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THE NEW AMERICAN CLASSIC

MOVING BEYOND THE 'CAR'

**Mobilities in Cities: From Visible to Invisible
Columbia University, NY, April 2014**

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E F Schumacher: 'There is no substitute for energy. The whole edifice of modern society is built upon it....it is not 'just another commodity' but the precondition of all commodities, a basic factor'

J Paul Getty 'The meek shall inherit the Earth, but not its mineral rights'.

John McNeill: 'We have deployed more energy since 1900 than all of human history before 1900'

Richard Sennett: 'Today...we take unrestricted motion of the individual to be an absolute right. The private motorcar is the logical instrument for exercising that right, and the effect...is that the space becomes meaningless or even maddening unless it can be subordinated to free movement'

Chief Economist, HSBC Bank (2011): 'Energy resources are scarce. Even if demand doesn't increase, there could be as little as 49 years of oil left'.



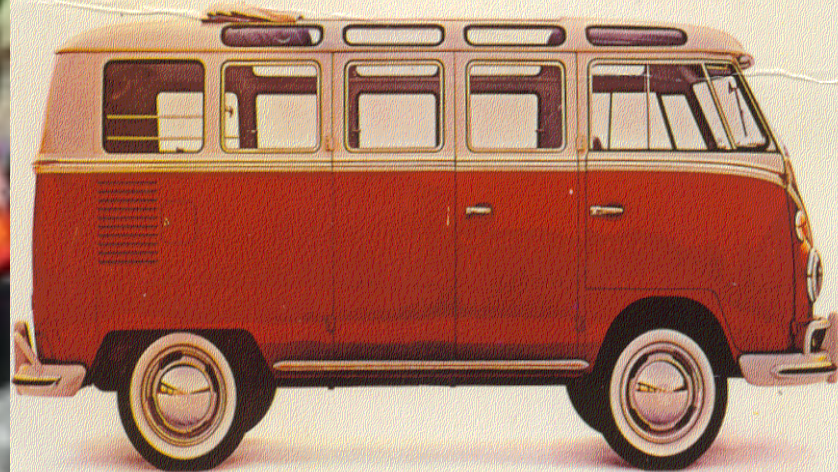
**SPINDELTOP,
TEXAS 1901
FIRST OIL GUSHER
INITIATED THE
MOBILE C20th**

NOT JUST A 'CAR'

- the quintessential *manufactured object* produced by the leading industrial sectors and C20th iconic firms
- the major item of *individual consumption* after housing that provides status to its owner/user through its sign-values
- an extraordinarily powerful *machinic complex* constituted through its many technical and social interlinkages
- the predominant global form of 'quasi-private' *mobility*
- the dominant *culture* that sustains major discourses of what constitutes the good life, what is necessary for a citizenship of mobility and that provides potent literary, artistic and advertising images and symbols
- the single most important cause of *environmental resource-use*



Room with a view.



AUTOMOBILITY QUA SYSTEM

It changes the environment or fitness landscape for other existing and future systems by :

- adapting as it spreads along the paths and roads of each city**
- drawing in many aspects of its environment which are then reconstituted as components of its system,**
- being central to and locked in with the leading economic sectors and social patterns of twentieth century 'carbon capitalism'**
- promoting the notion of convenience rather than speed**
- seemingly providing the solution to the problems of congestion that it itself generates**
- being able to externalise dangers onto those outside the system as it provides enhanced security for those 'within'**
- being central to the individualist, consumerist affective culture of contemporary capitalism**

Changing automobility is not a question of individual behaviour but of systems and practices changing

HABITS AND SYSTEMS

Habits derive from systems lying outside 'individuals'

There is no tendency for systems to move towards equilibrium

Systems significant in the contemporary world are simultaneously economic, physical, technological, political and social – sociotechnical

There is increased linking of system components through software, cybernetic architecture and networking

There is an unpredictability of systems with 'non-linear' relations between 'causes' and 'effects'

Systems once established can get 'locked in' over decades in relationship to each other

Systems are clustered

Habits are elements of social practices

HABITS AND SYSTEMS




OS506	MADRID	10:40	10:35
AZ320	VIENNA	10:40	10:40
DL071	PARIS	10:40	10:40
AP2940	ATLANTA	10:40	10:40
OA234	MILANO/LINAT	10:50	10:50
A3651	ATHENS	10:55	10:55
Z1779	RHODES	11:00	11:00
7548	PALERMO	11:00	11:00
2866	MOSCOW	11:00	11:00
003	CATANIA	11:00	11:00
	FORT LA	11:05	11:05



LOCKED INTO OIL

- **Oil provides almost all transportation energy in the modern world (at least 95%) - it uniquely makes possible mobile lives including collegial, family and friendship miles**
- **Fuels the world's ships that transport components, commodities and food on a global scale**
- **Is an element of most manufactured goods (95%)**
- **Is crucial to at least 95% of food production for a rising world population through irrigation, transport, pesticides, fertilisers**
- **Is crucial in providing back-up power and lighting**

An aerial photograph of a massive, multi-level highway interchange. The image shows a dense network of concrete overpasses, ramps, and multi-lane roads that crisscross in various directions. The structure is highly complex, with several levels of elevation. The surrounding area includes some greenery and residential or commercial buildings, though they are less prominent than the highway infrastructure. The overall scene conveys a sense of a highly developed and interconnected road network.

**LOCKED INTO OIL,
WOULD THIS
FUTURE HAVE
BEEN CHOSEN IN
1901?**

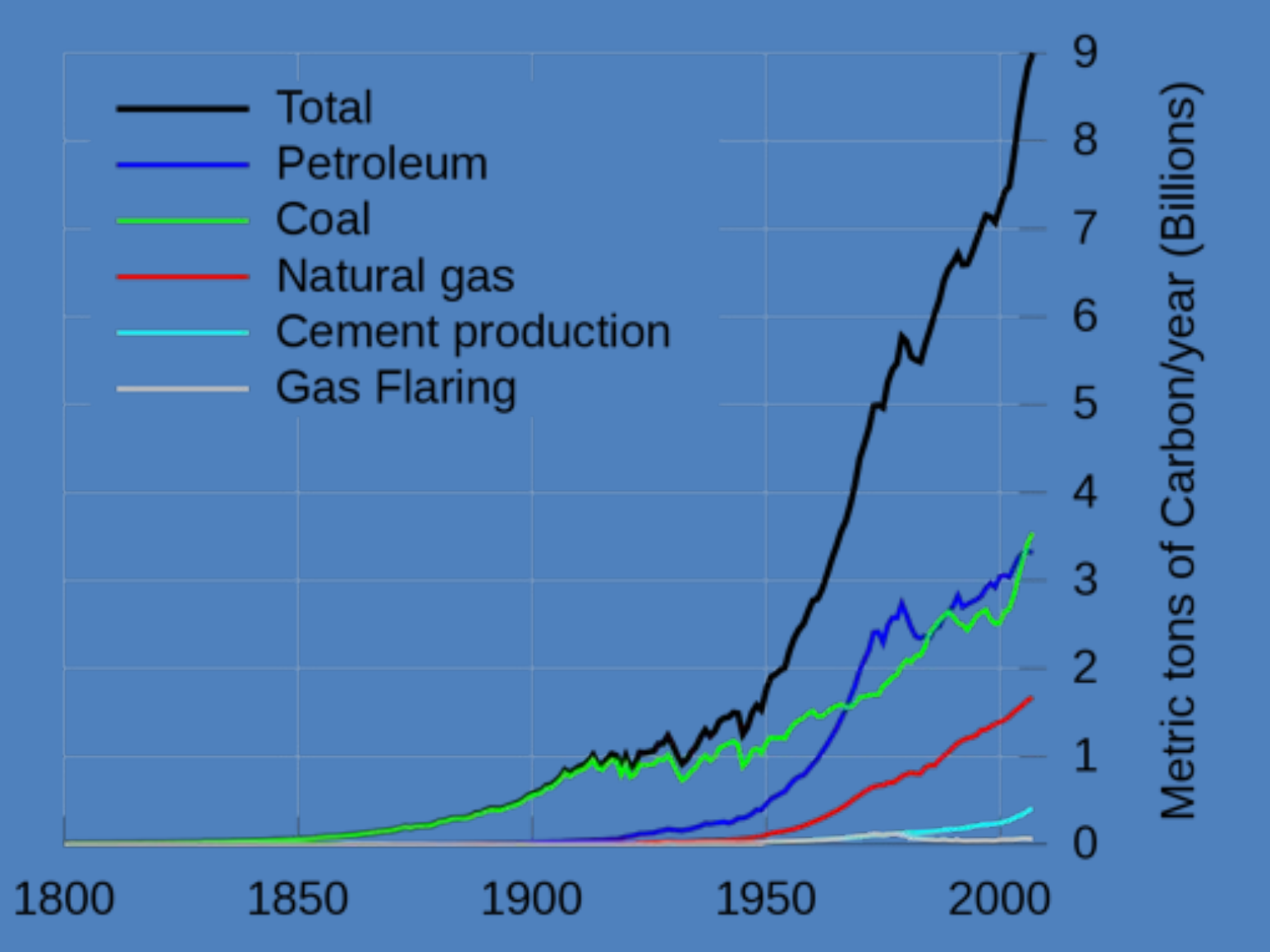
**OIL FUELLED SYSTEMS WERE NOT INEVITABLE
LA JAMAIS CONTENTE – FIRST 'CAR' TO TRAVEL
OVER 60 MPH WAS ELECTRIC - IN 1899**





1914 DETROIT ELECTRIC MODEL 46 ROADSTER

GLOBAL CARBON EMISSIONS 1800-2010



CLIMATE CHANGE

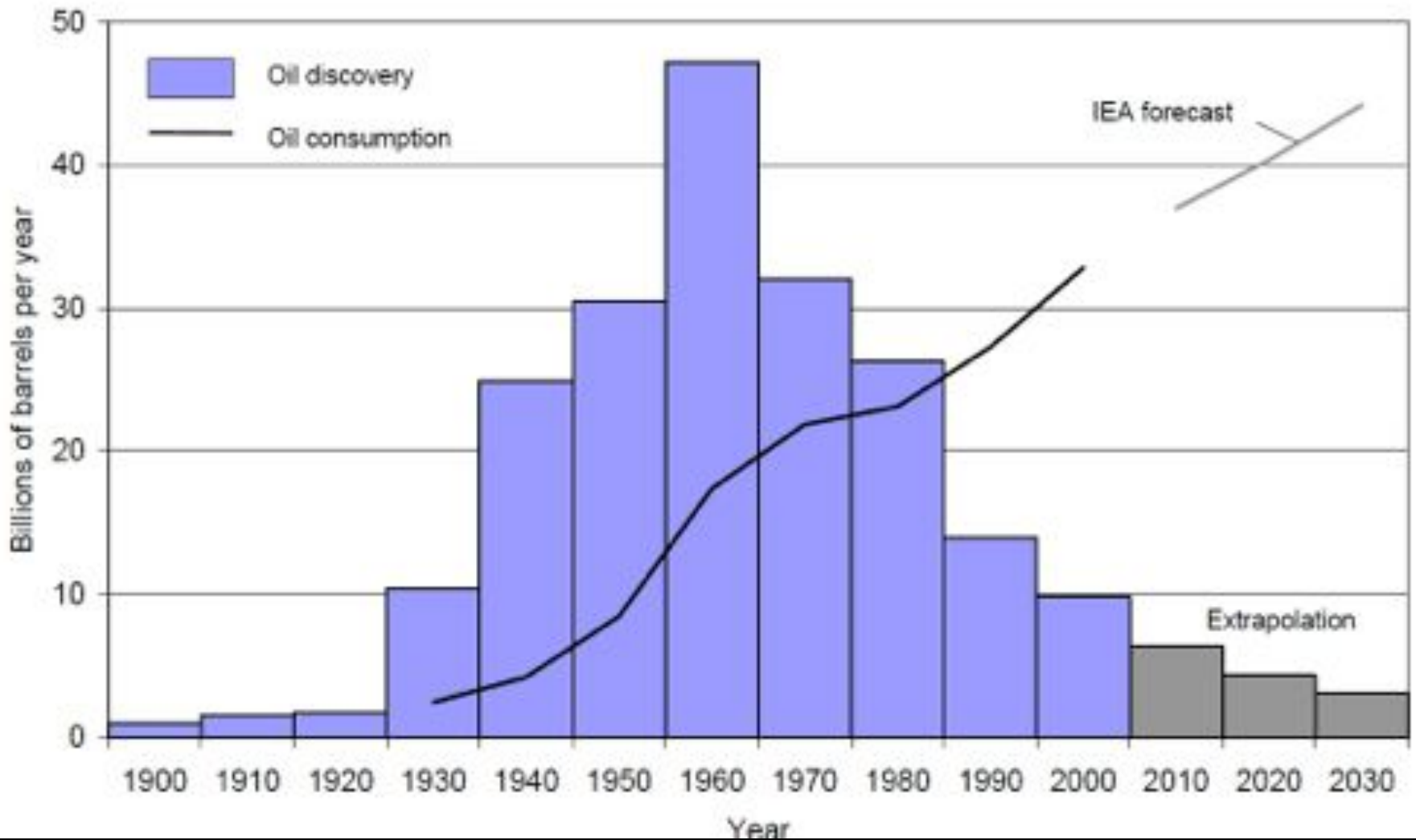
- almost certain increases of temperatures above 2° - and higher at the north and south poles
- 20% risk of more than a 5°C increase in temperatures
- IPCC models do not factor in some possible positive feedback loops
- transformation of the world's physical and human geography through a 5-20% reduction in world consumption levels and the capabilities of life
- increases in 'failed states' (and failed 'city states') unable to cope with oil shortages, droughts, heatwaves, extreme weather events, flooding, desertification and millions of climate change refugees.
- rising sea levels and storm surges resulting especially in the flooding of roads, railways, transit systems, and airport runways
- growing insecurities in the supply of clean water
- increasingly significant problems of food security - food production depends upon hydrocarbon fuels



© Veronica De Souza/Twitter



SANDY IN NORTH EAST USA 2012 THAT COST AT LEAST \$62 BILLION



**OIL DISCOVERY AND CONSUMPTION 1900-2030 –
IEA PRONOUNCED PEAKING IN 2006**

BRIAN ARTHUR ON SYSTEM CHANGE

System innovations at least presuppose the combining of isolated islands of an archipelago into a different system. This takes three to four decades.

'A revolution does not arrive until we reorganize our activities...around its technologies, and until those technologies adapt themselves to us. For this to happen, the new domain must gather adherents and prestige. It must find purposes and uses...This time is likely to be decades, not years. And during this time the old technology lives on', driving out the new

FUTURES

- central to many future scenarios are various new technologies and of their presumed transforming impacts.
- it is important to resist a technology-first analysis since technologies do not just develop for endogenous reasons
- nor do they then simply transform the economic and social landscape in their own image once developed
- technologies are always to be seen as heavily embedded within forms of economic, social and political life.
- they depend upon business *and* sociological models
- innovation is a matter of synchronisation across many different social, economic and political entities

'SOCIAL' CHARACTER OF INNOVATION

- First, there are social ties between multiple 'innovators' and there are clear innovation networks that are specific to or especially enhanced within particular 'cities'.**
- Second, innovations only come to move beyond the 'niche' phase if they are successfully inserted within social practices as people's lives may be re-organised around the particular innovation or set of innovations.**
- Third, such innovations involve 'synchronising' otherwise disparate elements located at varied positions within the 'international division of innovative labour'. What is crucial is the enabling of links and connections between these spatially separated innovators and hence facilitating 'synchronisation'.**

GOVERNANCE

- the level and forms of necessary public expenditure partly because many transformations require infrastructural change;
- the role that 'cities' should play so as to orchestrate resources and facilitate synchronisation;
- how to deal with the ways in which many new infrastructures are national/ international and hence bypass cities;
- developing systems of calculation such that interventions with regard to new mobility initiatives can be assessed alongside each other;
- how these systems of calculation should concern the collective interests of a 'city' and not just those of individuals;
- these are public goods or commons
- the ways in which the shift from public to private funding means that companies will often use notions of 'commercial confidentiality' to hide the costing/pricing calculations that lie behind decisions

A 'POST CAR' SOCIOTECHNICAL SYSTEM?

ALL HAVE TO CHANGE:

- shifts in transport *policy* in cities away from predict and provide
- new *fuel systems* for cars, vans and buses
- *new materials* for constructing 'car' bodies
- *smart vehicles*
- *deprivatise* cars through city-wide car-sharing, cooperative car clubs and smart car-hire schemes
- 'smart-card' *technology* to transfer information from car to home, to bus, to train, to workplace, to web site, to bank.
- new *social* practices
- *disruptive* innovation



POST CAR SYSTEM

- **multiple, dense forms of movement mainly of small, ultra-light, smart, deprivatised 'vehicles'**
- **flexibilised travelling accessing small, light mobile pods as and when required**
- **electronic regulators embedded in lampposts and in vehicles to regulate access, organise price and control vehicle speed.**
- **some vehicles would be driverless**
- **vehicles would be electronically and physically integrated with other forms of longer range collective mobility**
- **electronic coordination between motorised and non-motorised transport**
- **smart 'cards' would control access to and pay for people's use of the various forms of mobility**
- **software systems 'intelligently' work out the best means of doing tasks, meeting up or getting to some place or event**
- **some rationing of carbon**

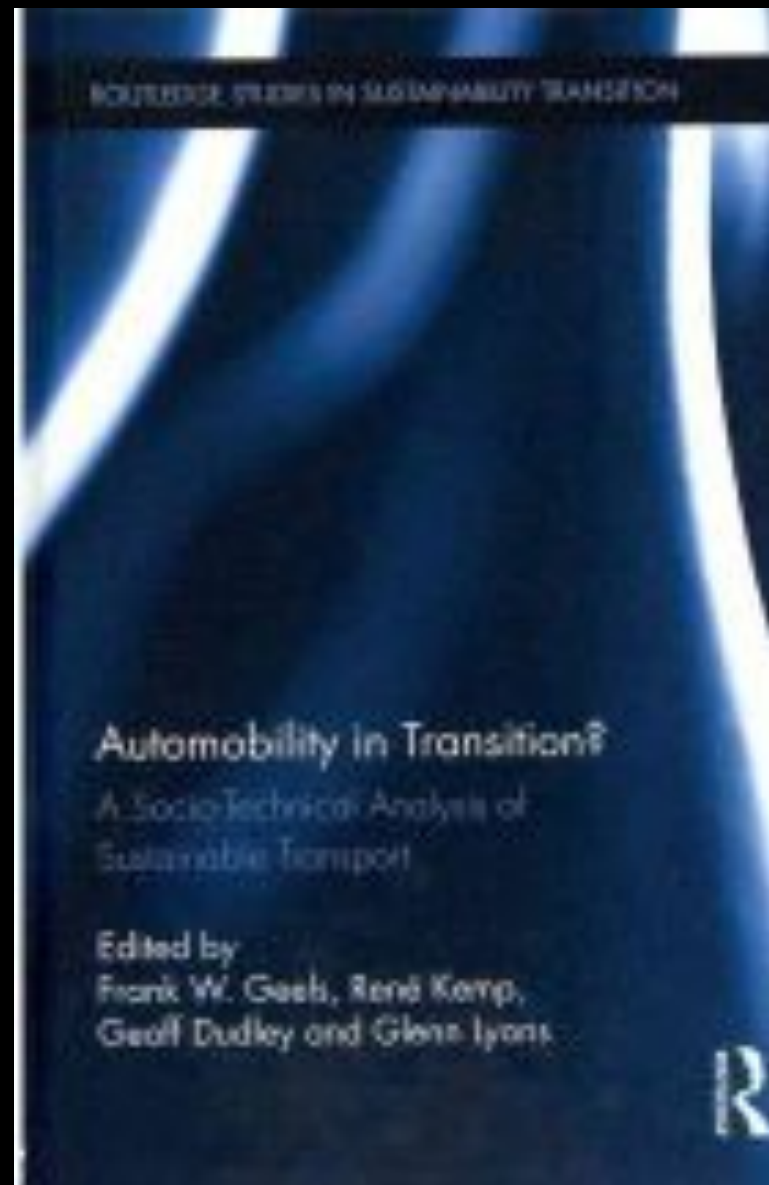
CRACKS IN CAR SYSTEM

car restraining measures such as parking restrictions and tariffs, traffic calming schemes, pedestrianised centres, bus lanes, bicycles and road pricing

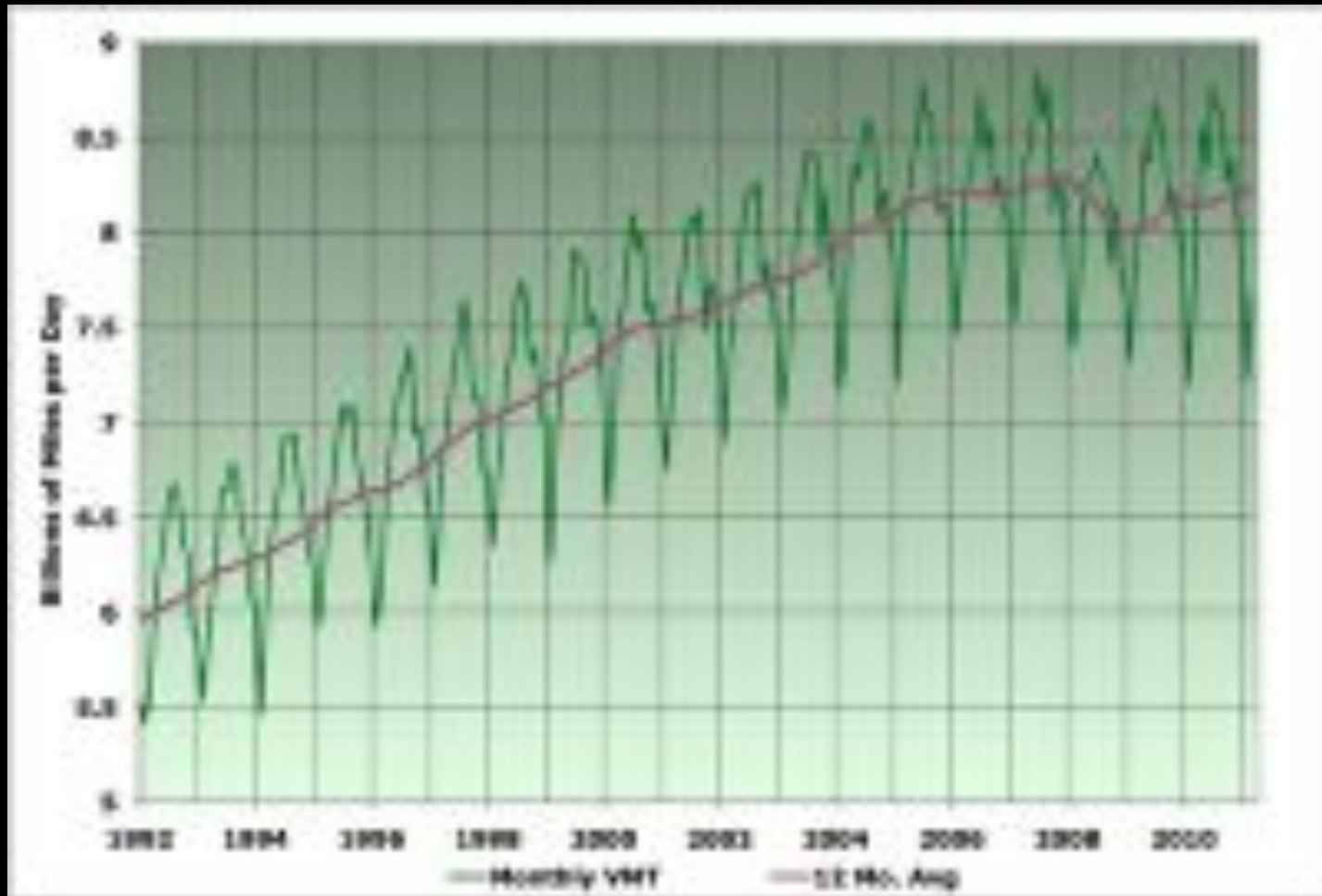
some weakening in the commitment of policy makers to the auto-mobility regime

policy makers, transport planners, and the car industry are aware of environmental limits

the growth of car mobility seems to be coming to a halt in some countries



PEAKING OF CAR TRAVEL IN US 1992-2012?



MILLARD-BALL AND SCHIPPER

‘travel activity has reached a plateau in all eight countries’.

societies seem to have reached or even are passing ‘peak travel’.

this is being brought about by high oil prices, stagnating economic growth, an ageing population and a renaissance of walking and cycling

Adam Millard-Ball, Lee Schipper, ‘Are we reaching peak travel? Trends in Passenger Transport in Eight Industrialized Countries’, *Transport Reviews*, 2011, 31: 357-78, pp. 373-4.

RICHARD BUCKMINSTER FULLER:

‘You never change anything by fighting the existing reality. To change something, build a new model that makes the existing model obsolete’.

CITY TYPE

INFRASTRUCTURE

MOBILITY PATTERNS

ENERGY SYSTEM

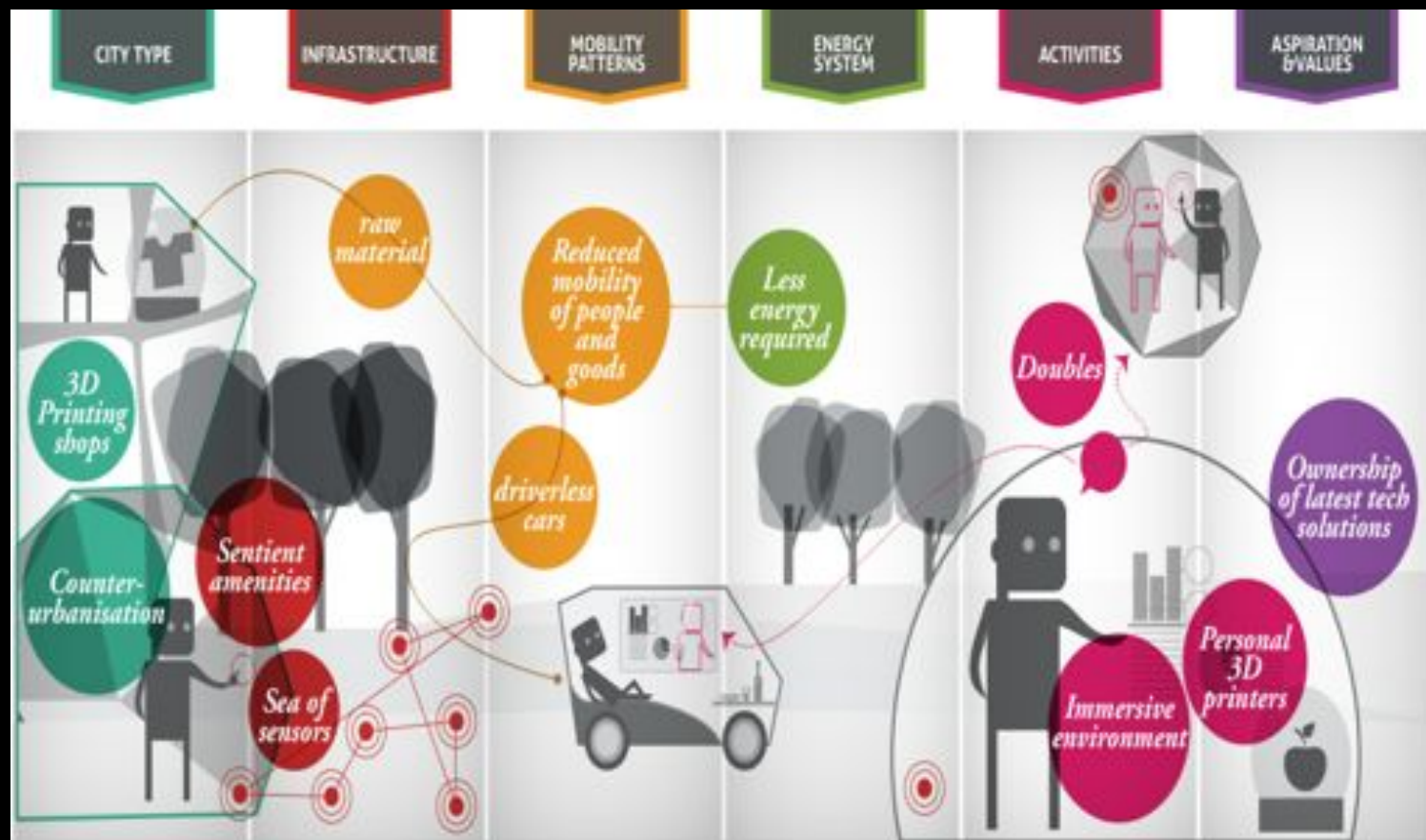
ACTIVITIES

ASPIRATION & VALUES



LIVEABLE CITY

low carbon cities with a new idea of wellbeing (live small, drive less) and connect with those nearby



DIGITAL CITY

widespread substitution of physical movement of objects and people by many forms of digital communication and experiences