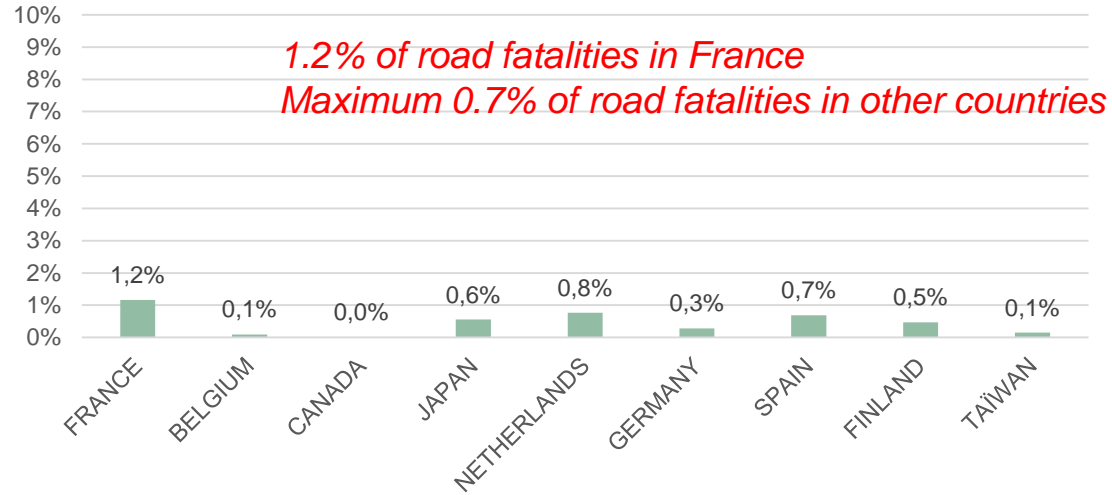
All speeds



Average number of bicyclist fatalities per year in accidents involving reversing M/N vehicles

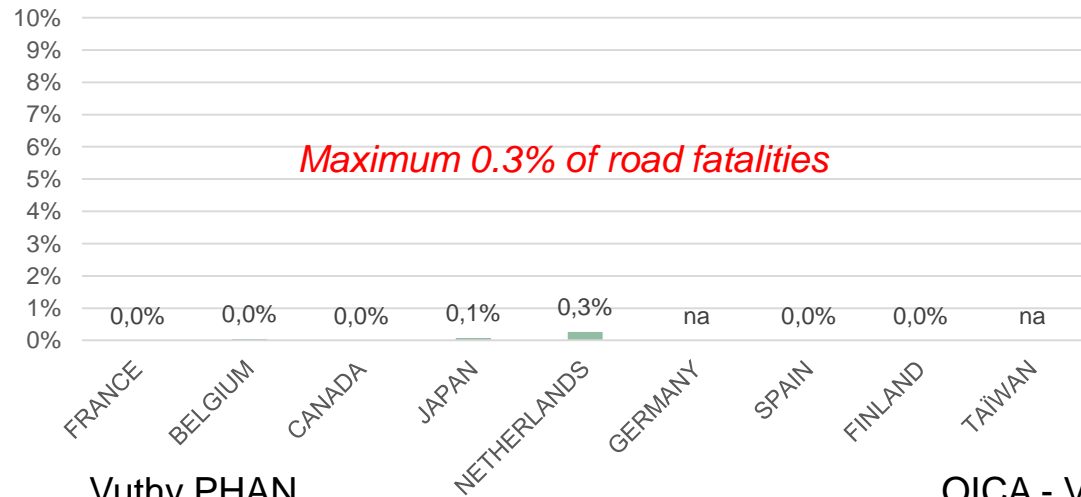


Reversing scenario – All speeds



% of pedestrian fatalities in accidents involving reversing M/N vehicles

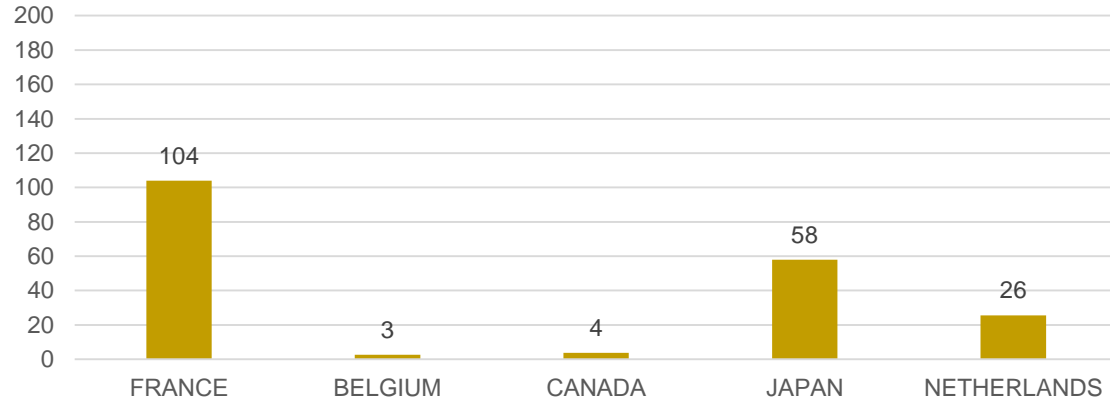
All speeds



% of bicyclist fatalities in accidents involving reversing M/N vehicles



Straight and taking-off scenarii



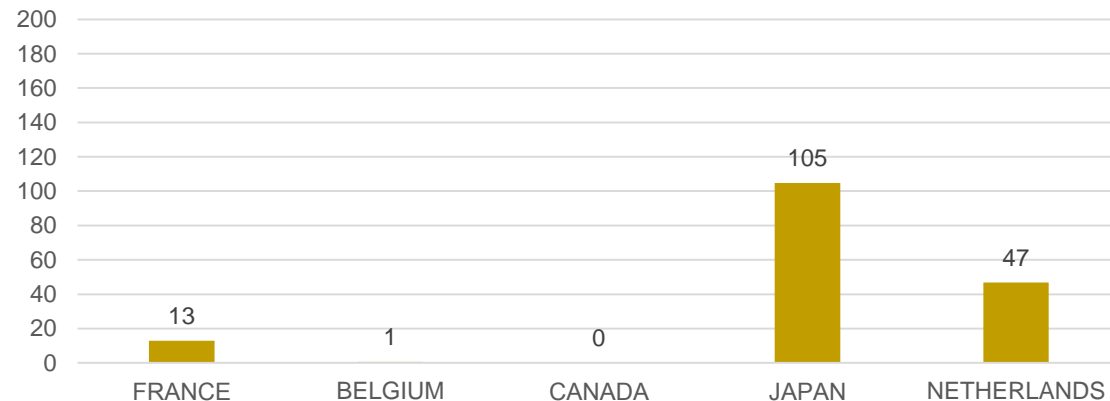
Average number of pedestrian fatalities per year in accidents involving M/N vehicles going straight or taking-off

Driving speed \leq 51 kph: NL

Driving speed \leq 40 kph: CA

Driving speed \leq 30 kph: FR, BE

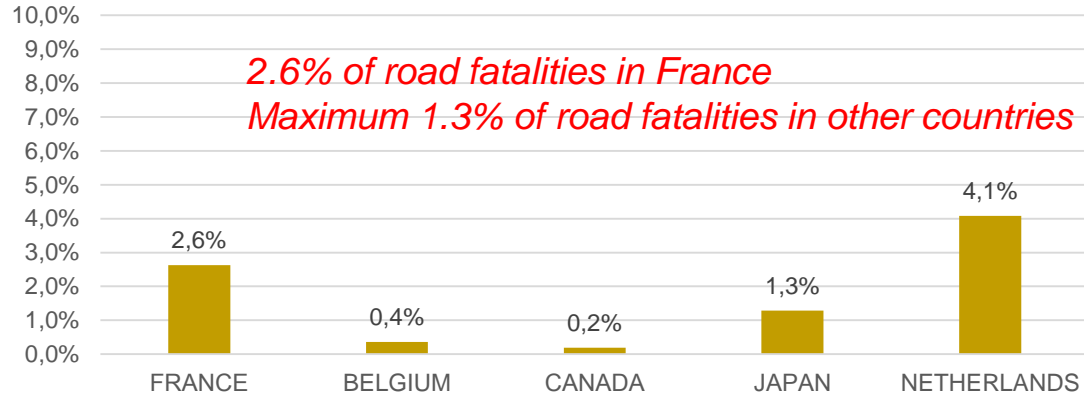
Driving speed \leq 20 kph: JA



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Straight and taking-off scenarii



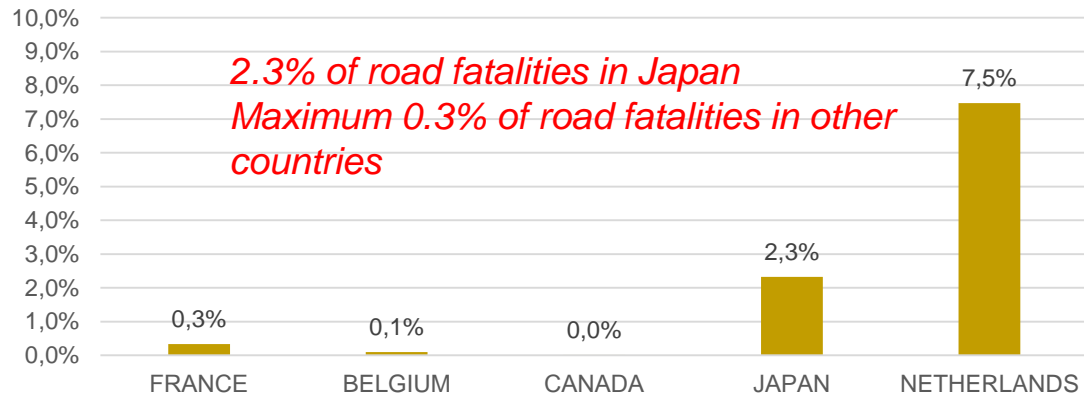
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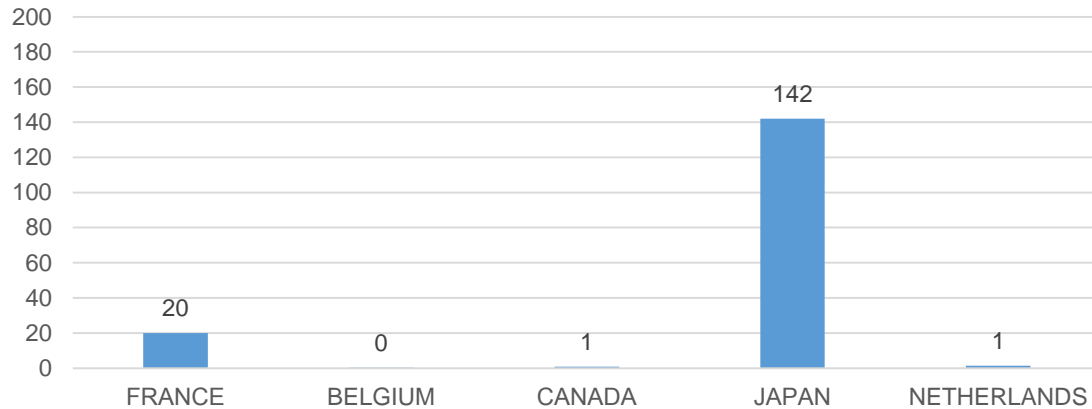
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% of bicyclist fatalities in accidents involving M/N vehicles going straight or taking-off



Turning on driver side



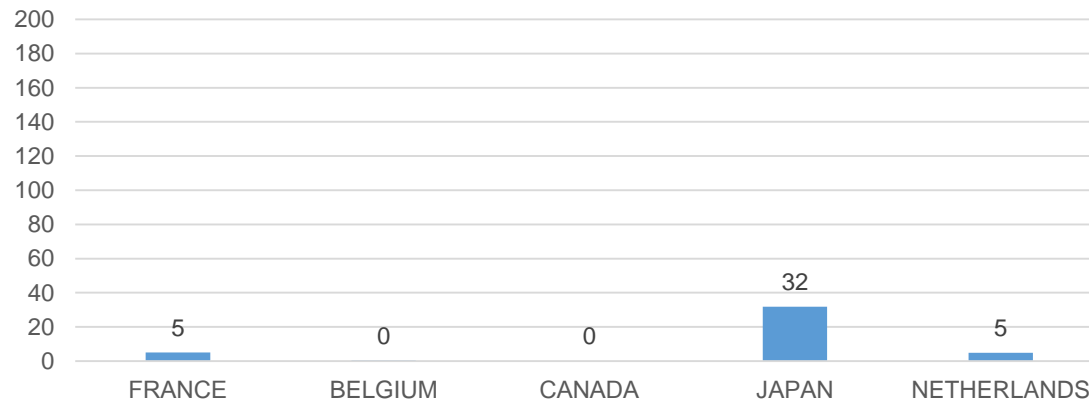
Average number of pedestrian fatalities per year in accidents involving M/N vehicles turning on driver side

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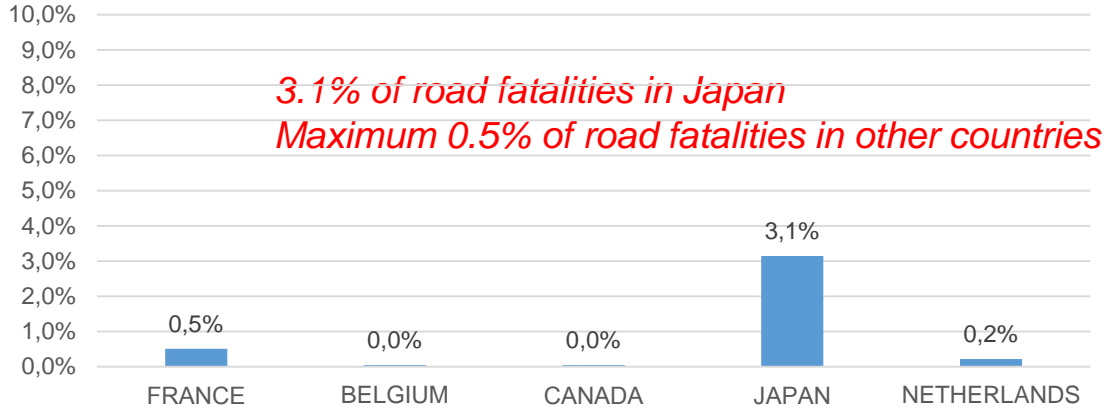
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Turning on driver side



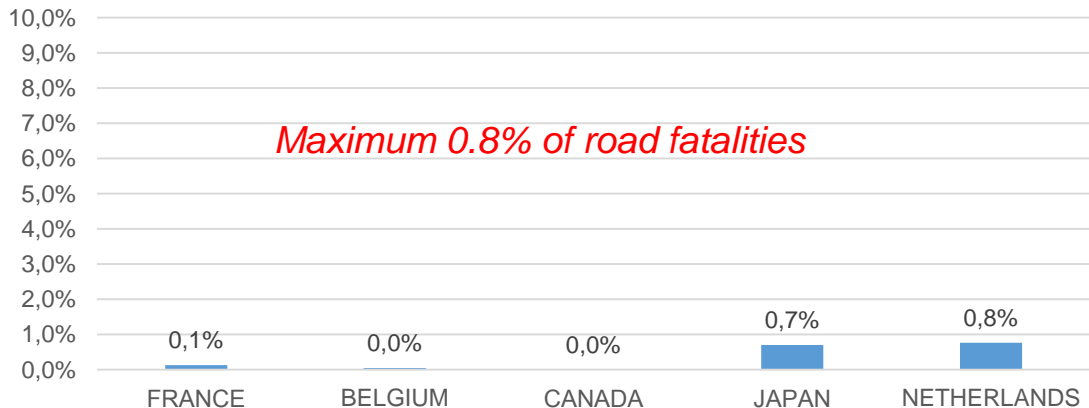
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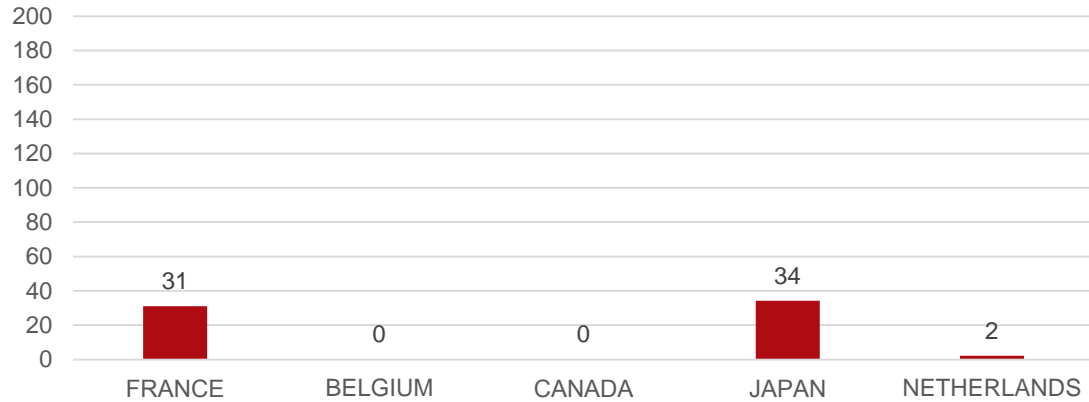
Driving speed ≤ 20 kph: JA



% of bicyclist fatalities in accidents involving M/N vehicles turning on driver side



Turning on opposite to driver side



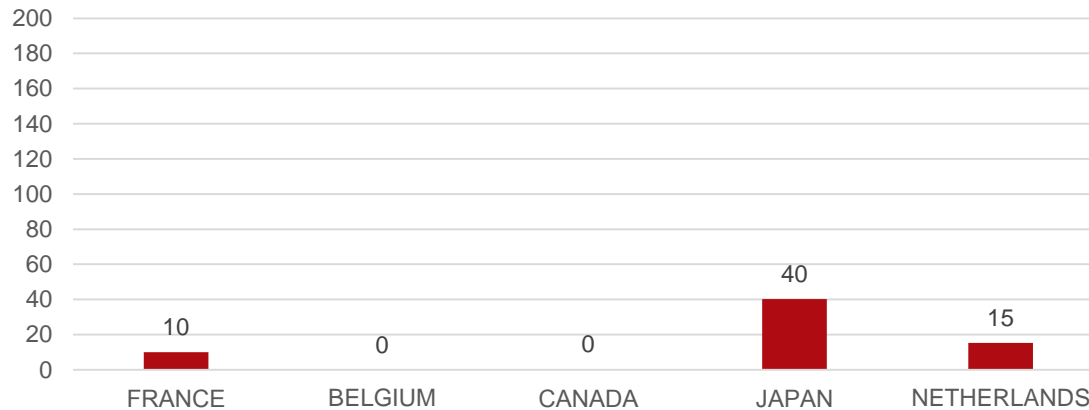
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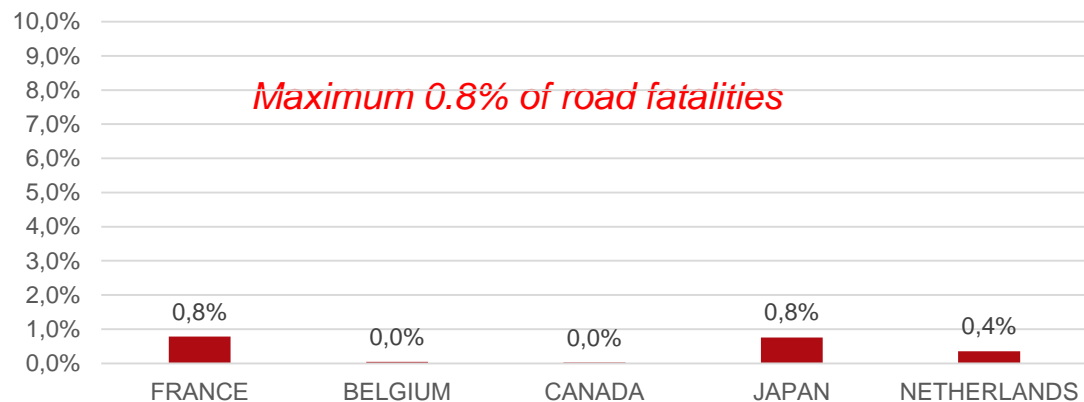
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Average number of bicyclist fatalities per year in accidents involving M/N vehicles turning on opposite to driver side



Turning on opposite to driver side



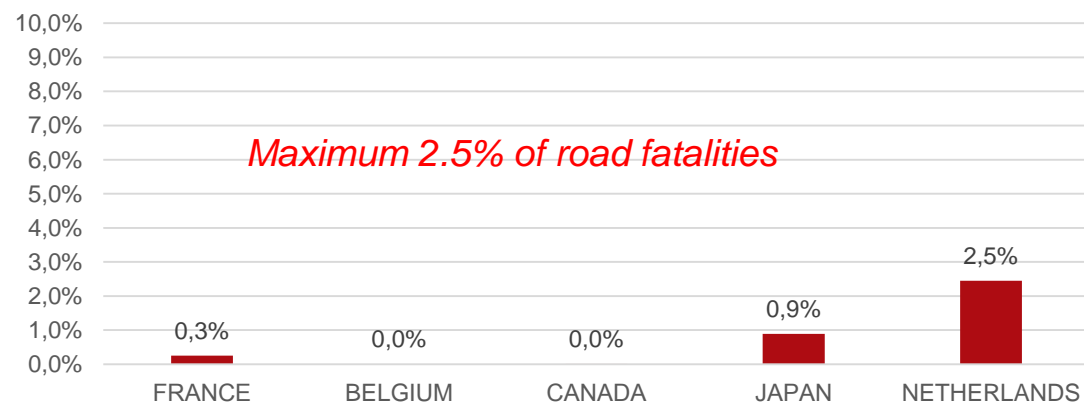
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Driving speed ≤ 20 kph: JA



% of bicyclist fatalities in accidents involving M/N vehicles turning on opposite to driver side

Conclusions

- Any additional accidentology data would be welcome to complete the study.
- Some figures may be overestimated because in some answers the vehicle speed (30 to 50 kph) was exceeding the “low speed” scope (20 kph).
- In every country the number of fatalities in each scenario of the IWG is low compared to the global number of fatalities.
- Next actions:
 - 🌐 Include data without vehicle speed criteria in TDS and TODS scenarii
 - 🌐 Consider « seriously injured » VRU in the analysis to double check the conclusions
 - 🌐 Differentiate accident scenarii according to vehicle categories