Responsible Social Acceptance
"Protect of yourself to promote AV acceptance"

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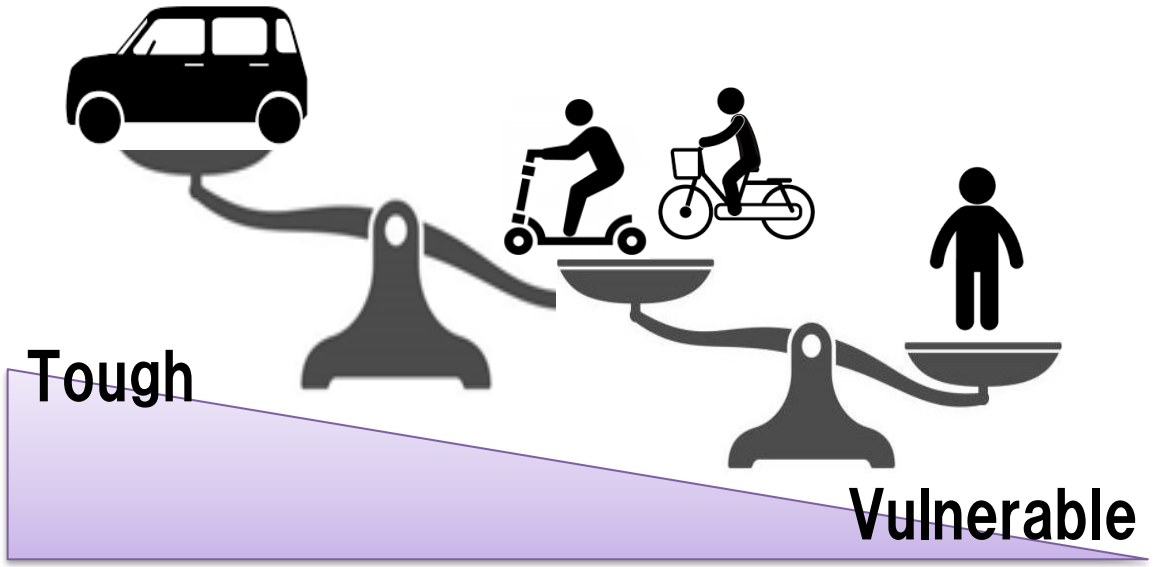
Responsible Social Acceptance

RSA, "Responsible Social Acceptance"

- It is also necessary to do some efforts by society to increase social acceptance. It is a responsibility of our society.⇒ RSA “Responsible Social Acceptance”.
- By utilizing RRI (Responsible Research and Innovation) and RSA, the expected benefits of innovative technologies are realised for society more quickly.



Automobiles V.S. Personal Mobilities (PM) V.S. Pedestrians

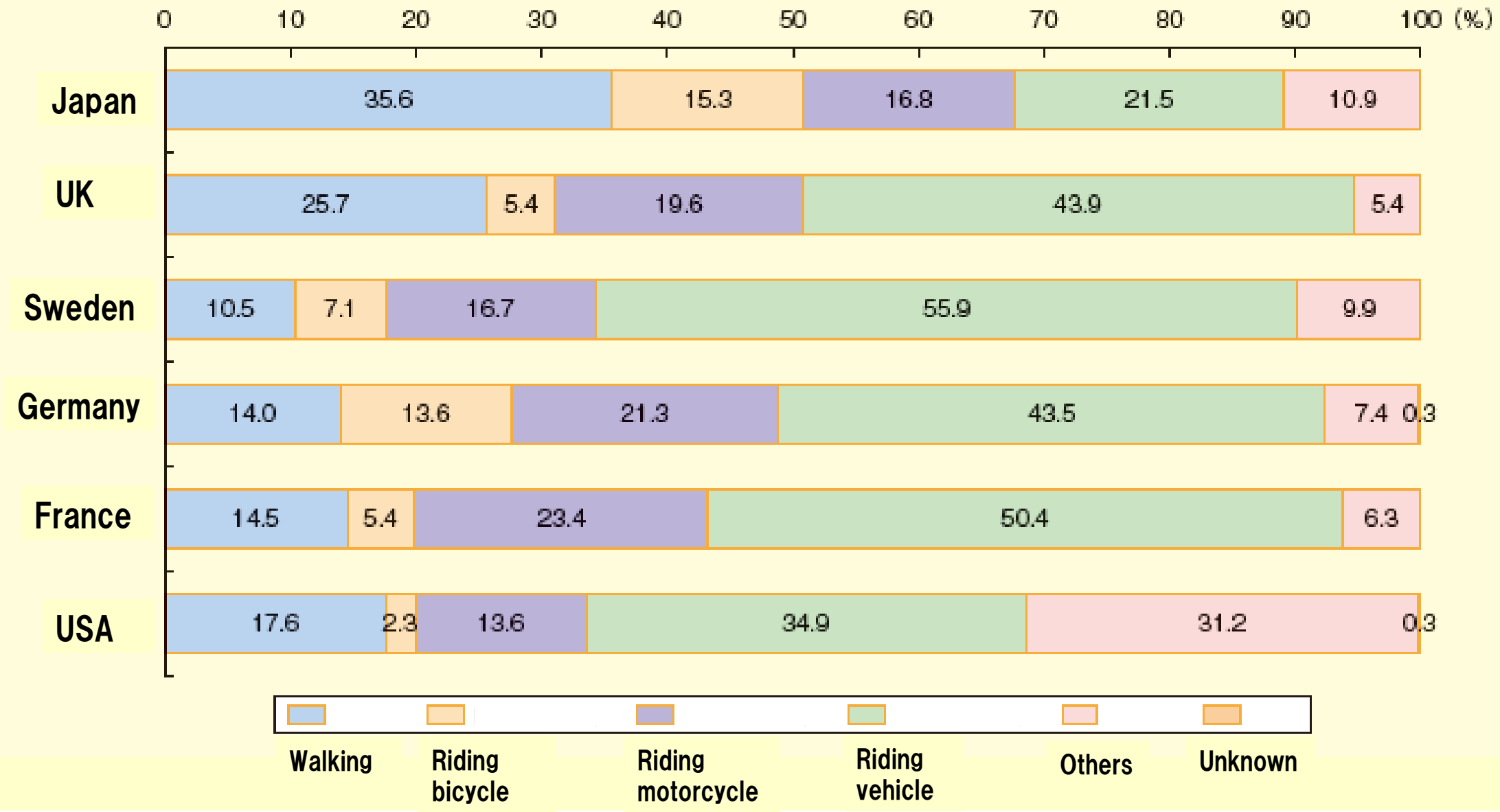
Three categories of traffic participants

“Roads” is limited “Traffic Space” Participants understand and comply with the “Participation Principle”

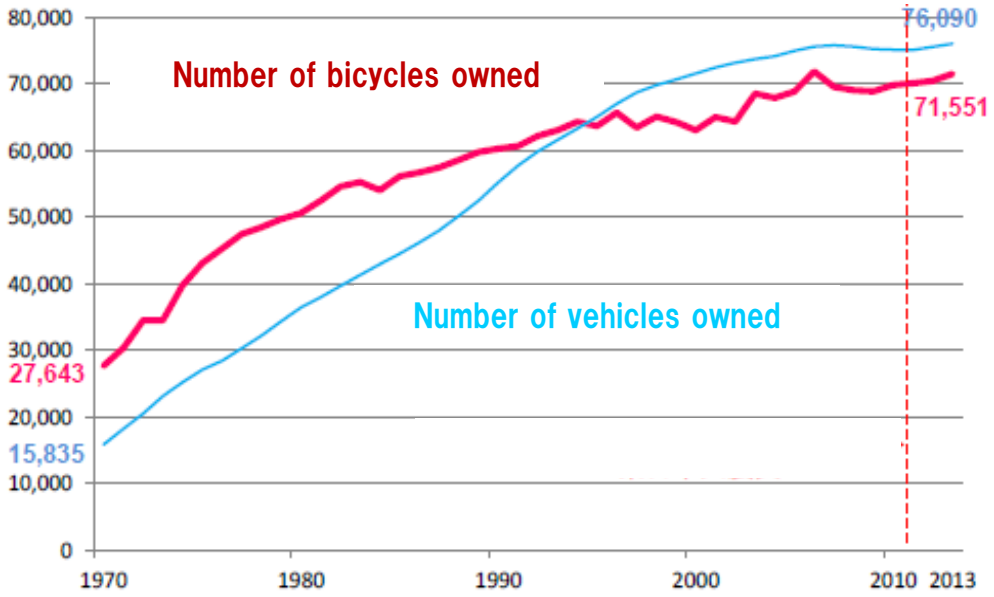
The rapid increase of this new category (Personal Mobility = PM) is causing change in the road traffic safety.
It is necessary to consider “Responsible Social Acceptance” for this change in the road traffic safety.

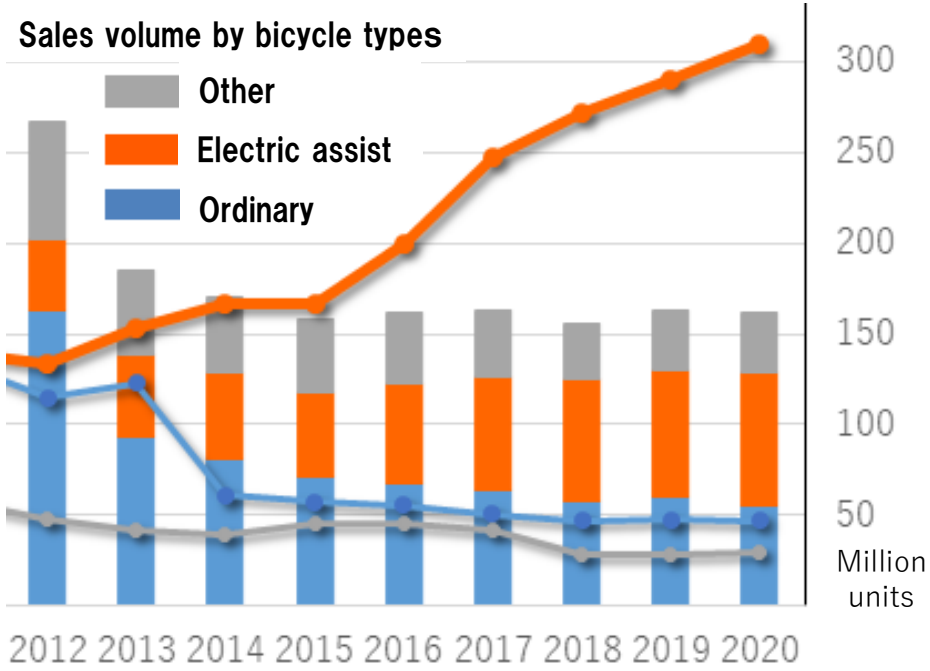
Fatality condition

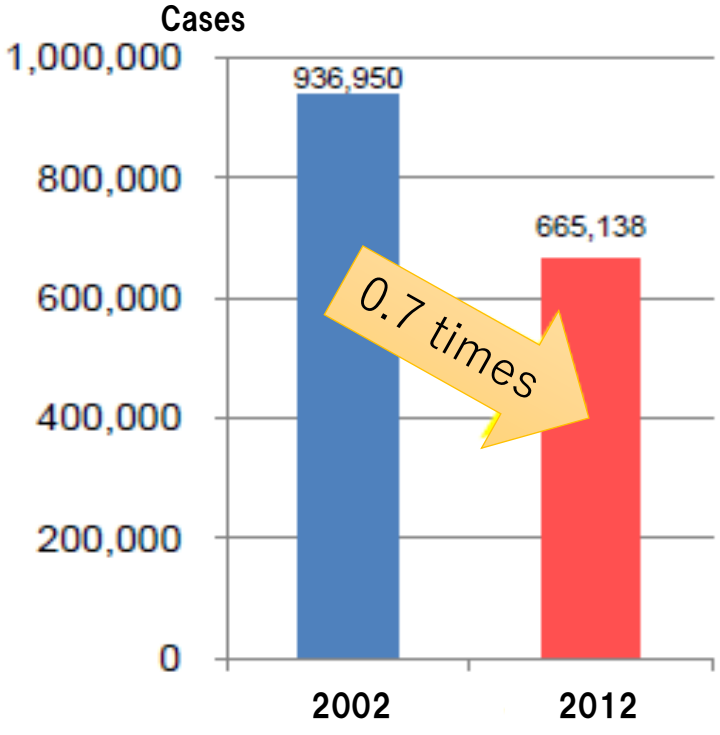
Composition ratio of traffic accident fatalities by condition (2018)



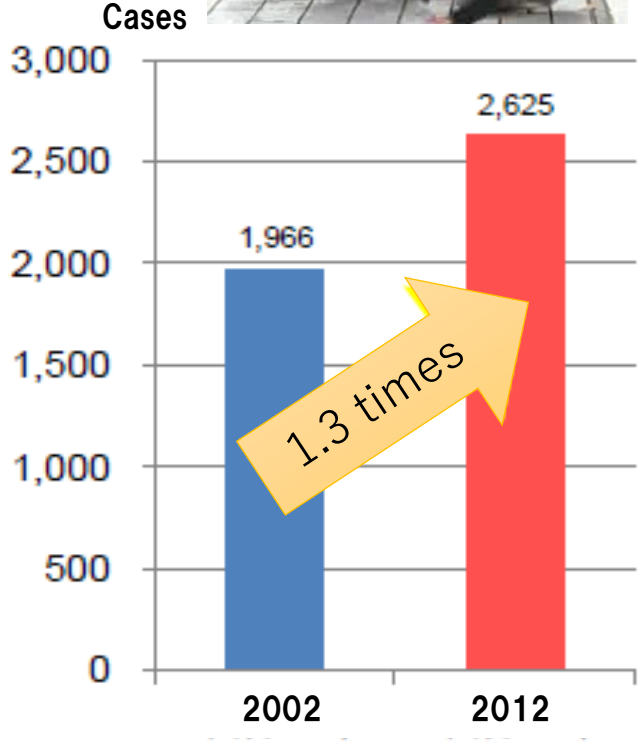
Number of bicycles and accidents





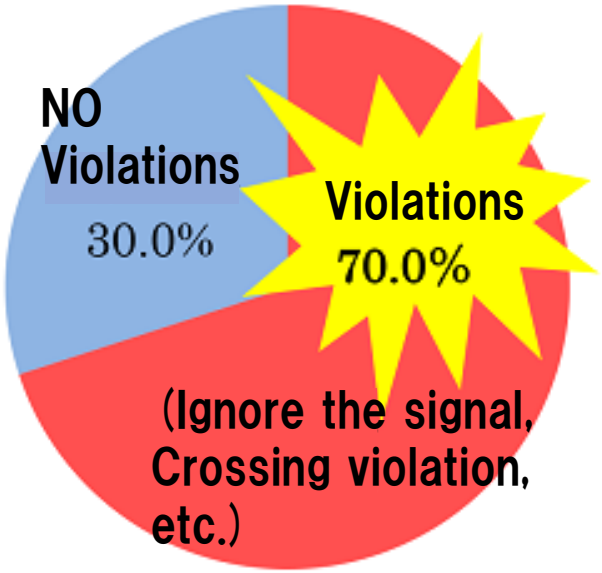


Total number of traffic accidents



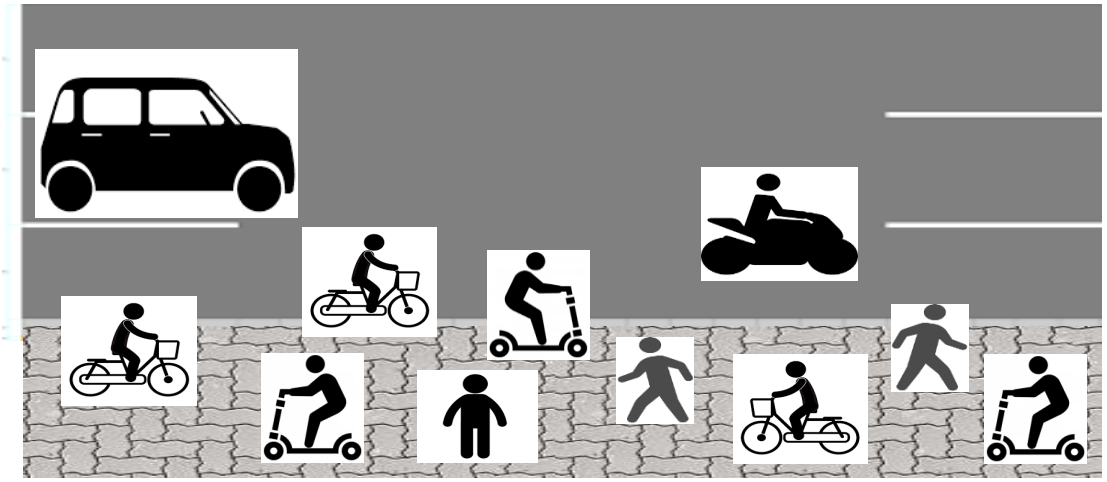
Number of bicycle-pedestrian accidents

Traffic rule violation



Number of Bicycle Traffic Violations interdicted in Japan.
2018 : 17,568
2022 : 24,549 ⇒ 40%up

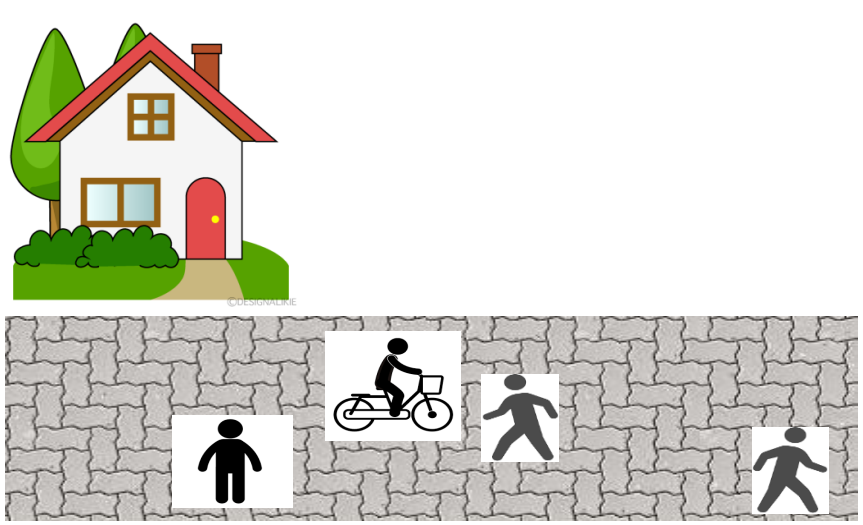
MPD Report 2022 in Tokyo :
70% of pedestrians who died in traffic accidents had traffic violations.

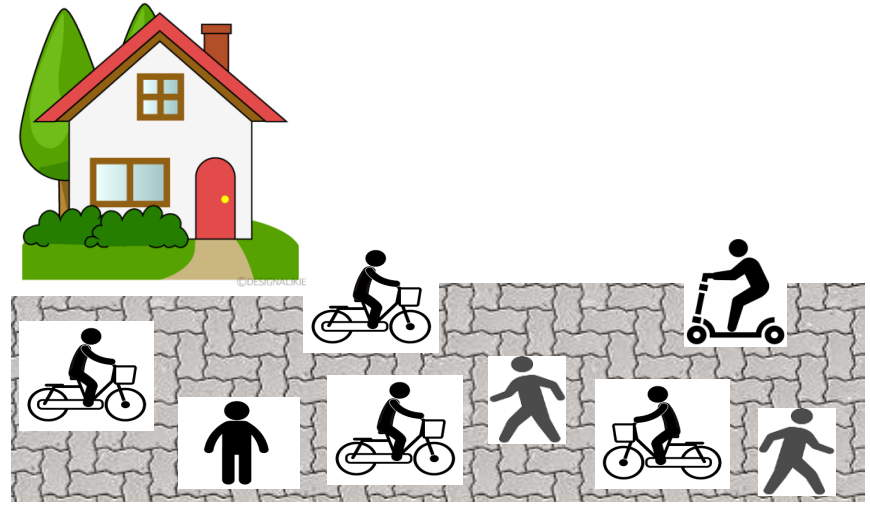


Traffic Space shared by two categories of PM and pedestrians.

Traffic violations among the most vulnerable traffic participant (Pedestrians) and a new category traffic participant (PM) are one of the major factors that worsen the road traffic safety.

Psychological background of traffic rule violation

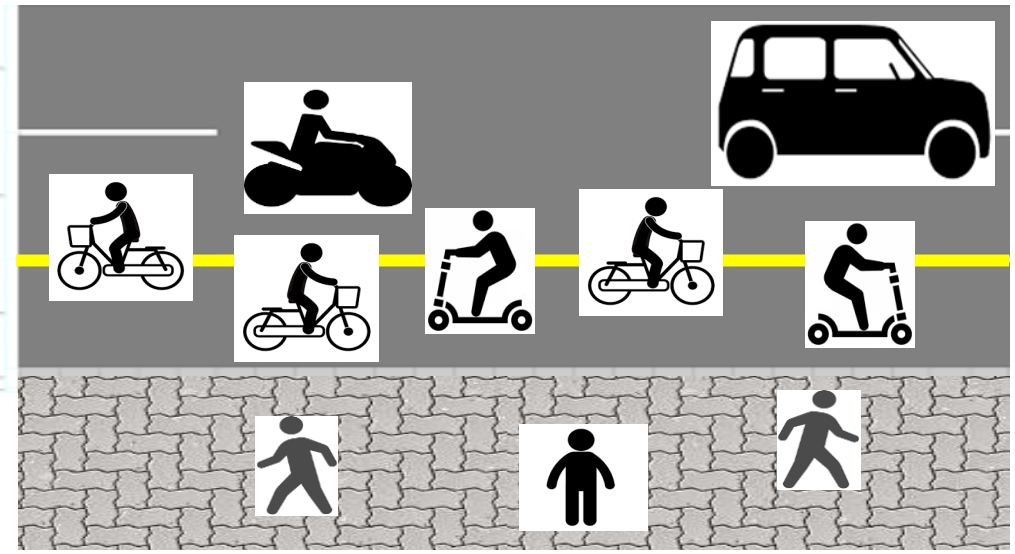


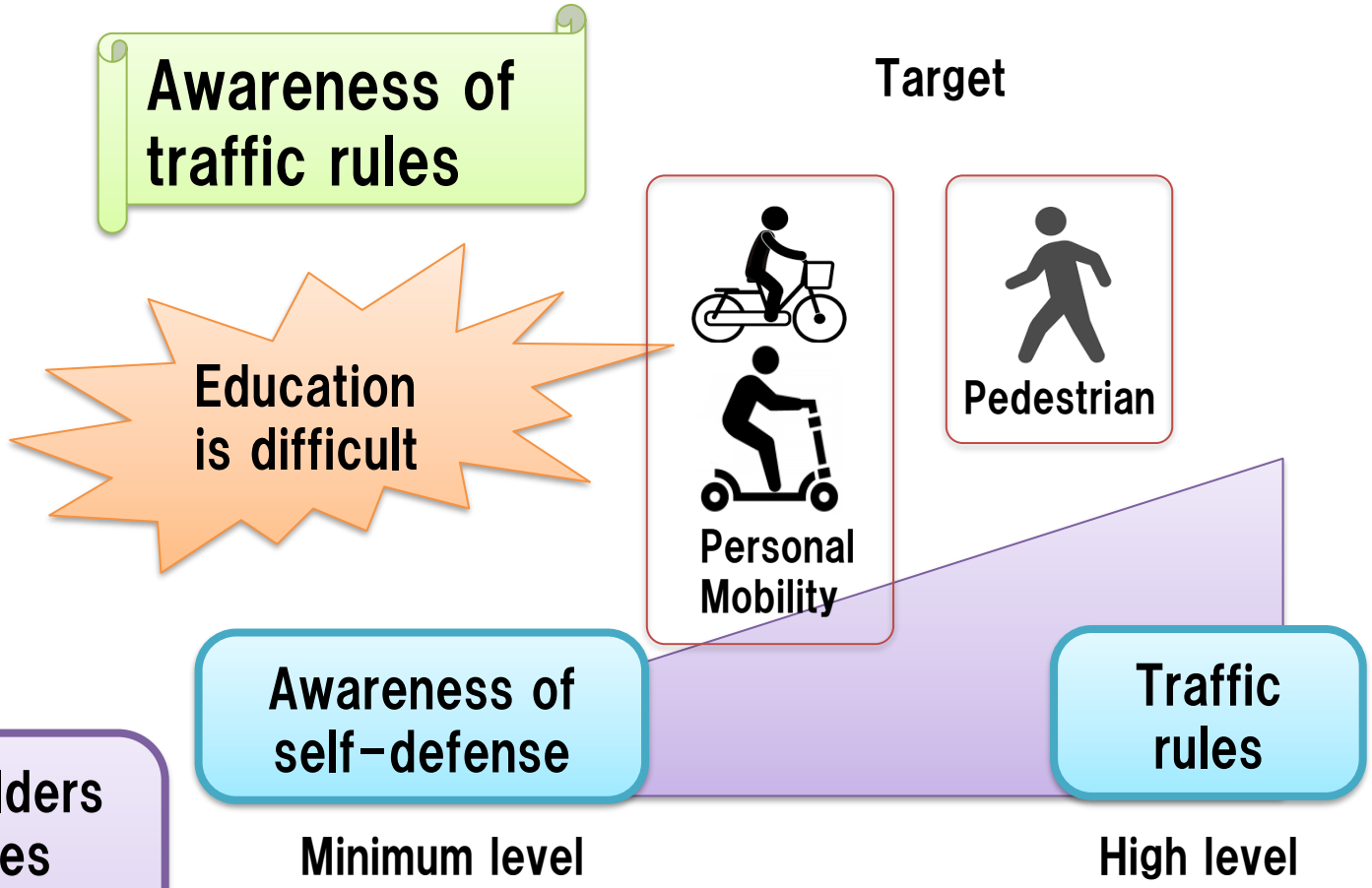


- Considered as a “Traffic Space” was the “Roadway“ not included “Sidewalk”.
- As a result, pedestrians did not pay much attention to traffic rules when using the sidewalk.
- The rapid increase in PM has increased the density of sidewalk usage and accelerating the transformation of sidewalks into “Traffic Spaces”.
- Pedestrians continue to use the sidewalk without being conscious of traffic rules, and PM drive on the sidewalk with pedestrian awareness.

Continuation of the existing mindset leads to traffic violation, which in turn leads to an increase in traffic accidents.

Countermeasures

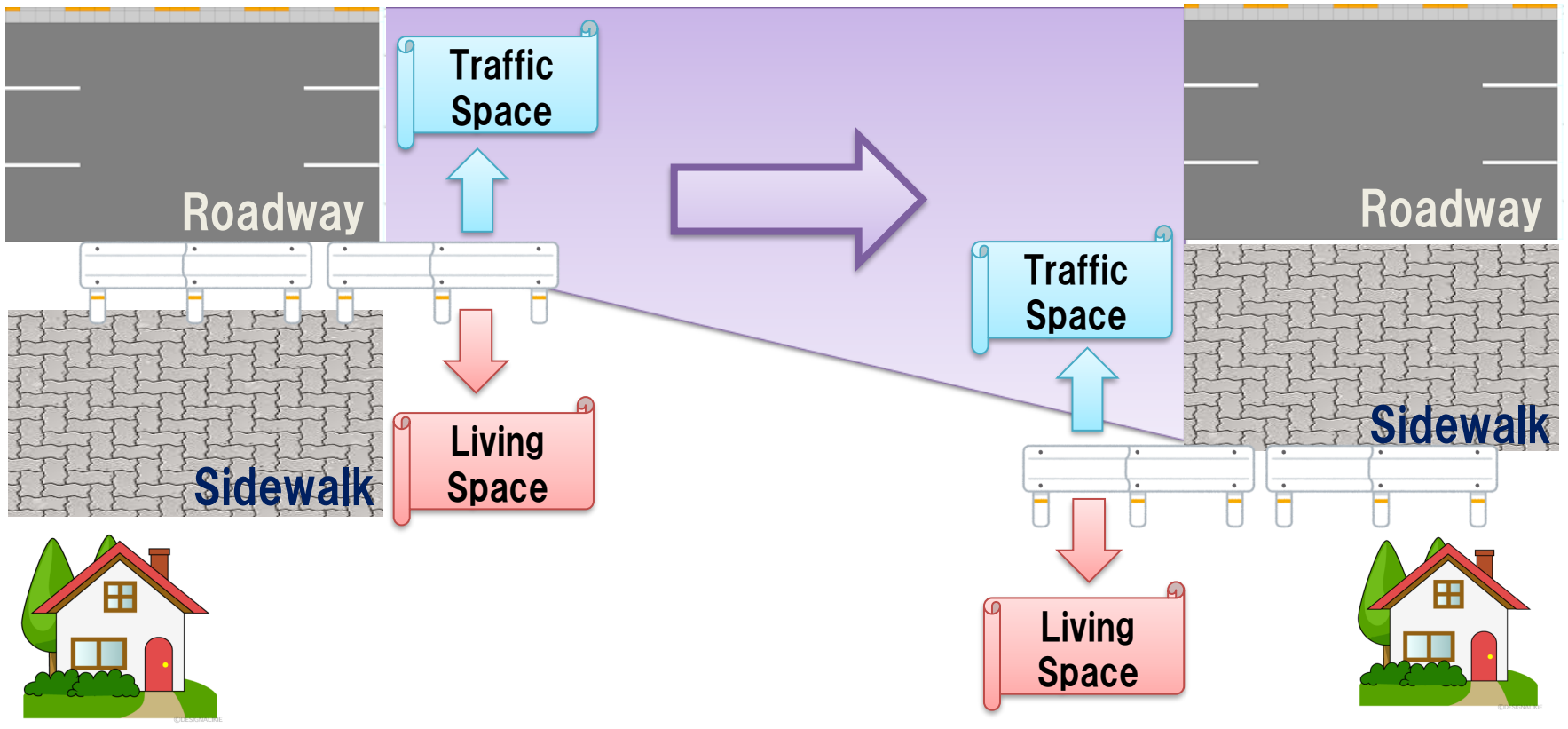




- Traffic participants other than license holders have few opportunities to learn traffic rules and as a result do not follow traffic rules.
- It is desirable to build roads that can be used by the three categories of "vehicles," "personal mobility," and "pedestrians" without having to share them.

Change existing mindsets and force behavioral change.

Responsible Social Acceptance



"Participation Principle"

"Sidewalk is a Traffic Space, so be careful when entering into it."

- There are many traffic participants who do not know/follow traffic rules, making sidewalks dangerous.
- Sidewalks are transforming from “Living Spaces” to “Traffic Spaces”.
- Understand that there are dangers in Traffic Spaces and approach them with caution based on a sense of self-defense.

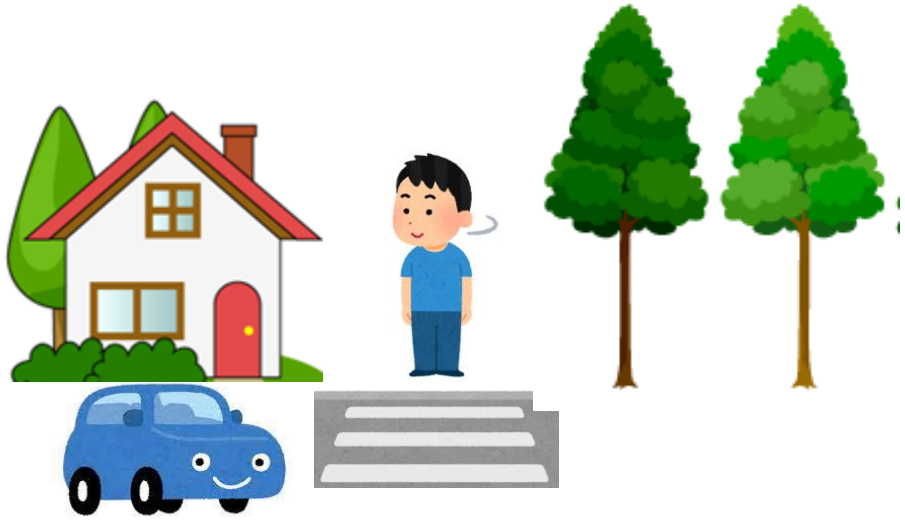
Autonomous driving and evasive behavior

Table 1. Driver-, Vehicle-, and Environment-Related Critical Reasons (NTSB:2015)

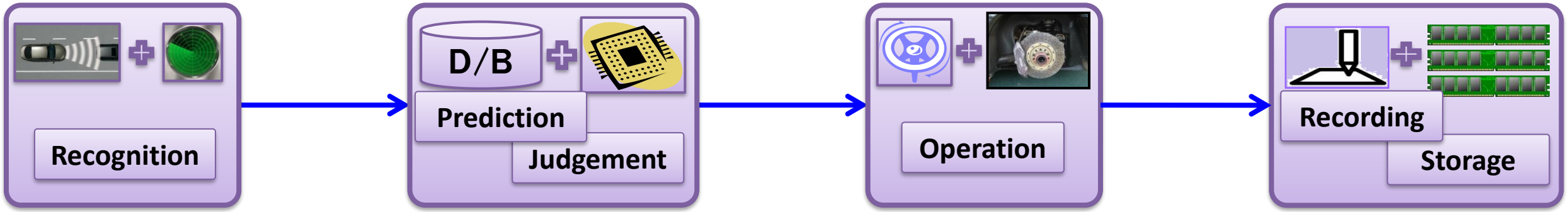
Critical Reason Attributed to	Estimated Percentage*
Drivers	94% ±2.2%
Vehicles	2% ±0.7%
Environment	2% ±1.3%
Unknown Critical Reasons	2% ±1.4%
Total	100%

Table 2. Driver-Related Critical Reasons

Critical Reason	Estimated Percentage (Based on 94% of the NMVCCS crashes
Recognition Error	41% ±2.2%
Decision Error	33% ±3.7%
Performance Error	11% ±2.7%
Non-Performance Error (sleep, etc.)	7% ±1.0%
Other	8% ±1.9%
Total	100%



Autonomous driving (Same as Human driving) accident factors



Limit of Recognition

Objects exceeded the limit of recognitive level

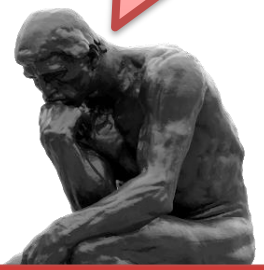
Limit of Judgment

Couldn't find a workaround

Limit of Operation

Couldn't make operation in time to avoid

Based on their technical limitations. There are also complex causes.



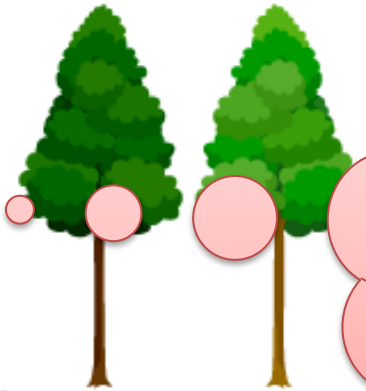
Crash

The most difficult situation to deal with is " (Pedestrian/PM) jumping out from the behind something " that breaks the limits of all functions.

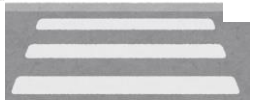
Conclusion

"Participation Principle"

"Sidewalk is a Traffic Space, so be careful when entering into it."



Knowing and following traffic rules will protect myself.



Pedestrian and PM do not jump into the road lead safer driving.

Pedestrian and PM do not jump into the Traffic Space, the introduction of self-driving vehicles will accelerate.

Personal Mobility

Pedestrian

RSA "Traffic participants learn and aware of traffic rules"

Thank you
For your attention.

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