Low Carbon Transport

(with a focus upon surface transport and personal travel)

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Overview

- **Setting the scene**
  - policy goals; economic growth and traffic growth; determinants and consequences

- **The King Review**
  - Vehicle efficiency, cleaner fuels and consumer behaviour; Questioning the balance of emphasis

- **An uncertain future**
  - unintended consequences; scenario planning

- **Behaviour change and social change**
  - Challenges; opportunities

- **An outlook for the future**

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Setting the scene – policy goals

- Policy goals ("Towards a Sustainable Transport System"):
    - addressing climate change;
    - maximising competitiveness and productivity;
    - better health and longer life expectancy;
    - improved quality of life; and
    - greater equality of transport opportunity

- "We need a transport network that can meet the challenges of a growing economy and the increasing demand for travel, but can also achieve our environmental [and social] objectives."
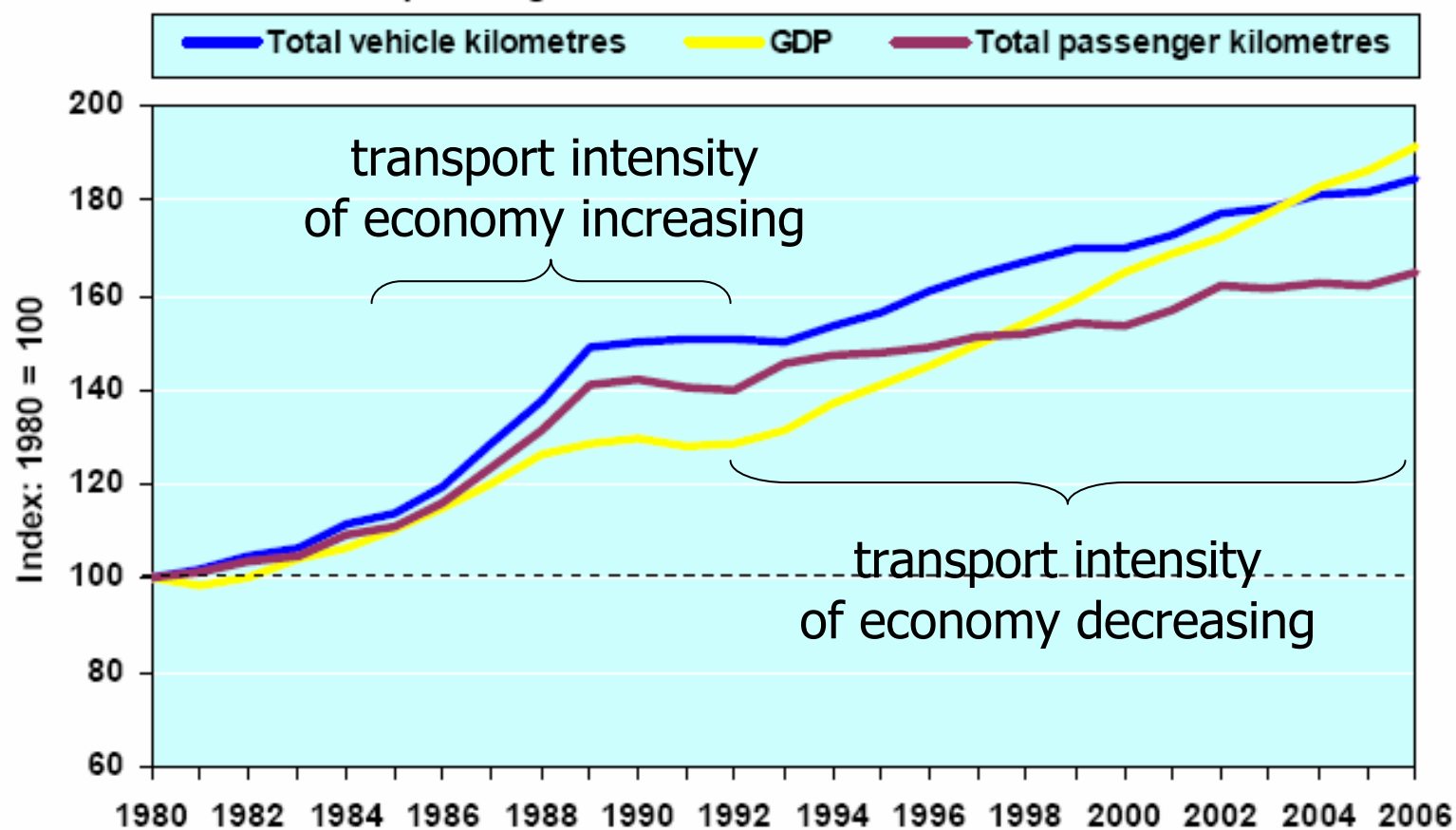
    DfT (2004). The Future of Transport. White Paper.

- "Transport is crucial for our economic competitiveness and commercial, economic and cultural exchanges."

    EU (2001). European transport policy for 2010: time to decide. White Paper.
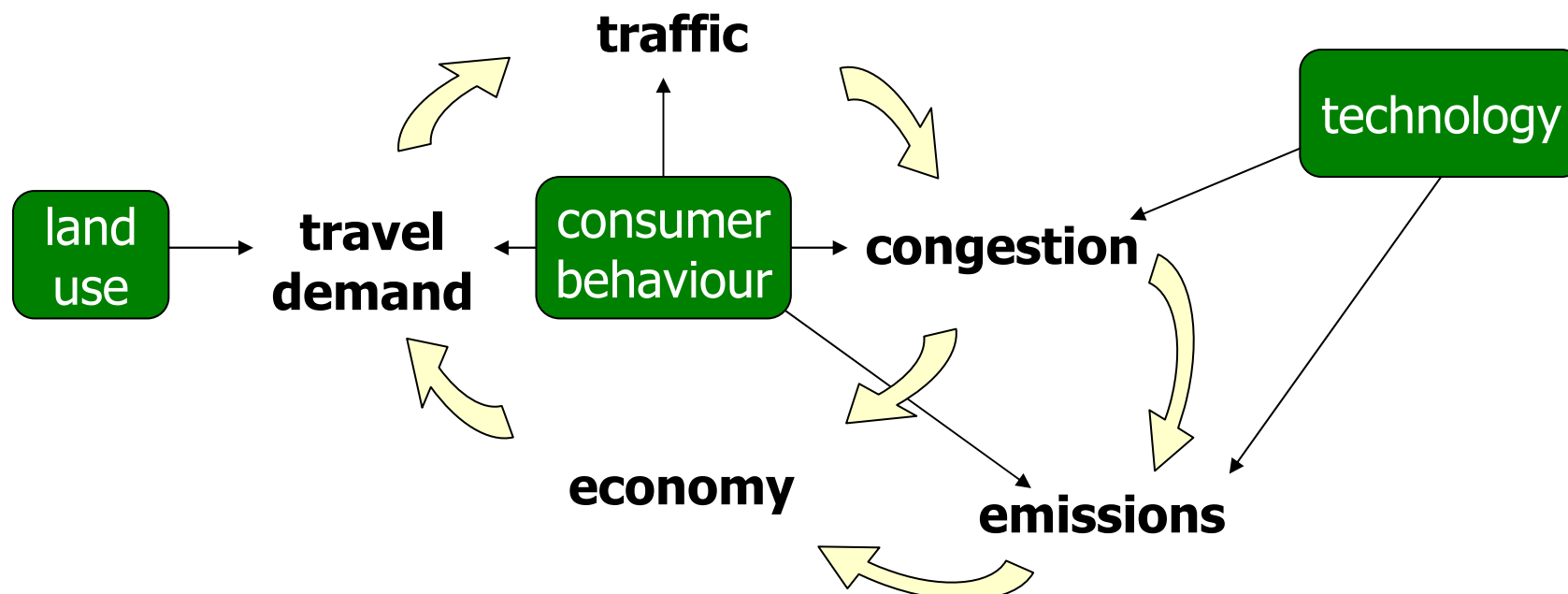
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Setting the scene – economic growth and traffic

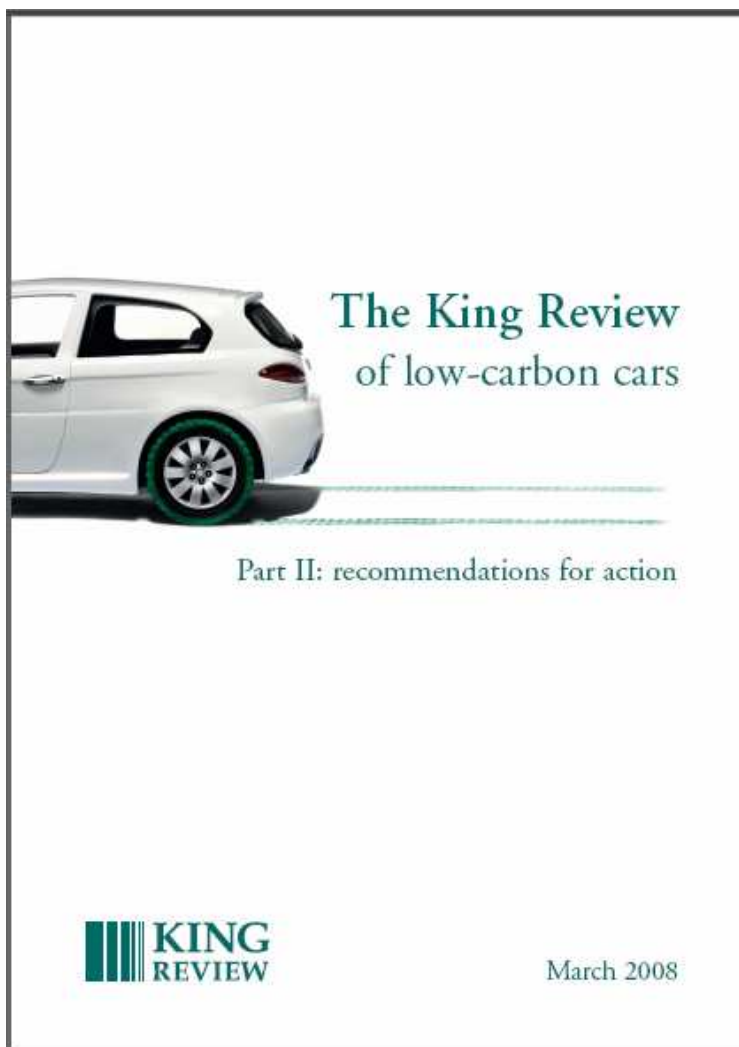Trend 1.2a – Road traffic, passenger kilometres and GDP: 1980 to 2006, Great Britain

Legend: Total vehicle kilometres — GDP — Total passenger kilometres

transport intensity of economy increasing

transport intensity of economy decreasing

Source: Department for Transport and Office for National Statistics

Setting the scene – determinants and consequences

traffic

technology

land use → travel demand ← consumer behaviour → congestion

economy

emissions

◼ - areas of (potential) policy influence

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The King Review – initial context

The King Review
of low-carbon cars

Part II: recommendations for action

KING REVIEW

March 2008
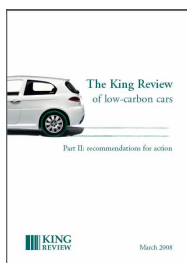
Commissioned "to examine the vehicle and fuel technologies which over the next 25 years could help to 'decarbonise' road transport, particularly cars."

"Demand for motoring is strongly linked to economic growth. As the economy continues to grow and incomes rise, people are likely to want to increase their spending on motoring. The Eddington Transport Study projected a 28 per cent increase in vehicle kilometres between 2003 and 2025"

"The global challenge is to enable growth in road transport, in a sustainable, environmentally responsible way."

http://www.hm-treasury.gov.uk/independent_reviews/king_review/king_review_index.cfm
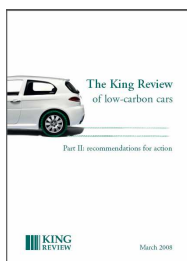
The King Review – optimistic outlook

- "Part I of the Review, published on 9th October 2007, carried a positive message that there is significant potential for reducing CO2 emissions from road transport in the short, medium and long term, through the development of more efficient vehicles, cleaner fuels and smarter consumer choices."
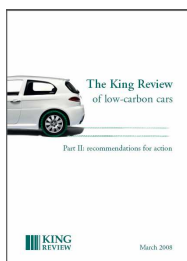
  (Press release, Aston University, 2nd April 2008)

- "in the long term (by 2050 in the developed world), almost complete decarbonisation of road transport is a realistic ambition"

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The King Review – achieving decarbonisation

- more efficient vehicles, cleaner fuels and smarter consumer choices

- "Improving public transport can make this a more attractive option and must play a key role in reducing emissions from transport. People may also be able to make fewer short journeys, or to walk or cycle, rather than taking the car. However, we must assume that, at least in the medium term, improvements in vehicle, fuel or driving efficiency will be required to achieve emissions reductions on the scale required."
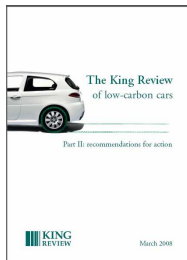
The King Review – consumer choices

- Choosing cars
- Using cars – smarter driving
- Using cars – smarter choices
  - Switching to low carbon alternatives
  - Workplace travel planning
  - Personal travel planning
  - Reducing the need for trips
    - "there may be scope at the margin for some people to reduce the number of journeys they make"
    - "The design of towns and cities also impacts on people's need to travel"
  - More efficient use of cars
  - Car clubs

The report's 'also-ran'

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The King Review – questioning the balance

- Tone of the report is: behaviour change is difficult; technology fix is easier and thus central
- Technology fix can reduce emissions per unit of travel but does not address total volume of travel
- Behaviour change can reduce total (motorised) travel (and improve efficiency of travel)
- Do we want to live in a world that is decarbonised but in which we are hypermobile?
- Can we afford to decarbonise and not 'decongest'?
- What is the balance between public/political acceptability and effectiveness?
- Will the technology fix message undermine behaviour change potential?
- The 'easy' answer – do everything!?

An uncertain future – unintended consequences

■ **Policy:**
Renewable Transport Fuel Obligation stimulating biofuel production to: substitute for oil; lower emissions; support agriculture sector
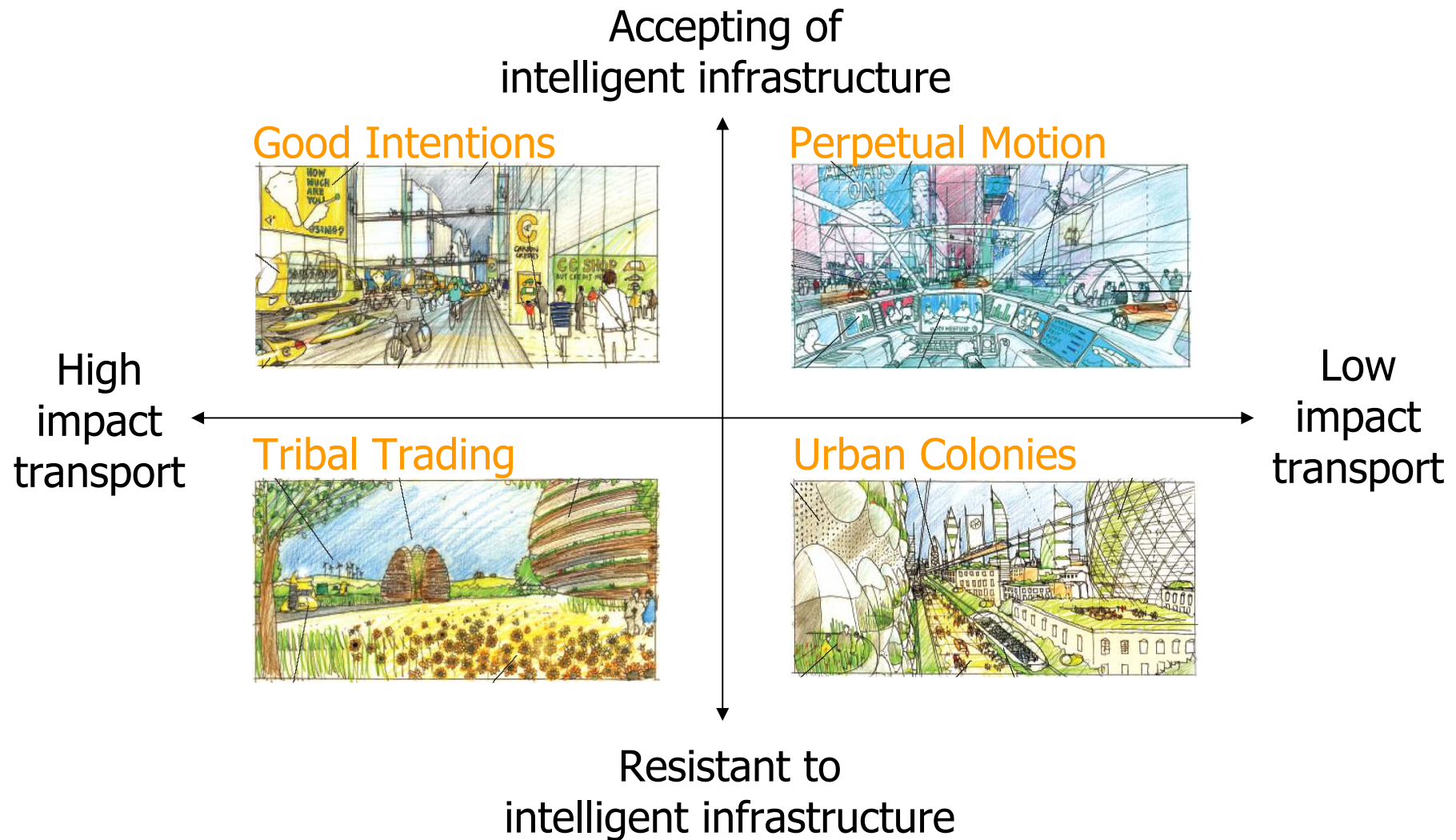

http://keetsa.com/blog/wp-content/uploads/2007/06/biofuels.jpg

■ **Unintended consequences**:
  – Impact on livestock and poultry industries
  – Impact on consumer food prices (food versus fuel)
  – Environmental impacts – are emissions lowered?; deforestation; displacement of indigenous populations

DfT review called, 2007

"makes the EU look ridiculous to say that it will examine the consequences of a policy - after rather than before the member governments agreed to implement it" (Lawson, 2008)

http://www.transport.uwe.ac.uk/research/projects/hindsight.asp

An uncertain future – scenario planning

Accepting of
intelligent infrastructure

Good Intentions

Perpetual Motion

High
impact
transport

Low
impact
transport

Tribal Trading

Urban Colonies

Resistant to
intelligent infrastructure

http://www.foresight.gov.uk/OurWork/CompletedProjects/IIS/Index.asp

An uncertain future – an integrated approach

- **intelligent design**, minimising the need to move, through urban design, efficient integration and management of public transport and local production
- a system that can **provide intelligence**, with sensors and data mining providing information to support the decisions of individuals and service providers
- **infrastructure that is intelligent**, processing the mass of information we collect and adapting in real time to provide the most effective services
- **intelligent use** of the system where people modify their behaviours to use infrastructure in a sustainable way

http://www.foresight.gov.uk/OurWork/CompletedProjects/IIS/Index.asp

Behaviour change - challenges

■ Difficulty in appreciating a
(growing) problem exists:

"There's death, taxes, and traffic"
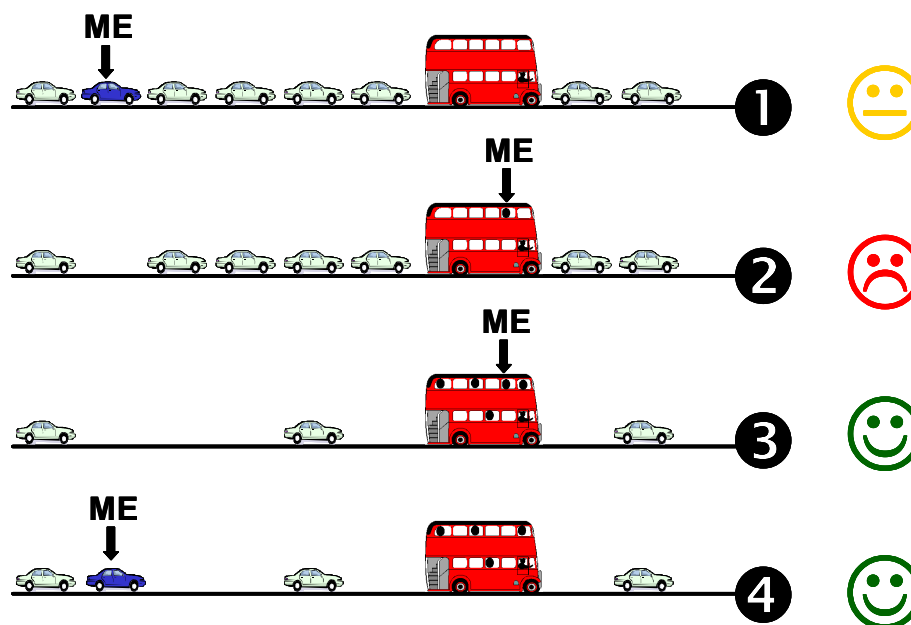– congestion is a fact of life

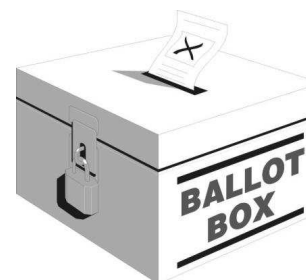■ The problem of rationality: versus

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Behaviour change - challenges

- Selfish (rational) behaviour – the social dilemma:

- Political nervousness surrounding public fear of change

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Behaviour change - opportunities

■ **Human adaptability
to change and the importance
of pricing signals**

During the September 2000 fuel crisis:

AA/Populus Panel

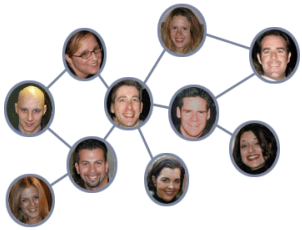Three quarters of AA members affected by high cost of fuel

28 July 2008

Three quarters of drivers are affected by the high cost of fuel with more than half cutting back on car journeys, according to an AA/Populus poll of 15,306 members.

The results reflect AA concerns about the volatility of the oil price, its impact on fuel prices at the pump and the onward impact this has on households and the economy at large.
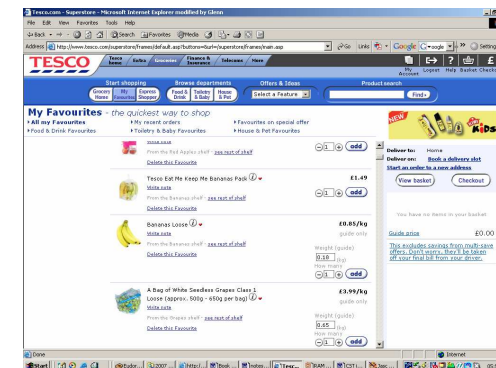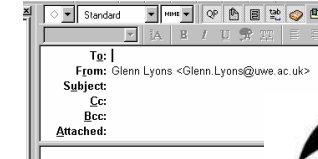
In short the polling found:

- 77% of members had made a conscious decision to drive less by car or had cut back on other areas of spending, or had done both (up from 64% in April)

- 55% of the entire sample had cut back on car journeys (up from 37% in April)

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Behaviour change opportunities

■ Motor age to information age:

– Social participation and economic activity
(in the knowledge economy) is about accessibility –
not *necessarily* mobility

– "Think global, live local"

– But: is the information age
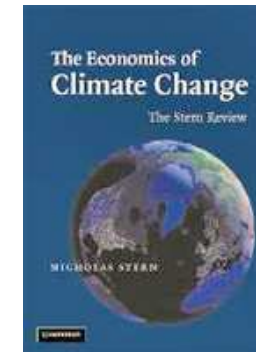supplementing or substituting
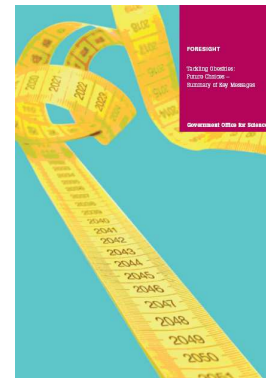for the information age?

HP Halo
Collaboration Studio

Behaviour change opportunities

- **Climate change – economic concerns**
  - But a social dilemma for individuals

Stern Report, 2006

- **Obesity – economic concerns
  and personal concerns**

Foresight Report, 2007

- + = political will and personal motivation for change?

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Social change opportunity

Advertising ban

Attempts to produce 'healthier' cigarettes

Tax increases

Advertising bans

Anti-smoking campaigns

Smoking <u>banned</u> in enclosed public places

"The advertising industry has been dealt a major blow after proposals for tobacco-style warning messages to appear in all car ads were agreed in a European Parliament vote today"
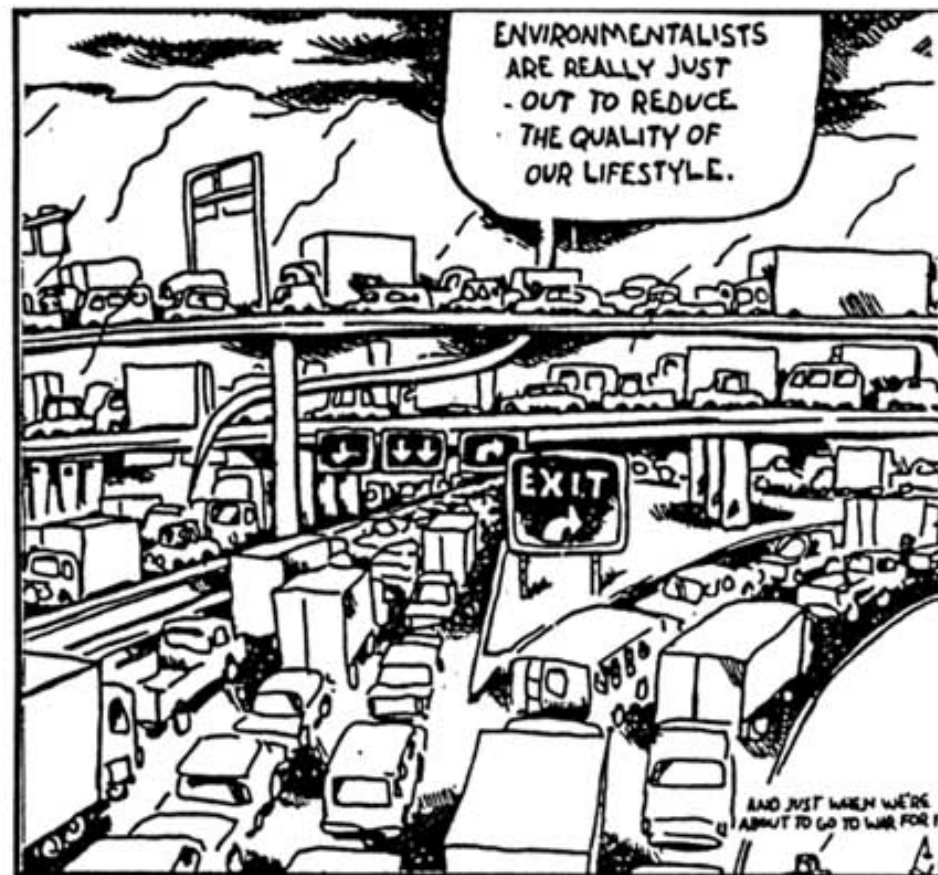
The Guardian, October 2007

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An outlook for the future

- There are different scenarios for low carbon transport – we must not be blinkered by present lifestyles and norms
- Do we want a world with ever growing levels of motoring?
- If not then we need strong political leadership to shape a different kind of world
- Social norms can change and governments <u>can</u> make contentious decisions for the public good
- The climate for change is favourable – there are compelling political 'excuses' for difficult decisions

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Thank you

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http://www.green.cusu.cam.ac.uk/