

A broader vision for transport optimisation

Towards an efficient and fair allocation of urban road space

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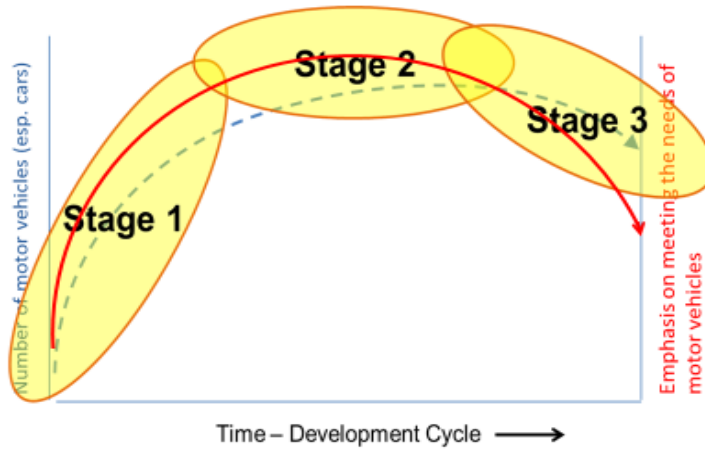
Design and optimization of transport systems in the context of urbanization
Newton Fund Researcher Links Workshop
Shanghai, 10-12 July 2017

‘In-your-face’ allocation of road space



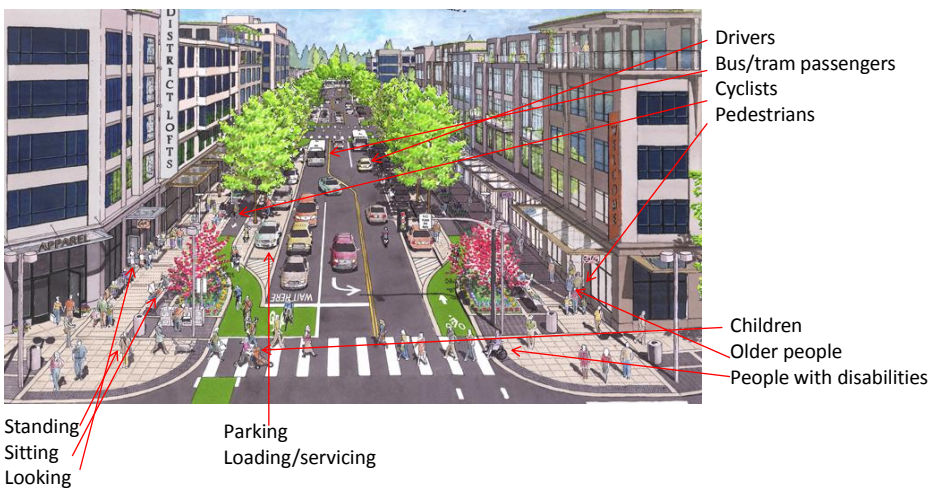
The banana chart

Three stages of city evolution



The first rule of road space allocation in Stage 3 is

Allocate space considering the needs of all road users



The second rule of road space allocation in Stage 3 is:

Stop the war on pedestrians and cyclists



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Optimizing walkability

What would you do?

Traffic density: Medium

No central reservation

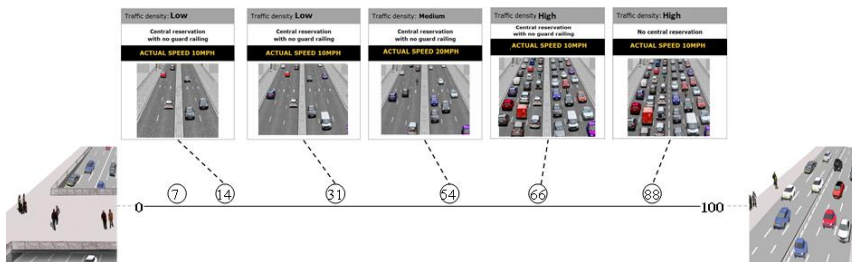
ACTUAL SPEED 30MPH

Option A: Cross at this point (not at pedestrian crossing)

Option B: Use covered over road (Adds 9 minutes to your journey)

Option C: Don't make this trip

How bad is a road design for pedestrians?



The third rule of road space allocation in Stage 3 is:

Recognise that roads are not only links to go from A to B

They are also the A's and B's



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Optimizing 'place'

J. Gehl, *Life Between Buildings* (1987) and *Streets for People* (2010)



250m
 Speed: 60-70 km/h
 Noise: >70 dB(A)

Maximum distance	
To see events	100 m
To see facial expressions	25m
To hold a conversation	3m
To smell something	3m
To hear something	7m
To reach a bench to sit on	100m
Maximum road width	
To accommodate normal pedestrian flow	7m
To have a clear view of what's on both sides	3m
To create a pleasant contrast with squares	3m
Maximum speed	
To protect pedestrians	15km/h
Maximum noise	
To hold a conversation	60 db(A)
To hear all the sounds part of a social situation (voices, footsteps, music...)	45 dB(A)

Photo: www.siemens.com/press

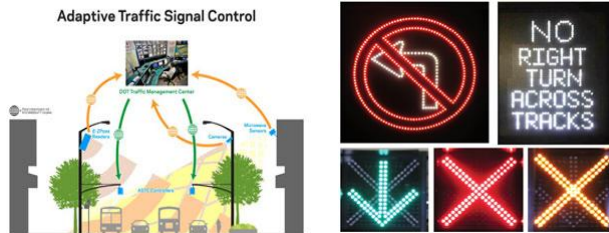
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Opportunities to increase efficiency of road space

New materials and technologies to reduce disruption



New technologies and operation methods to create flexible road designs



Credits (clockwise): Delft University of Technology, BKP Berolina, Transportation Control Systems, NYC 'Midtown in Motion' system

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Efficiency is not enough

We still need to decide what we want:

More cars on pavements

OR

More cats on pavements

?



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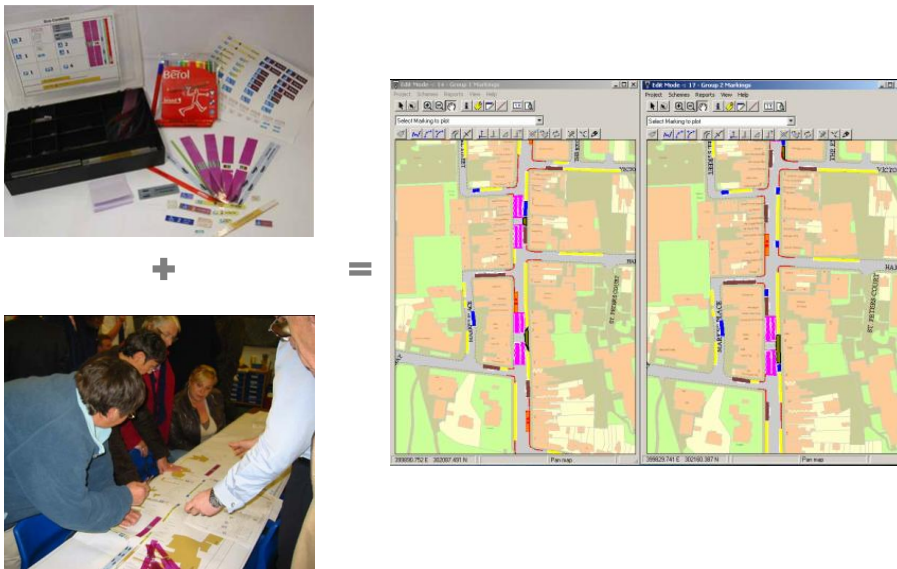
Link & Place

A 2-dimensional road classification method



Baartman, J. (2016) Street types for London, based on EU ARTISTS project @ UCL (et al) and Jones, P. et al (2007) *Link & Place* 10

The politics of road space allocation



DISTILLATE project @ UCL (et al). Also in Jones, P., and Thoreau, R. (2007) Involving the public in redesigning urban street layouts 11

The economics of road space allocation

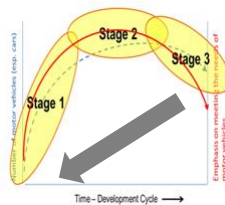
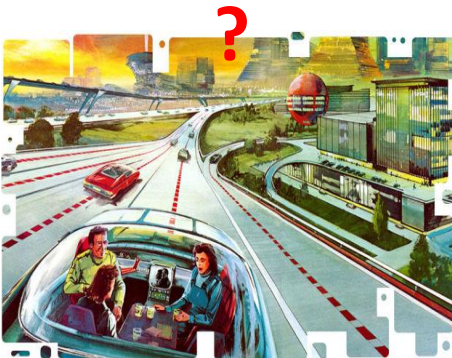
If we value the time saved travelling along roads

...why don't we value the time spent on roads?



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Towards a Stage 4 of city evolution



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Thank you for your attention!

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**UCL Centre for Transport Studies
50 years
14th July 2017**