Design of Everyday Things : Parking Problem

When we are parking a vehicle and when we have someone at co-driver seat we sometimes or can I say often times face a problem of getting out of the vehicle if the adjacent cars are not parked in a manner leaving enough space for entrants to get out.

The system as it looks seems to be perfect, defining the boundaries within which we have to park the vehicle preferably by centering the vehicle. Now here there is an implicit assumption that everyone will park in the centre to leave sufficient space to swing the door enough for entrants to get out of the vehicle. Now, everyone can't be perfect and vehicle is not parked as intended. This requires adjusting your vehicle so that everyone gets out without any hassle, now that requires some skill and at times you miss to be on your seat in an auditorium before it gets dark out there ☺

Let's see what is the contradiction here & apply TRIZ inventive principles to generate ideas to solve parking problem

What we are trying to improve is 'how driver can park perfectly so that she leaves sufficient space for doors to open for passengers to get out of the vehicle.

Now if we check the TRIZ contradiction (new) matrix it identifies driver's ability to park the car in the centre as the parameter we want to improve which it categorises as 'ease of operation' which is defined as **'the extent to which a user is able to learn how to operate & control a system or object' now** if this doesn't happen then the space between adjacent vehicle gets reduced on either on one side or at times both the sides if the adjacent vehicle on both the sides have not left enough space for car entrants to get out.(Parameter 4 : Length of Stationary Object)

We then go ahead & form contradiction as

Improving Parameter : Ease of Operation (Parameter : 34, Trainability, Operability, Controllability)
Worsening Parameter : Length of Stationary Object (Parameter 4 : Length of Stationary Object)

Inventive Principles[1] to solve this contradictions are :

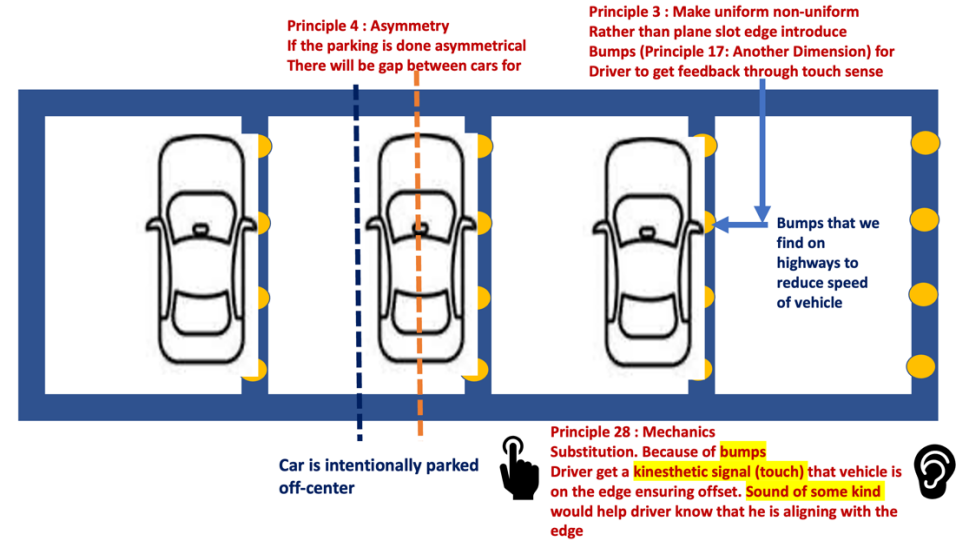
17 Another Dimension
01 Segmentation
13 The Other Way Round
04 Asymmetrical
28 Mechanics Substitution
03 Local Quality

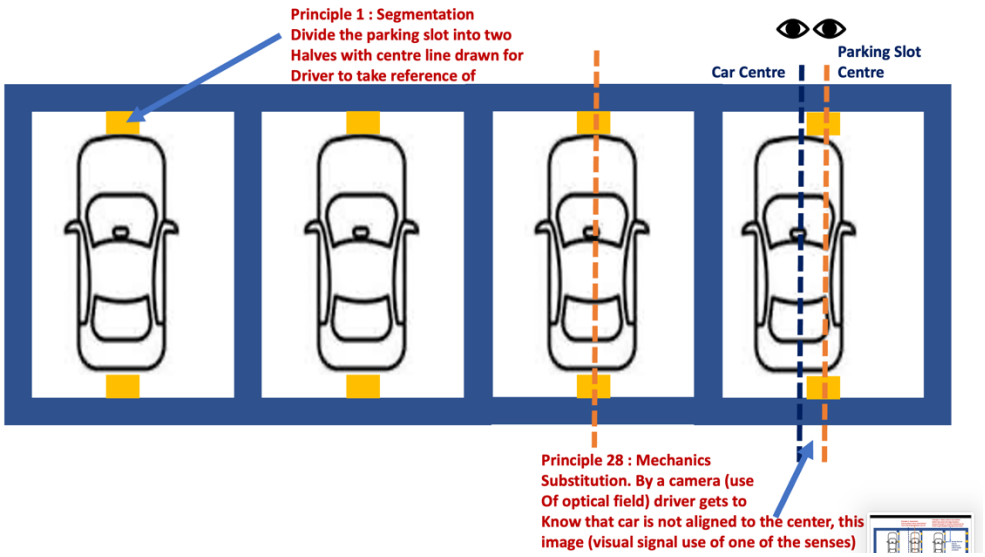
Segment (Principle 1) the parking lot is divided into two halves by drawing a centreline for driver to take reference & park in the centre. By use of a car camera (optical field) driver gets

to know that car is not aligned to the centre, this is through an image (visual signal use of one of the senses)

Park the car asymmetrical (principle 4) touching one side of the line, now we are good at manoeuvring the vehicle so as not to touch the side objects. Now we need to make use of another sense, touch by introducing small bumps (principle 3 making uniform non-uniform and principle 17 : going into another plane) on the edges so that driver can sense it through vehicle tires (principle 28 : mechanics substitution : use of touch sense). Better still the edge creates some kind of sound through bumps (principle 28 : mechanics substitution : use of acoustic) for driver to know that the vehicle tires are touching the mounted bumps on the line and the car is parked off-centre as intended and every driver does this to leave sufficient space for door opening for entrants to get out without hassle

Let me know what more ideas you can think of….





References :

1. Matrix 2010, Darrell L Mann, IFR Press, UK

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