

Parking organisation and sustainability

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Source: <http://a-glaswegian.blogspot.com>

Current situation in Bangkok



Source: <http://drivedd.blogspot.com>

Figure 1. *The push-and-pull approach towards less car traffic in urban areas*

Measures with push-effects

Area-wide parking management, parking space restrictions in zoning ordinances, car limited zones, permanent or time-of-day car bans, congestion management, speed reductions, road pricing...

Measures with pull-effects

Priority for buses and trams, high service frequency, passenger friendly stops and surroundings, more comfort, park-and-ride, bike-and-ride..., area-wide cycle-networks, attractive pedestrian connections...



Measures with push- and pull-effects

Redistribution of carriageway space to provide cycle lanes, broader sidewalks, planting strips, bus lanes..., redistribution of time-cycles at traffic lights in favour of public transport and non-motorized modes, public-awareness-concepts, citizens' participation and marketing, enforcement and penalizing...

Source: Müller et al. (1992)

Effect of parking scheme

- Munich 1982: Reduce car solo driver from 44% to 32%
- Salzburg 1989: Car traffic reduce by 5.5%
- Kaiserslautern 1992: Reduce car solo driver from 62% to 58%
- Windsor 2002: shifting long term parking away from city centre
- Bangkok ?



A faded, light-colored background image of a person wearing a large, white, textured costume that resembles a giant insect or a stylized animal. The person is standing with their arms slightly out to the sides. The image is semi-transparent and serves as a background for the text.

**car car car car car car car car
car car car car car car car car
car car car car car car car car
car car car car car car car car
car car car car car car car car
car car car car car car car car**

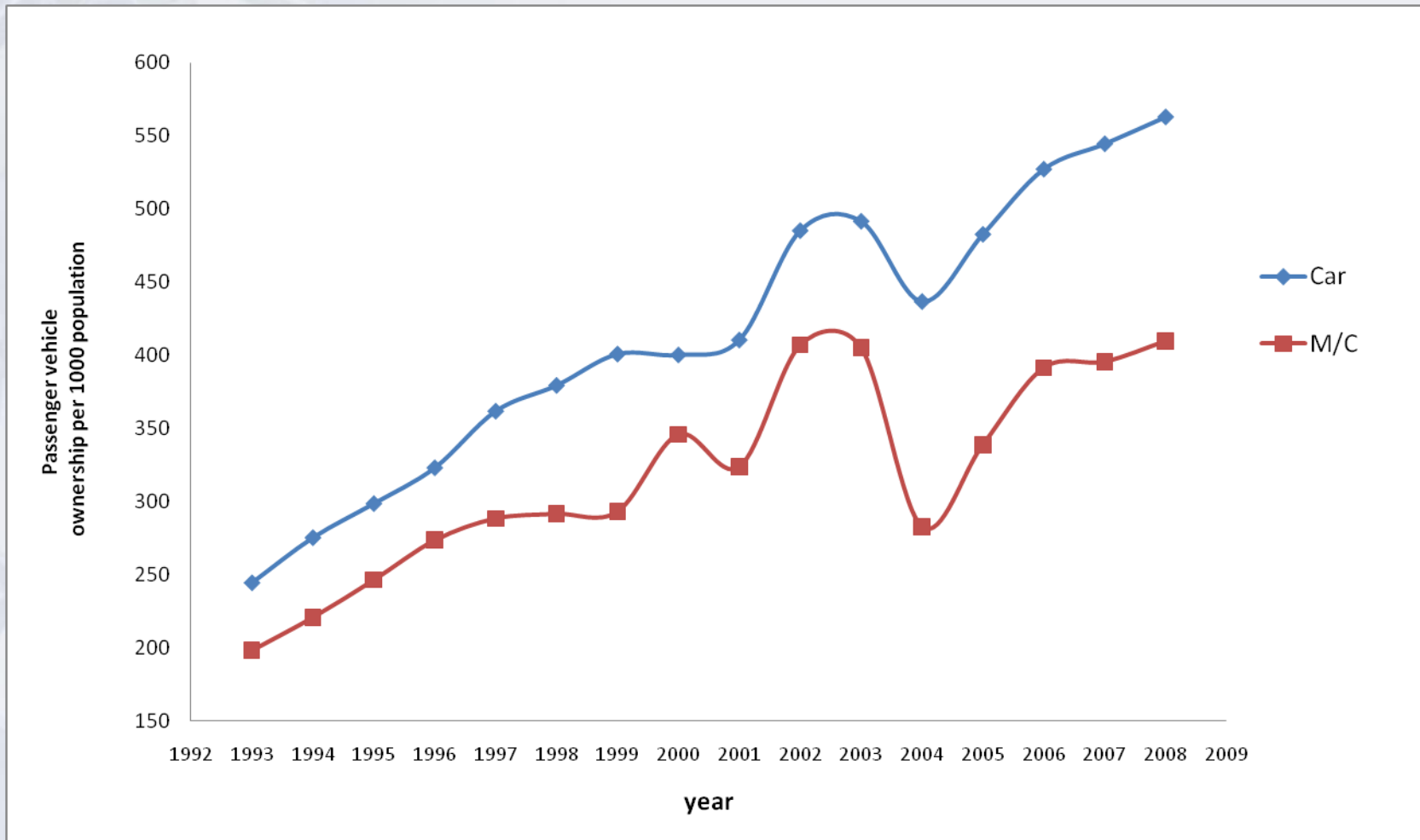
**Car parks,
as a space,
offer very little poetry**

Source: <http://a-glaswegian.blogspot.com>

- Bad condition of parking space / use

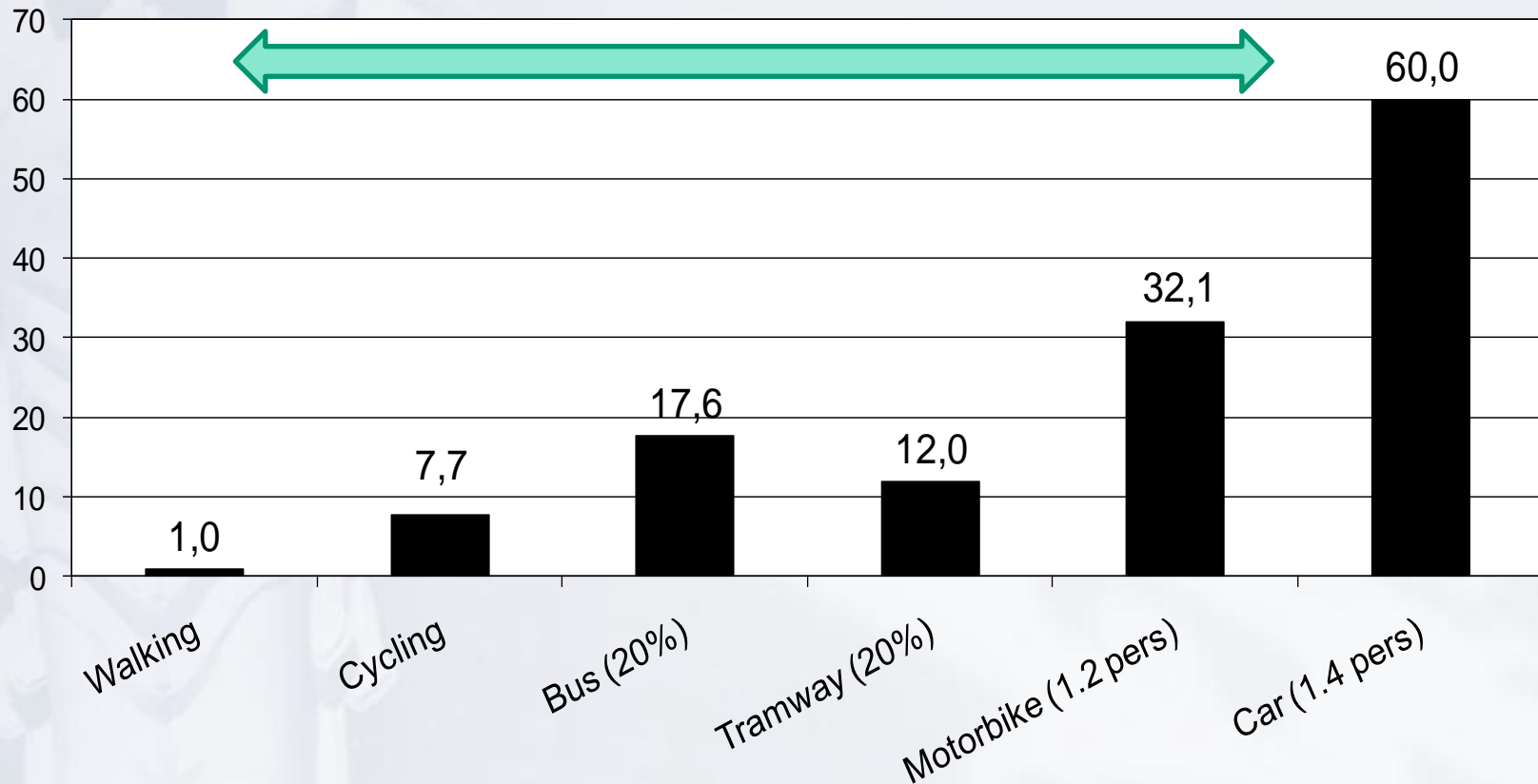


Rise in Bangkok motorisation



Comparison space consumptions

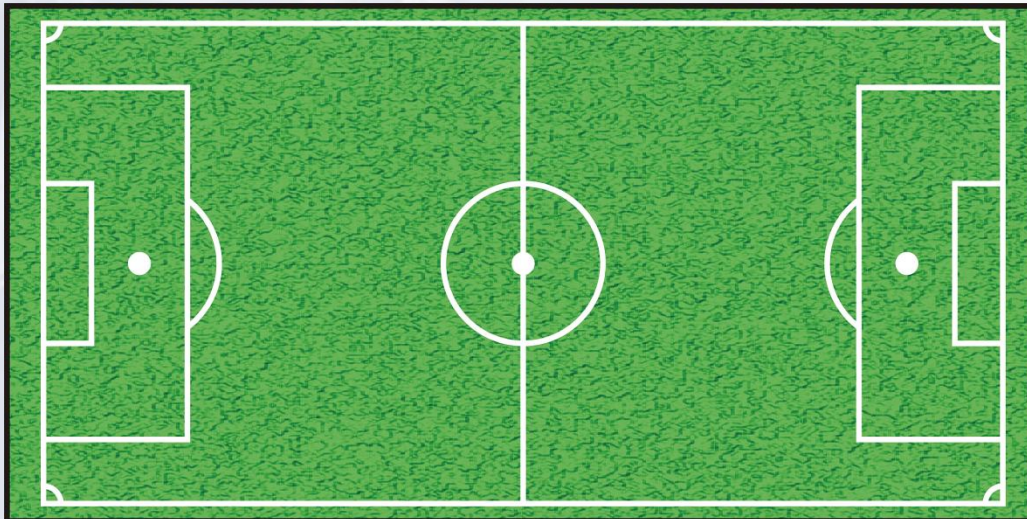
Area consumption [m²/person]



Source: Pfaffenbichler, P. (2001). "Verkehrsmittel und Strukturen." Wissenschaft & Umwelt Interdisziplinär(3), 35-42., own additional calculations

Urban space lost

- Average growth of private vehicle in Bangkok 1999-2009:
 - Motorcycle – 73,000 per year
 - Car – 112,000 per year
- Equivalent to loss of urban space for parking 1.5 km² per year



X 200

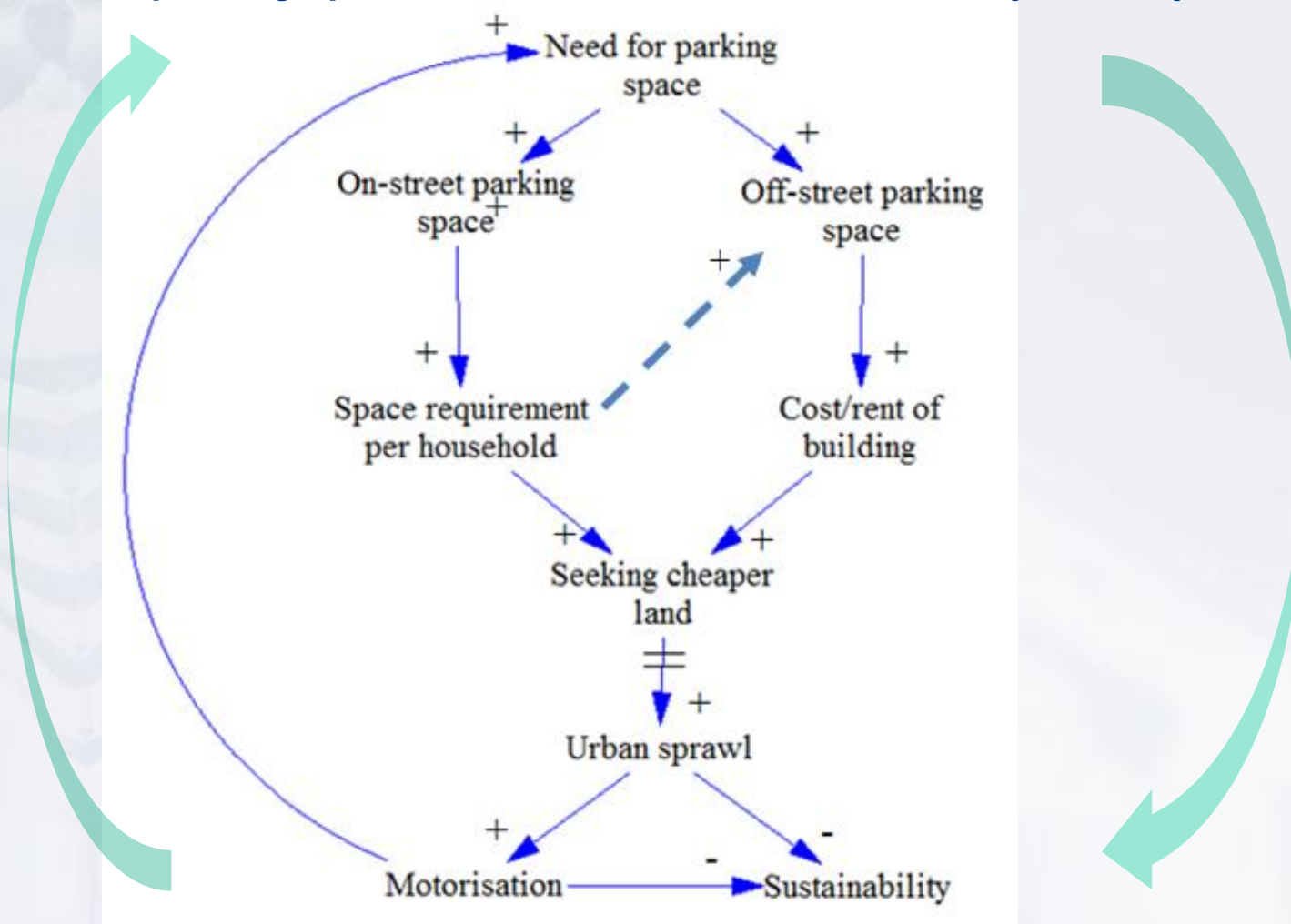


PARK(ing) Day NYC 2007

Economic and social benefit from a car-free street



Causal Loop Diagramming shows Overall system relationships between provision of parking space, motorisation and sustainability of a city



Minimum parking space requirement



- Ensure sufficient parking for private vehicle usage
- Estimated value based on the past
 - Type of building
 - Activity
 - Peak demand
- Free or low cost parking

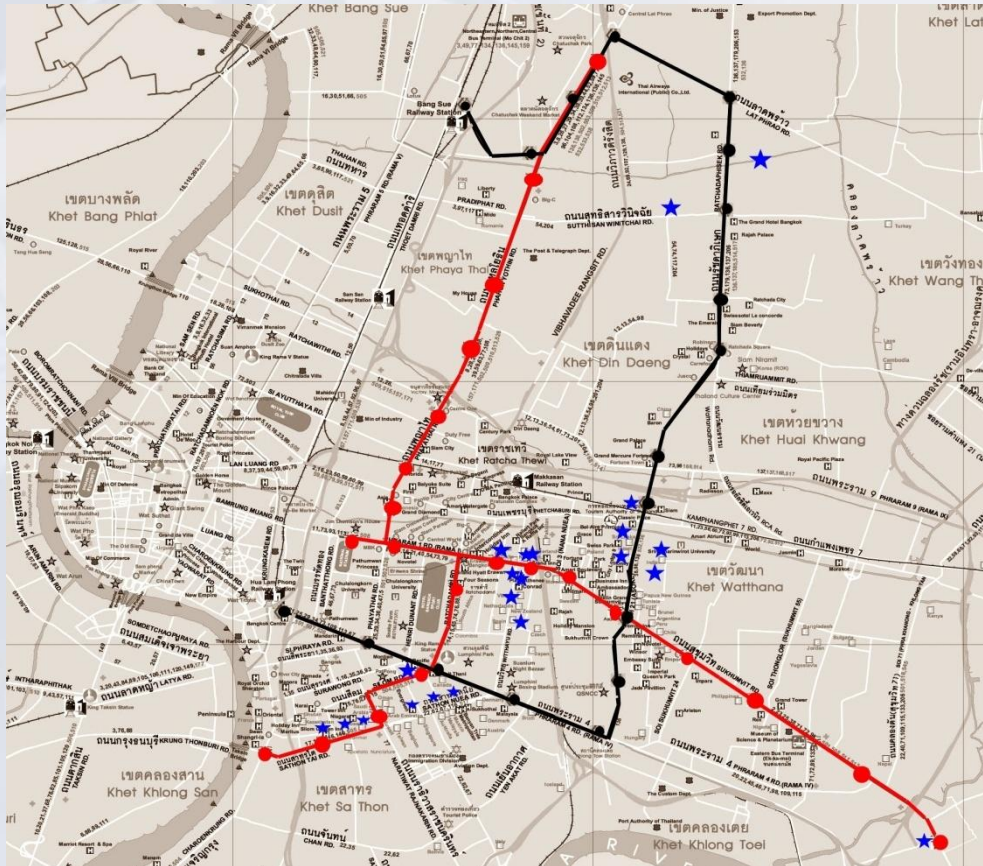
Bangkok's regulation is 1974 with
1994 addendum

Effect of minimum parking space requirement: Hong Kong



- The 2nd Parking Demand study report (2002)
 - 82,000 night time parking spaces surplus.
 - 98,200 day-time parking space surplus
 - Recommendations:
 - Abolished zoning base parking space requirement
 - Global zoning base rate, using Demand and Accessibility Adjustments
- But still Minimum parking space requirement !**

Effect of minimum parking space requirement: Bangkok



- Desktop Analysis based on data of 21 offices located within Bangkok CBD

- Minimum parking space requirement 1 space : 60 sq m

Key Finding:

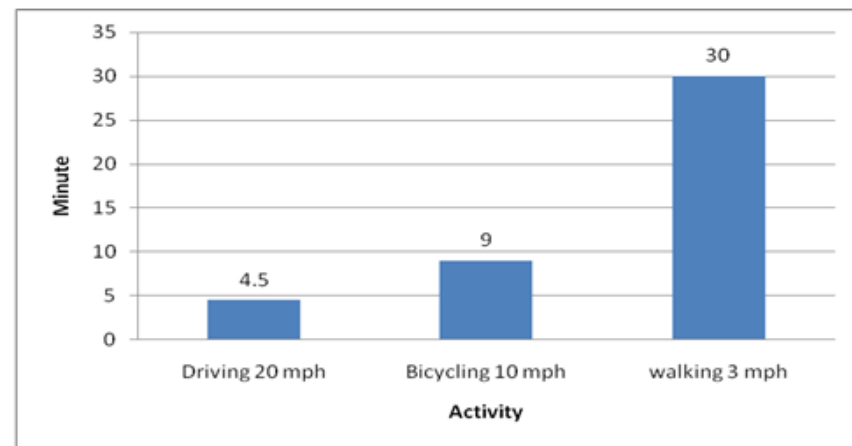
- Average of 58 spaces exceeded per building
- 17% above minimum requirement

Equi-distance parking concept

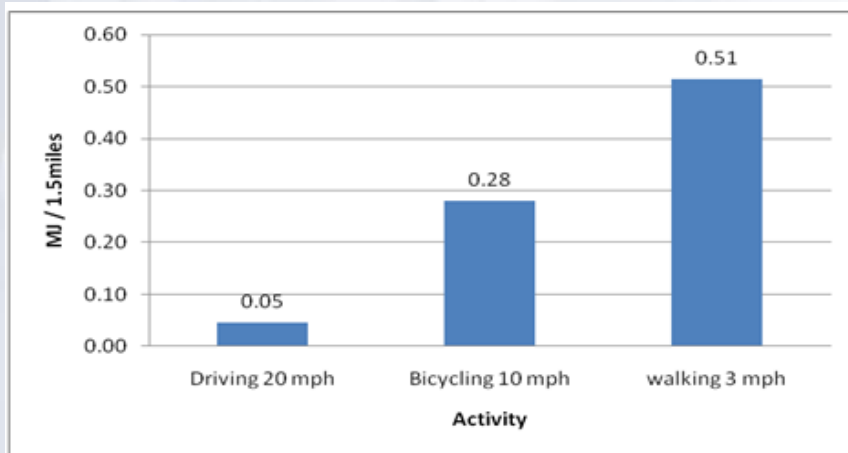
- Energy consumption
- Structure influence behaviour
- Existing parking organisation
- Equi-distance parking

Energy Consumption

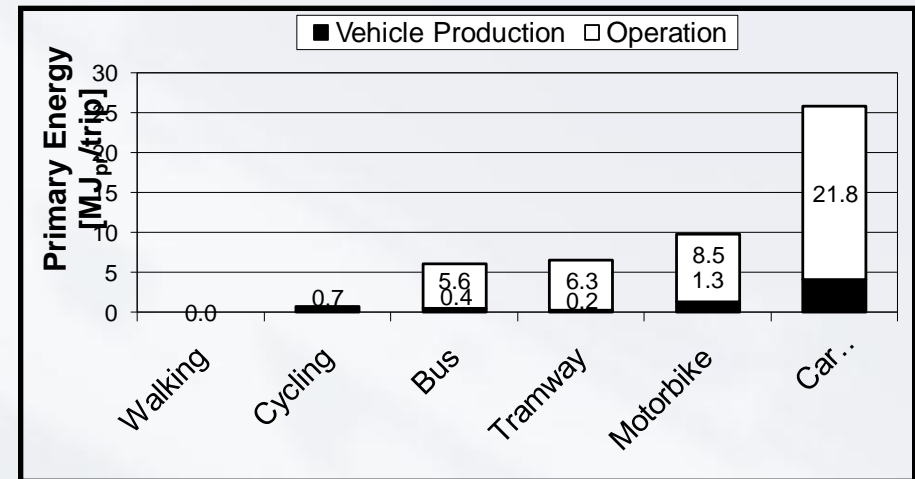
Time



Internal energy

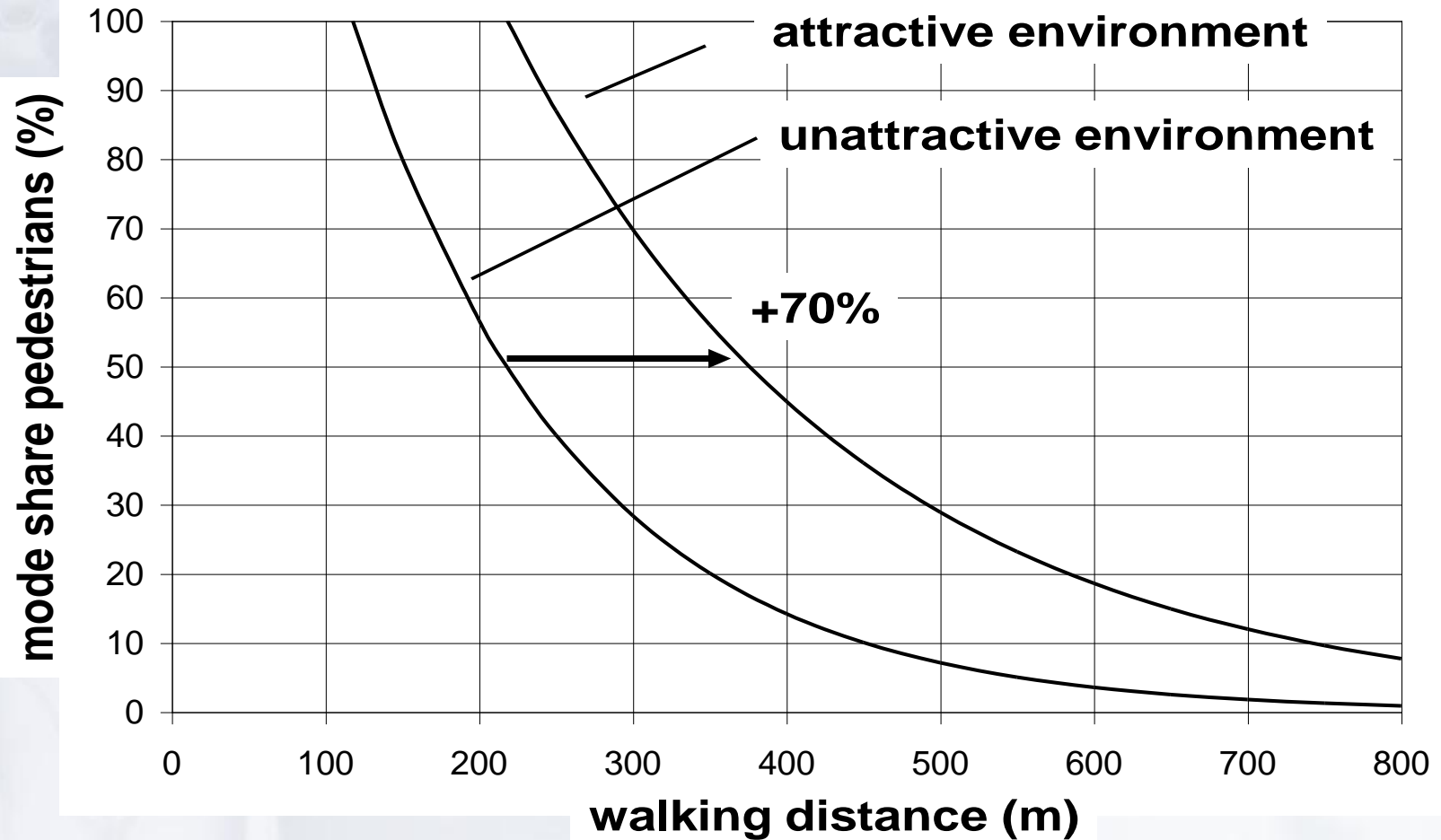


External energy

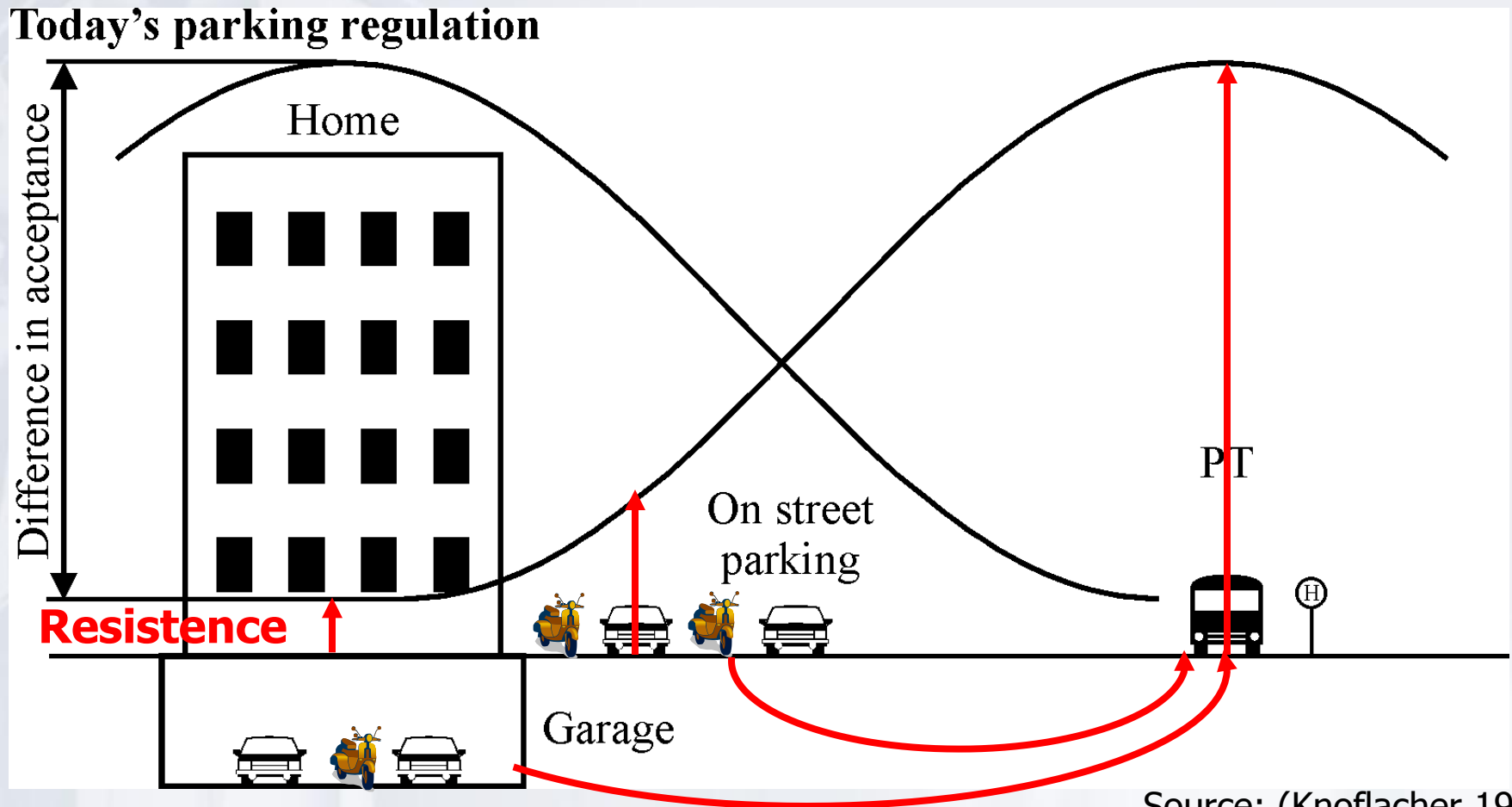


Source: Pfaffenbichler, P. C. (2001). "Verkehrsmittel und Strukturen." *Wissenschaft & Umwelt INTERDISZIPLINÄR(3)*: 35-41.

Structure and behaviour



Existing parking organisation

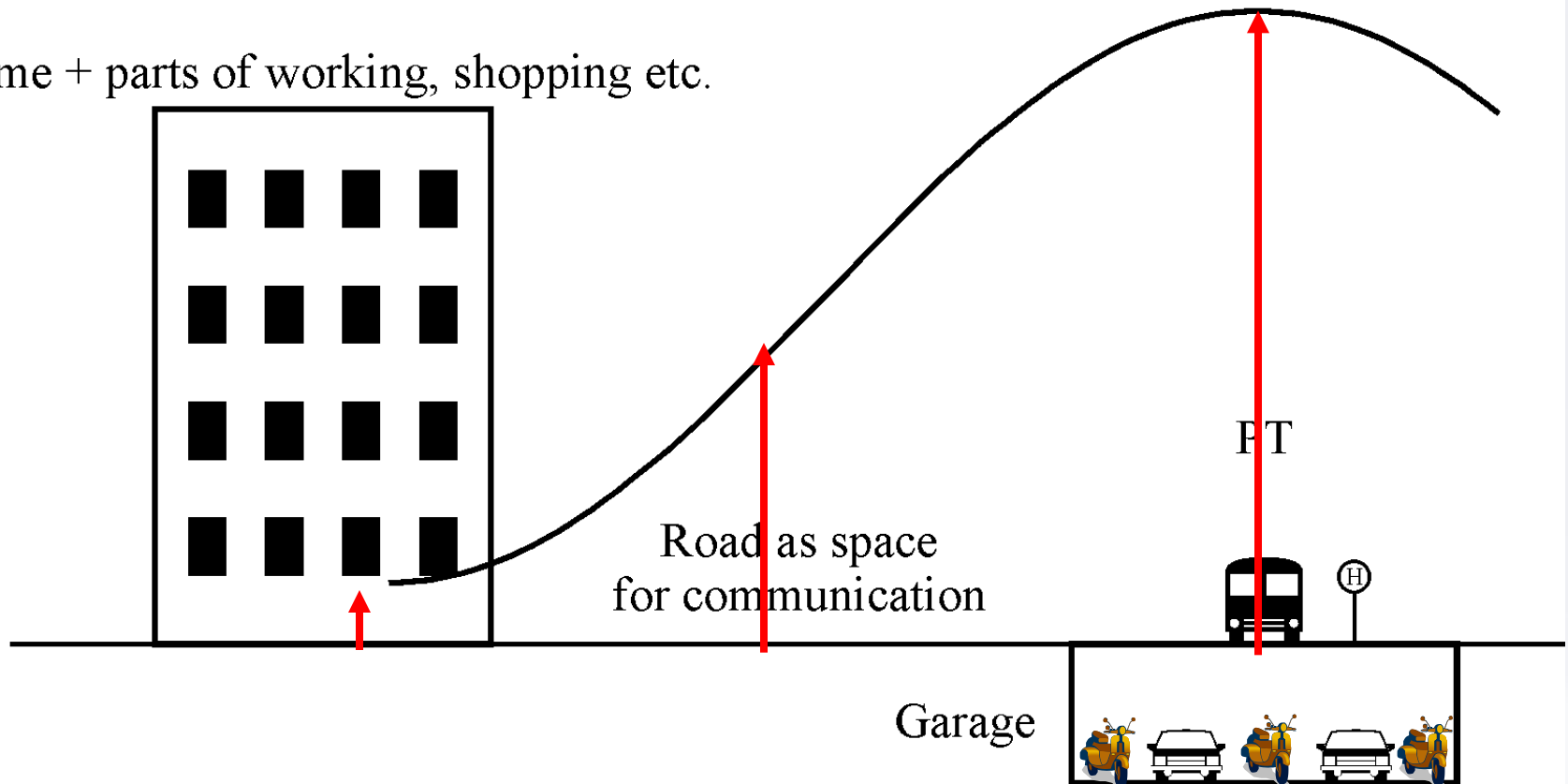


Source: (Knoflacher 1980)

Equi-distance parking organisation

The basic solution

Home + parts of working, shopping etc.



Source: (Knoflacher 1980)

Conclusion

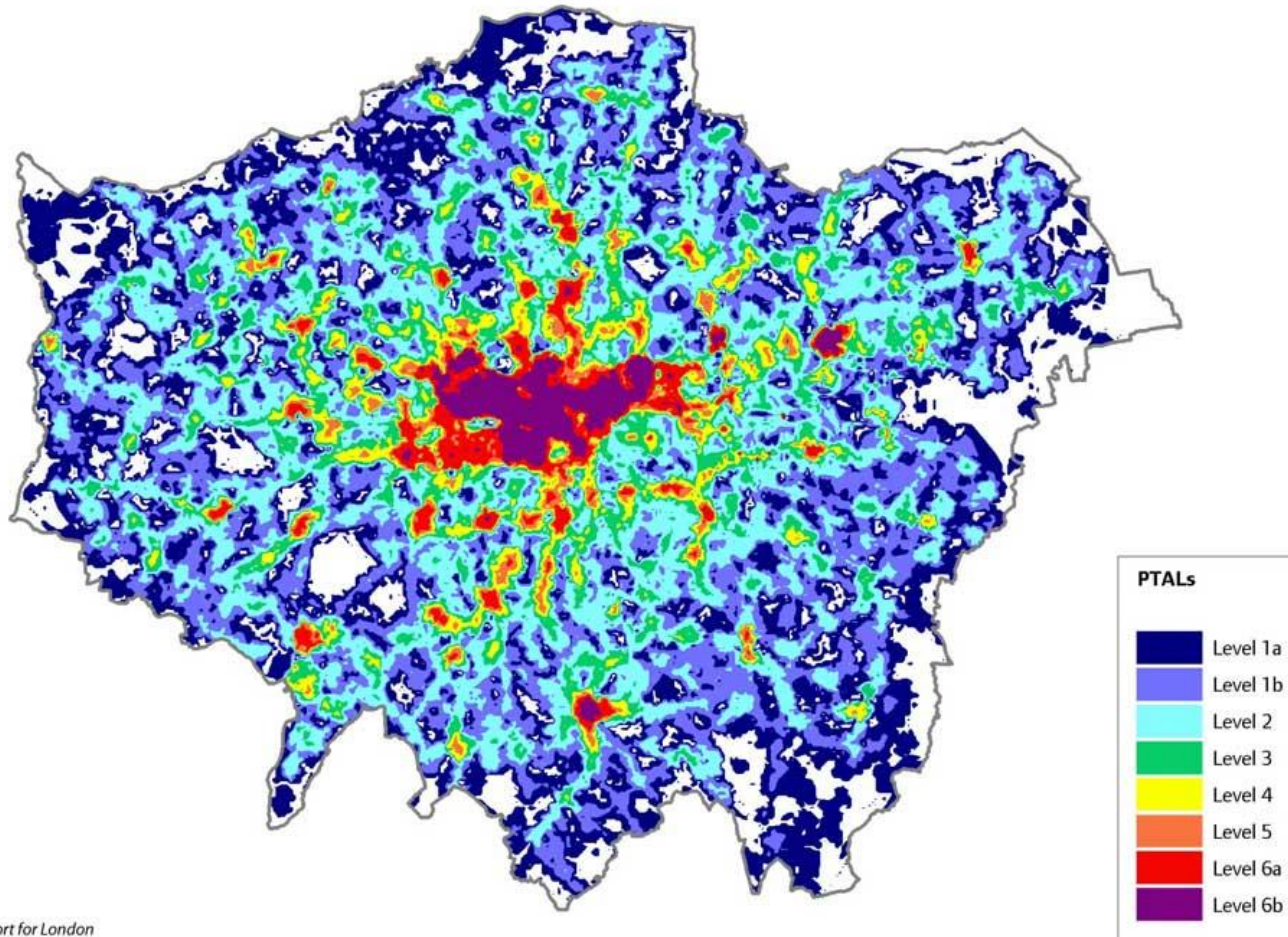
- Parking organisation is an effective 'push' measures
- Increase in motorisation leads to increase in space use for parking in city
- Provision of parking space influence motorisation and sustainability
- Minimum requirement parking space policy leads to provision of surplus parking space

Recommendation

- Abolish minimum parking space policy for maximum allowable that take in account of Public transport accessibility level
- Provide structural change that will influence desirable behaviour change

Public Transport Accessibility Level (PTAL), London

Access to public transport

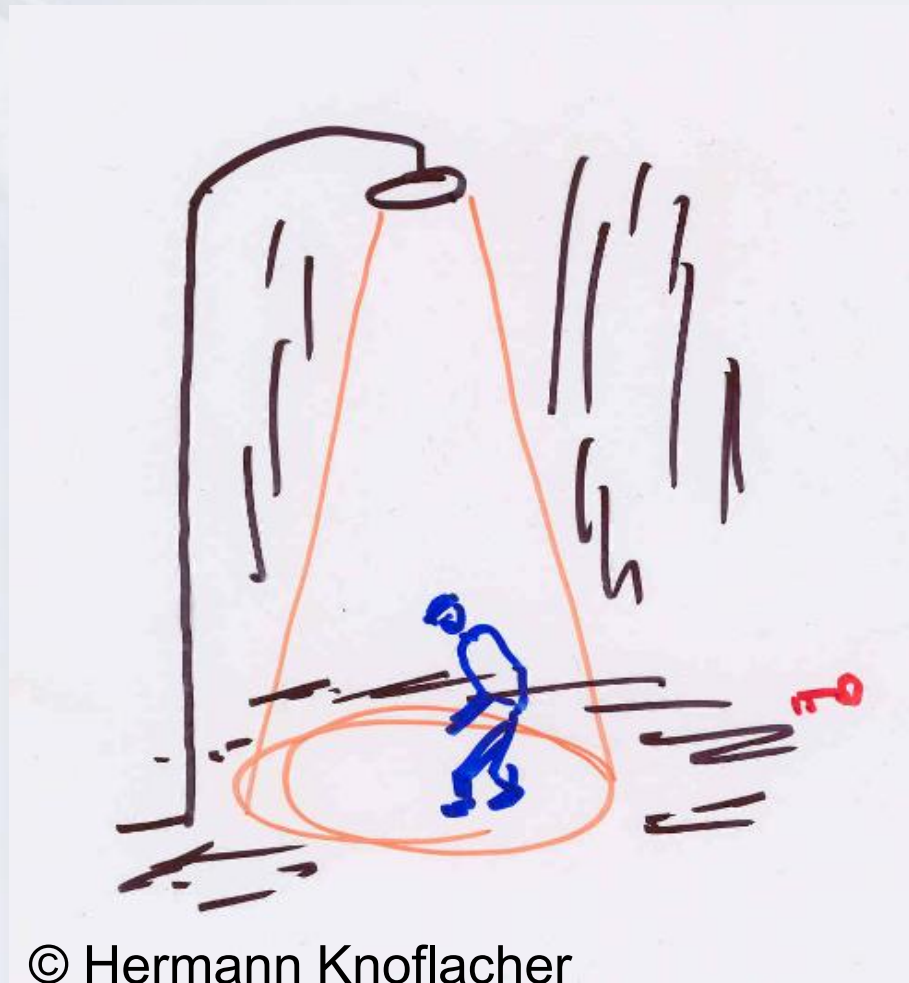


source Transport for London

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Diagram: GLA, The London Plan - consolidated with alterations since 2004 (2008)
www.london.gov.uk/thelondonplan

Where is the solution?



© Hermann Knoflacher

Thank you very much for your attention!

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