Draft

LABORATORY OF ACCIDENTOLOGY, BIOMECHANICS AND HUMAN BEHAVIOR

ACCIDENTOLOGY – BLIND SPOT ACCIDENTS N1/CYCLIST VS. N2/N3/M2/M3/CYCLIST

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LAURA BIGI

STELLANTIS

LAB ACCIDENTOLOGIE, BIOMÉCANIQUE, COMPORTEMENT HUMAIN

Renault Group

SUMMARY

- Context
- Methodology
- Results
  - French analysis
  - Comparison with BAST / GIDAS
- Conclusion

CONTEXT

- Accidentology background
  - French analysis
- UN ECE R151: project of evolution, UN IWG-VRU proxi Task Force 2025
  - Consideration of scope extension to N1 vehicles

METHODOLOGY (1/2)

French national injury accident database: BAAC

- Years 2016-2023 and 2019-2023
  - Periods of time consistent with BASt analysis for Germany
  - 2019 = new reference year for the next decade / road safety strategy.
- N1/Cyclist* injury accidents, relevant for UN ECE R151 (turning right manoeuver)
- Injury accident between N2/N3/M2/M3 and cyclist* for comparison
- Infrastructure:
  - urban area / peri-urban and rural
  - Maximum speed limit of the zones where the accidents occur (from 2019)

* Conventional bikes and e-bike

METHODOLOGY (2/2)

French national injury accident database: BAAC

- **Cascading – synthesis 2016-2023 for analysis**

N1

BAAC 2016-2023	Nb accidents	Nb fatalities	Nb seriously injured	Nb slightly injured
All accidents	430 594	25 336	165 293	374 110
Accidents against cyclist	40 251	1 609	11 801	29 525
Accidents involving at least 1 LCV (N1)	43 124	2 542	14 139	42 367
Accidents involving at least 1 cyclist and 1 N1	2 749	111	749	1 924
Accidents involving at least 1 cyclist and 1 N1 turning right	327	3	45	283
Accidents involving at least 1 cyclist and 1 N1 turning right, in the same direction	264	2	35	230
Accidents involving at least 1 cyclist and 1 N1 turning right, in the same direction, with impact relevant for ECE R151	205	2	21	184

N2, N3, M2, M3 (scope UN ECE R151)

BAAC 2016-2023	Nb accidents	Nb fatalities	Nb seriously injured	Nb slightly injured
All accidents	430 594	25 336	165 293	374 110
Accidents against cyclist	40 251	1 609	11 801	29 525
Accidents involving at least 1 heavy vehicle (N2/N3/M2/M3)	26 577	3 603	10 357	23 571
Accidents involving at least 1 cyclist and 1 N2/N3/M2/M3	1 406	177	537	753
Accidents involving at least 1 cyclist and 1 N2/N3/M2/M3 turning right	282	56	104	133
Accidents involving at least 1 cyclist and 1 N2/N3/M2/M3 turning right, in the same direction	232	49	82	111
Accidents involving at least 1 cyclist and 1 N2/N3/M2/M3 turning right, in the same direction, with impact relevant for ECE R151	178	38	61	86

*NB: tables available for each year, allowing also the **synthesis for 2019-2023** period; plus, tables available with **focus on cyclists as casualties***

RESULTS (1/7)

Synthesis: 2016-2023 and 2019-2023

Synthesis 2016 - 2023 (BAAC)

:lasses	Accidents	Fatalities	Seriously injured	Slightly injured
N1	205	2	21	184
N2/N3/M2/M3	178	38	61	86

Synthesis 2016 - 2023 (BAAC) - Focus on cyclist injuries

:lasses	Accidents	Fatalities	Seriously injured	Slightly injured
N1	205	2	21	181
N2/N3/M2/M3	178	38	61	83

Synthesis 2019 - 2023 (BAAC)

Vehicle classes	Accidents	Fatalities	Seriously injured	Slightly injured
N1	147	1	13	134
N2/N3/M2/M3	117	47	42	51

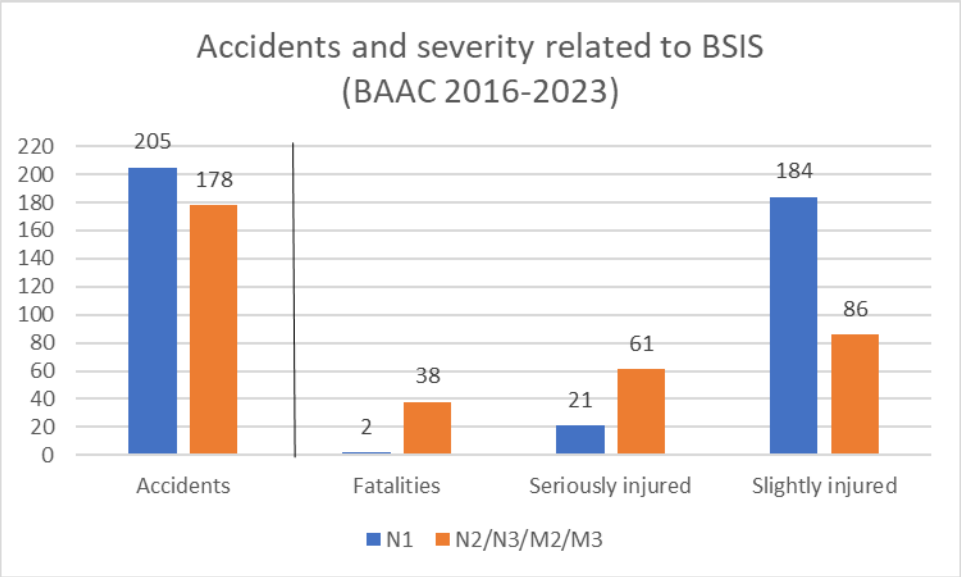
Synthesis 2019 - 2023 (BAAC) - Focus on cyclist injuries

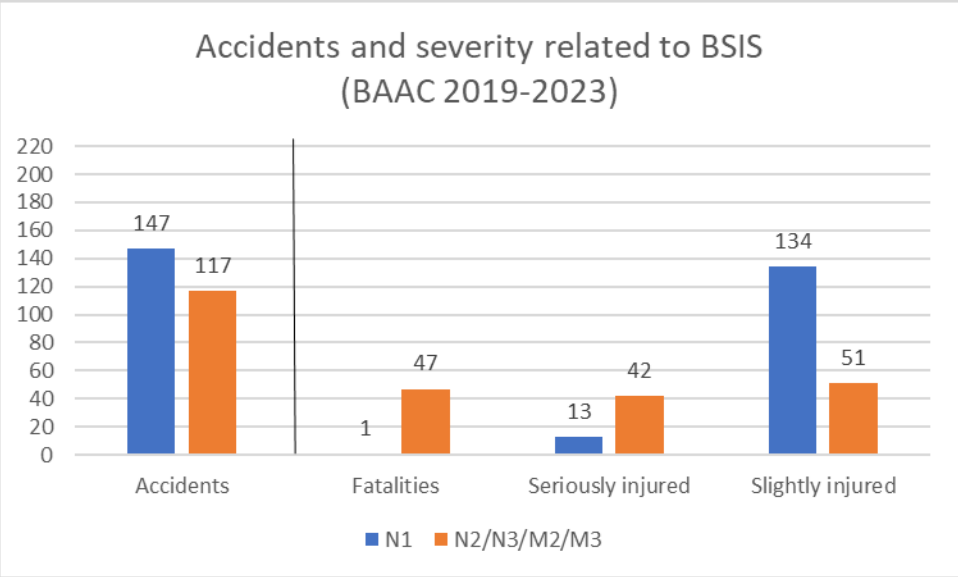
Vehicle classes	Accidents	Fatalities	Seriously injured	Slightly injured
N1	147	1	13	133
N2/N3/M2/M3	117	47	42	51

- **Focus on cyclist injuries show that casualties are almost 100% the cyclists.**
- **Some slightly injured can be occupant in N1 or N2/N3/M2/M3 respectively (see red circles).**

RESULTS (2/7)

Synthesis: **2016-2023** **2019-2023**

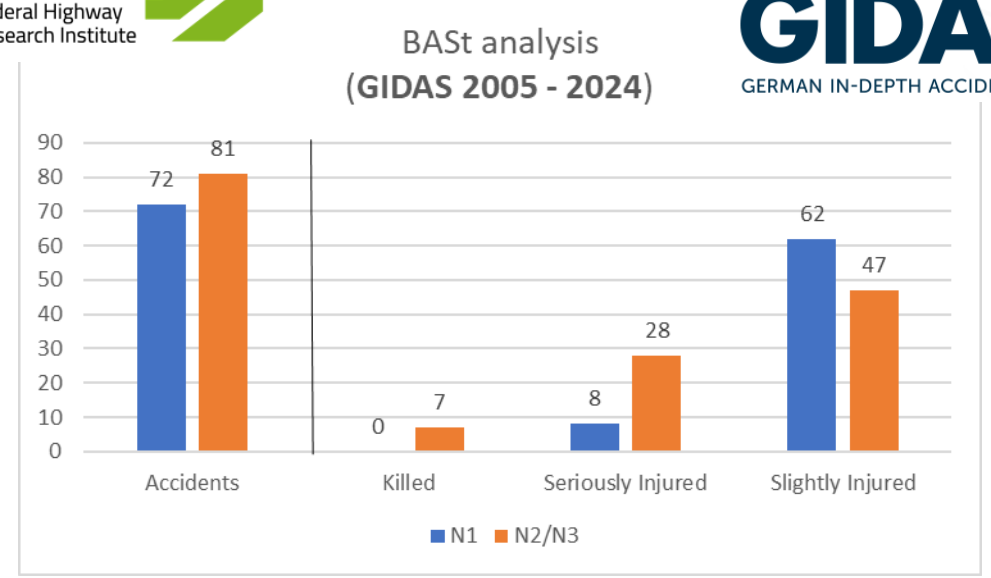


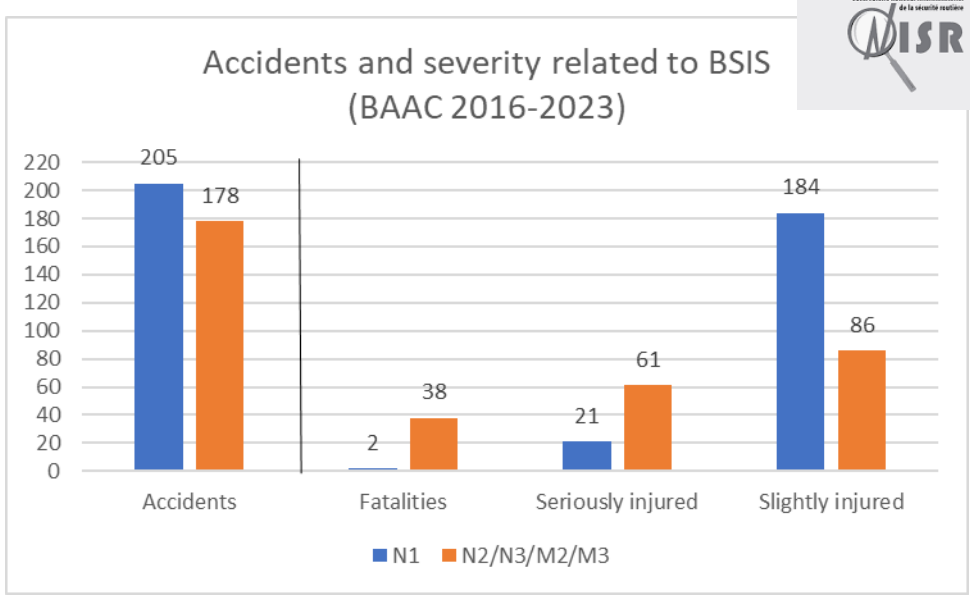


- **Fatalities: nearly no fatalities with N1**
- **Seriously injured: factor 3 with N2/N3/M2/M3 compared to N1**

RESULTS (3/7)

Comparison with GIDAS (see BASt presentation)

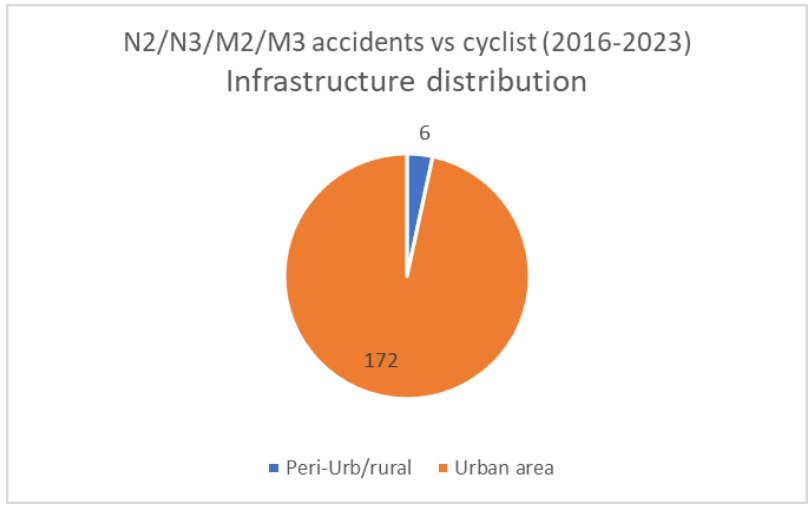


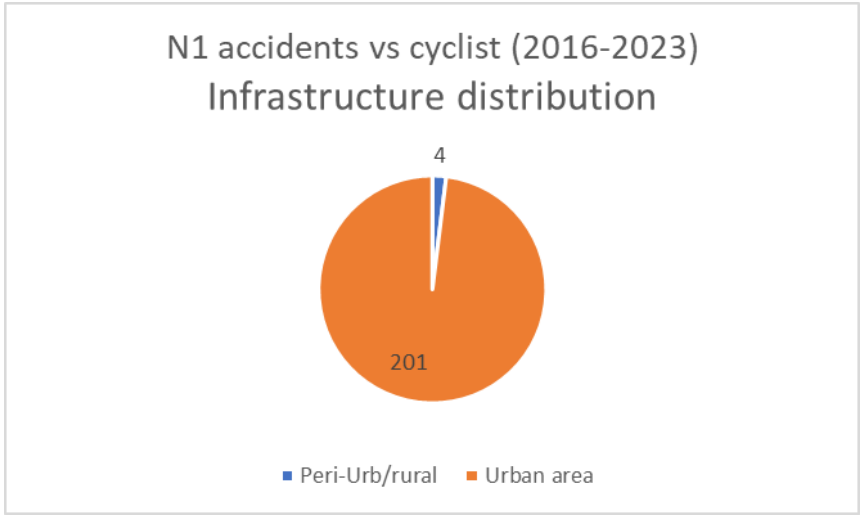


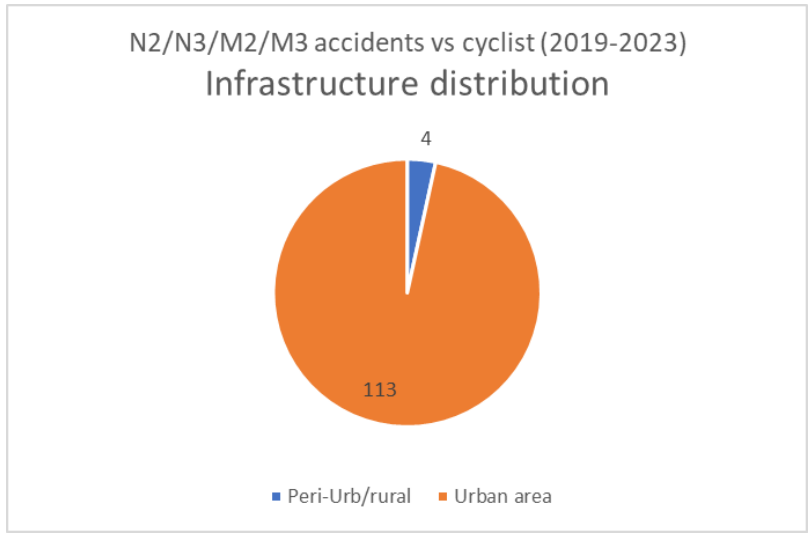
➢ **Same profiles, consistent results**

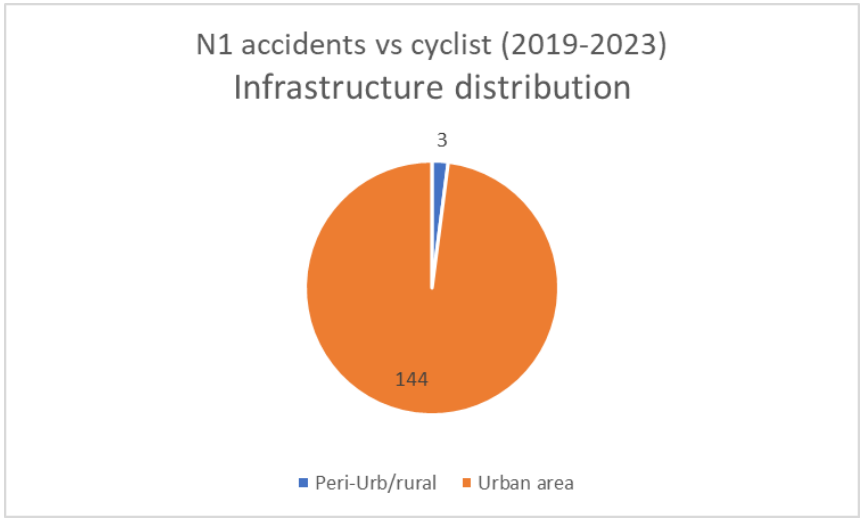
RESULTS (4/7)

French analysis: infrastructure distribution





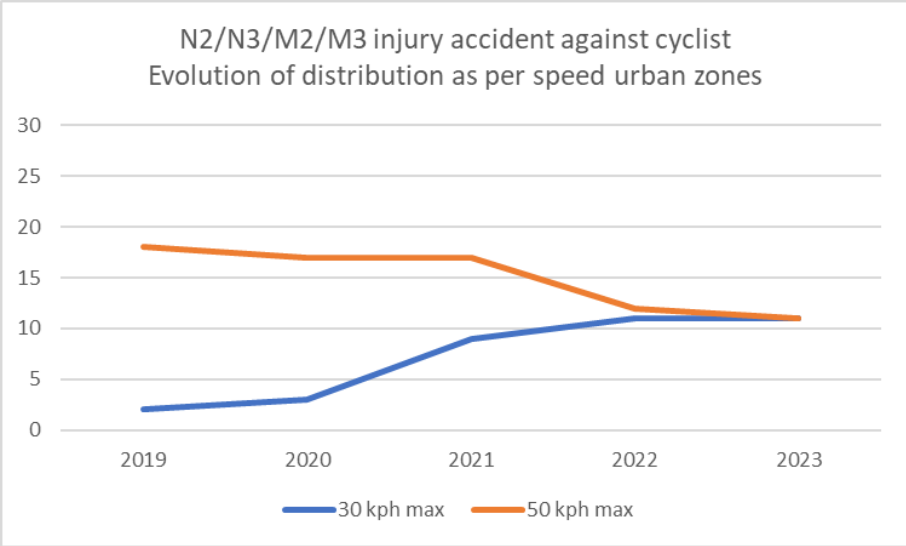


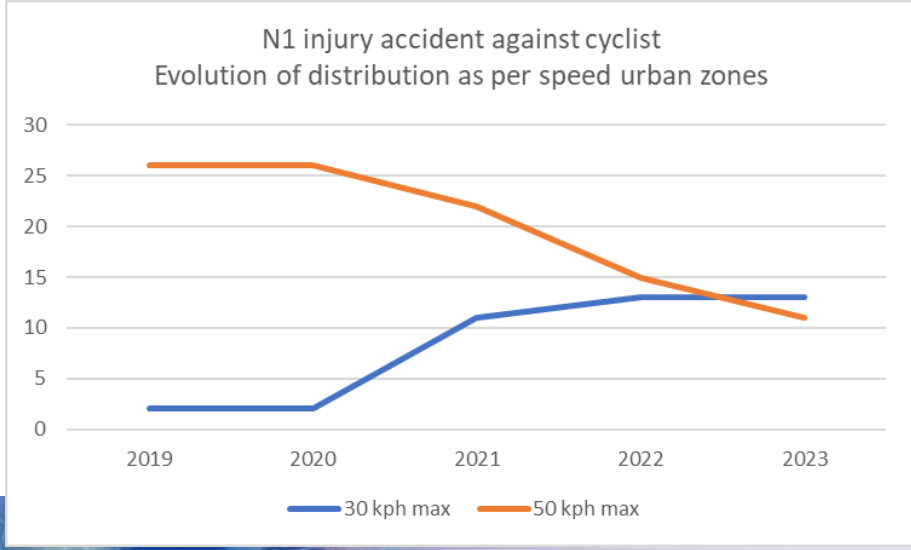


➢ **Urban issue**

RESULTS (5/7)

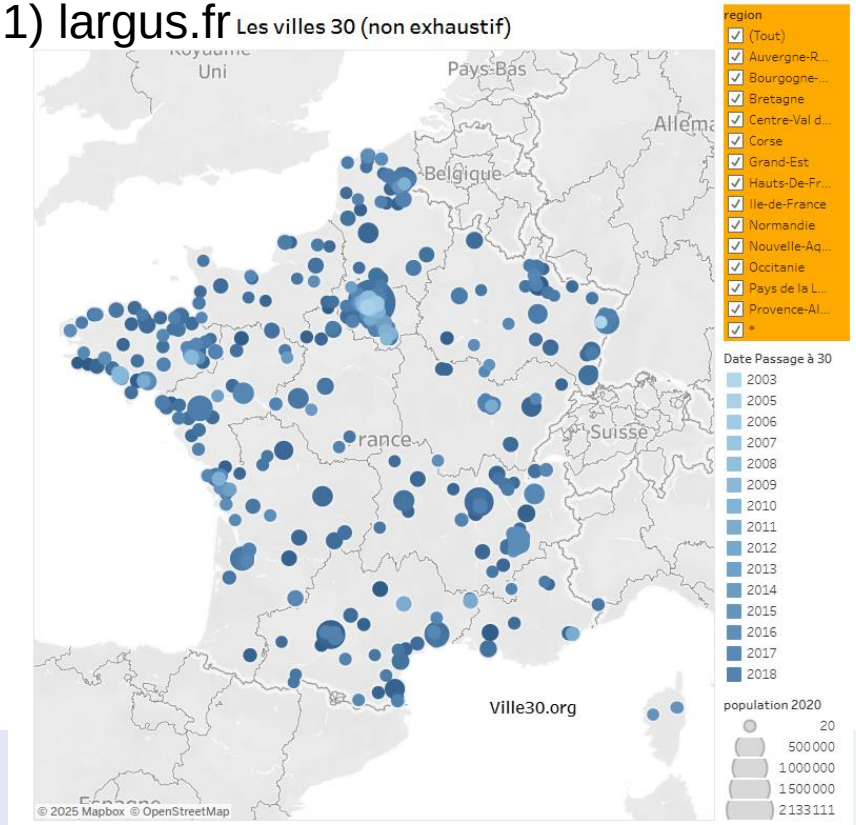
French analysis – Urban area: speed limits of the zones where the injury accidents occur (2019-2023)





- **Urban issue:**
  - More and more zone « 30 kph max » over time since 2019.
    - New criteria for consideration
    - Contribute to reduce the accidents and to mitigate the injuries.
  - This tendency follows the increase of zones « 30 » in the French cities, as per national and European strategy to improve road safety [-1), -2)]

- 1) largus.fr Les villes 30 (non exhaustif)

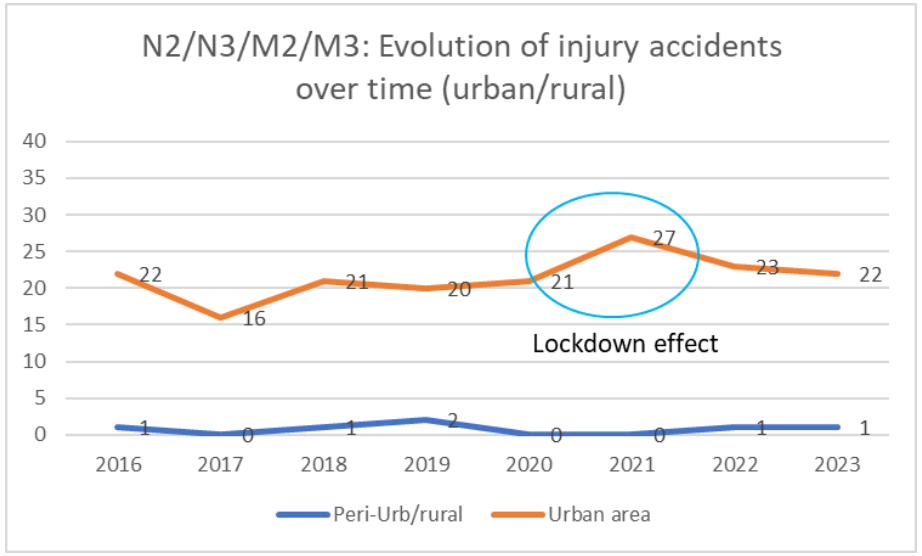


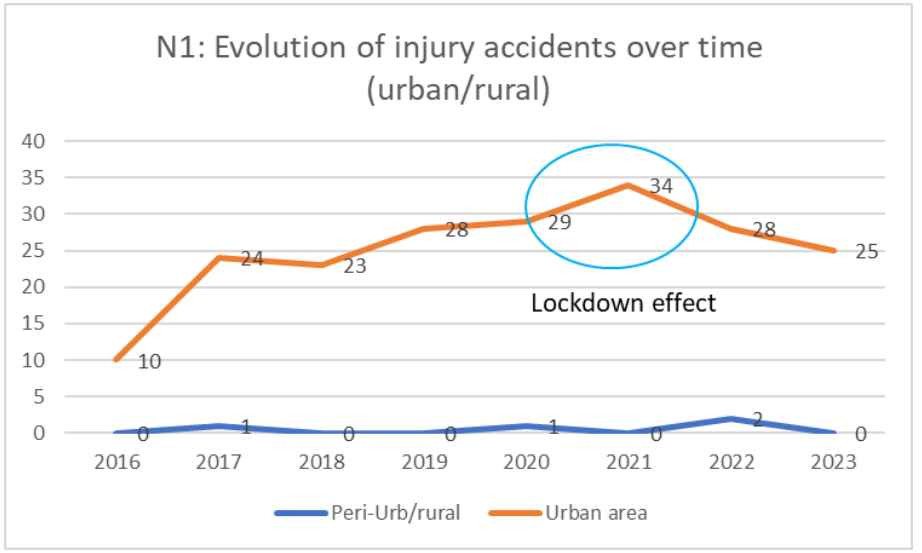
- 2) autojournal.fr

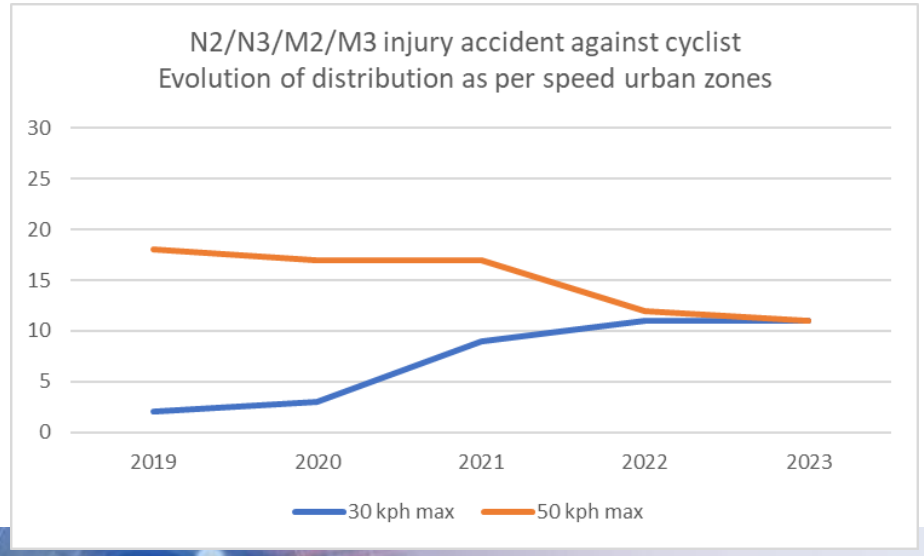
Depuis près de **20 ans**, les villes ont décidé d'adopter la limitation **à 30 km/h** sur certains axes.
Parmi **les plus grandes villes** de France, Lille et Strasbourg l'ont imposé **en 2019** quand Paris a pris cette décision en 2021. Lyon, Toulouse ou Bordeaux l'ont prise **en 2022.**
Un premier **constat**, c'est que le nombre **des accidents** est en baissent dans **ces zones.** A Lyon, on constate une baisse de **35 %** des accidents entre **2019 et 2023.**
Des accidents moins **nombreux** et en plus de ça, ils sont moins graves puisque **la probabilité** de décéder d'une collision avec une voiture à **30 km/h** est de **10 %**, selon *l'Organisation mondiale de la santé.*

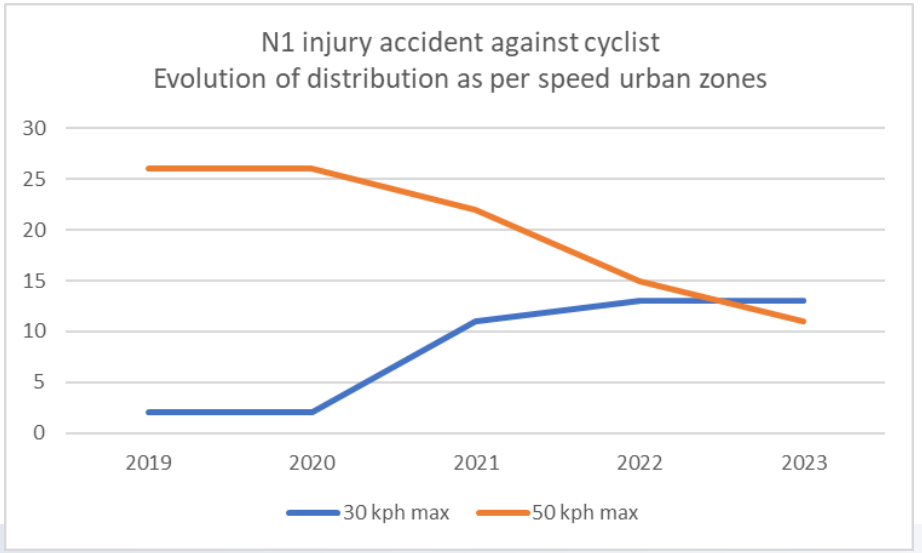
RESULTS (6/7)

French analysis – Injury accidents over years (2016-2023) and focus on urban zones









Lockdown: LCVs & cycles still on the move for deliveries..

Tendency:

- Reduction since 2021
- Reduction fits with zone « 30 » increase

RESULTS (7/7)

French analysis – Evolution of mobility, usage of bicycle

Some extracts from French studies indicating the positive evolution of bike usage:

- **3)** vie-publique.fr, extract:

L'usage du vélo progresse selon les chiffres publiés par le ministère :

- on constate une évolution positive de 48% de trajets vélos en 2023 par rapport à 2019 ;
- 16 millions de vélos ont été achetés depuis 2017, les vélos neufs se vendant davantage que les voitures neuves (2,7 millions contre 1,6 en 2021) ;
- les vélos à assistance électrique permettent de rendre le vélo accessible à de nouvelles personnes.

- **4)** velo-territoirs.org, bike riding increases since 2020:

« *Depuis la sortie du premier confinement au printemps 2020, il y a eu une augmentation notable de l'utilisation du vélo. Par exemple, entre 2019 et 2023, le nombre de passages de vélos a augmenté de 37 %* »

➢ Overall, in spite of the increase of bicycle usage, especially since 2019, casualties related to N1/cyclist accidents (turning right manœuvre) are very very low ….

CONCLUSION

- **Injury accidents** → comparable numbers N1 vs. N2/N3/M2/M3 regarding the specific scenario (UN ECE R151).

- However, in terms of **victims:**
  - Very low number of fatalities for N1/cyclist: almost “0“ (2 over 8 years; 1 over 5 years).
  - Very low number of seriously injured for N1/cyclist: 3 times fewer compared to N2/N3/M2/M3

- **Urban issue**, evolution of accidentology analysis considering **zone “30 kph“ of the cities (since 2019):**
  - Consistent with the national and European strategy to reduce the speed limits in cities.
  - Contribute to reduce accidents and to mitigate injuries (effect observed since 2021).

- **Evolution of bike usage in France**, especially since 2020, mainly in urban area: positive evolution between 37% and 48% as per the localisation. Positive situation to be monitored over the time.

- Like BASt, from our perspective there is **no urgent need to implement UN ECE R151 also for N1 vehicles**, but interest for monitoring the tendency of improving the road safety, including urban zones in this specific scenario.

ANNEX, REFERENCES

1) 30 km/h. La carte de France des villes où la limitation baisse
2) 30 km/h en ville : est-ce vraiment efficace ?
3) Vélo : environ 40% des Français prennent le vélo une fois par mois | vie-publique.fr
4) +37 % de passages de vélos entre 2019 et 2023, un palier d'après-COVID semble atteint