



General Certificate of Education
Advanced Level Examination
June 2013

Critical Thinking

CRIT4/PM

Unit 4 Reasoning and Decision Making

Case Study Source Material

To be opened and issued to candidates on or after 1 April 2013

- The material consists of eleven sources (**Documents A to K**) on the subject of **driving and congestion**. These documents are being given to you in advance of the Unit 4 examination to enable you to study the content and approach of each extract, and to consider issues which they raise, in preparation for the questions based on this material in the examination.
- One further source (**Document L**) will be provided as an insert within the examination paper.
- Your teachers **are** permitted to discuss the material with you before the examination.
- You may write notes in this copy of the Source Material, but you will **not** be allowed to bring this copy, or any other notes you may have made, into the examination room. You will be provided with a clean copy of the Source Material at the start of the Unit 4 examination.
- This is a controversial subject, and feelings on many aspects of it can run high. The examination questions will ask you to *critically consider* various claims and arguments, and to make a *reasoned decision* of your own.
- You are not required to carry out any further study of the material than is necessary for you to gain an understanding of the detail that it contains and to consider the issues that are raised. It is suggested that at least three hours' detailed study is required for this purpose.

Document A

The end of motoring

Alex Rayner, *The Guardian*, 25 September 2011

Young people today would rather have the latest smartphone than a flashy car. And the number of them who can drive is plummeting. Is Britain's love-affair with the car really over?

Liz Parle can't drive. "I did try to learn," says the 24-year-old, Birmingham-born café owner, "but I failed my test a few times." Then she moved to London, where running a car can be a nightmare. Instead she cycles everywhere. "It's cheap, keeps me fit, and is of course better for the environment."

Parle is by no means atypical. In Britain, the percentage of 17- to 20-year-olds with driving licences fell from 48% in the early 1990s to 35% last year. The number of miles travelled by all forms of domestic transport, per capita per year, has flatlined for years. Meanwhile, road traffic figures for cars and taxis, having risen more or less every year since 1949, have continued to fall since 2007. Motoring groups put it down to oil prices and the economy. Others offer a more fundamental explanation: the golden age of motoring is over.

"The way we run cars is changing fast," says Tim Pollard, associate editor at CAR magazine. "Car manufacturers are worried that younger people in particular don't aspire to own cars like we used to in the 70s, 80s, or even the 90s. Designers commonly say that teenagers today aspire to own the latest smartphone more than a car. Even car enthusiasts realise we've reached a tipping point."

As hi-tech research and development budgets soar to keep pace with the iPhone generation, Pollard says that car makers are also coming to terms with less possessive buyers. "Towards the end of the 20th century, manufacturers cottoned on to the fact that we were owning things for shorter periods."

This has led to a proliferation of different ownership and rental schemes such as *Streetcar*, *Zipcar* and *WhipCar*. In response, the latest deals from the big car makers are very unlike your usual forecourt deal.

"Peugeot, for instance, has launched a European project called *Mu*," says Pollard. "You become a member and can then rent whichever Peugeot best suits your mobility needs that day."

Stefan Liske, a former car designer who now runs a company that plans new developments for companies entering choppy waters says the most radical change is that in "big societies, there is a huge status shift happening, where we are losing the idea that you use a car to define your status. So the industry needs more flexible leasing, financing and car-sharing models. And second, they have to find new revenue streams".

Underpinning all these innovations and ideas is what Liske sees as a major behavioural shift among the generation of 'digital natives'. "They don't care about owning things. Possession is a burden, and a car is a big investment for most people – not just the vehicle, but the permits, the parking space."

Crucially, these ideas aren't forming in the maybe land of science fiction, but are based on proven technology that is ready to be rolled out. "Cities such as London will, in 10 years, have vehicles going along autonomously and you can hop in and out of them," he says. A vehicle such as the one Liske describes is operating on the edge of the capital. The ULTra system consists of 21 electric vehicles running on a 4 km elevated guideway from Heathrow's Terminal 5 to two stations in the business parking lot. It replaces shuttle buses, which still serve the airport's other parking lots.

Not everyone shares these rosy transport visions. Paul Watters, head of public affairs and roads policy for the AA, cautions against calling time on the car. "We are a small island with a very old road network, and a fairly complicated rail network. We haven't invested enough in transport for generations. People driving less is good for the environment, but not good for the economy, and we've got to find a way to make the economy keep going."

Source: adapted from ALEX RAYNER, 'The end of motoring', *The Guardian*, 25 September 2011
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Document B**DRIVING WILL BE JUST FOR THE RICH**

Cars could soon become a preserve of the rich, with petrol prices set to rocket to £1.75 a litre, motoring organisations warned last night.

As the crisis in the Middle East continued, analysts predicted the cost of crude oil could double, leaving drivers having to fork out more than £100 to fill up the average family car.

The RAC warned that prices at the pumps were already 'unacceptable' and predicted more and more people will be forced to stop using their cars.

Adrian Tink, RAC motoring strategist, said: "It is clear that we are getting to the stage where drivers are going to be priced out of their cars. Before we know it, the car will become the preserve of the rich."

An AA spokesman said: "The motorist is going to have to brace himself for a storm."



Source: adapted from MARK REYNOLDS,
'Driving will be just for the rich',
Daily Express, 25 February 2011

Image: JOHN MILLER/ROBERT HARDING © Getty Images

Document C

Classic film blogger, Munro Bosse, writes on *The Last Chase*, a sci-fi thriller released in 1981 starring Lee Majors.

In this none-too-memorable look to the future, the USA has been decimated by a huge plague, and the economy wrecked by the exhaustion of fossil-fuel resources. A draconian dictatorship is in place and most democratic and civil rights overturned, except in the Free State of California, which has managed to maintain its independence. Among the measures, ownership of private vehicles has been outlawed and breaches of the law are severely punished. Surveillance cameras are everywhere – but, hey, we don't have to look to the future to see that happening.

Public figures line up to support the measures and praise the totalitarian regime for saving the nation from individualism and private greed. One such is Franklyn Hart, a former racing driver. He has vociferously renounced his past passion for the race-track, and become – publicly at least – a propaganda tool of the government and a campaigner for the virtue of public transport.

But as the plot unfolds, it becomes clear that Hart is living a lie. He is secretly opposed to the sweeping regulations and the heavy-handed enforcement, especially the ban on owning and driving cars. His opposition becomes an obsession. Secretly he sets about resurrecting his old car, an orange Porsche, using parts stolen from junkyards and depots. His plan is to drive from coast to coast, starting in New York and finishing in 'Free California'. But the police get wind of the venture just before Franklyn and a last-minute partner set off. And so (surprise surprise) the car-chase of the new century begins.

Naturally, Hart and his co-driver become heroes and celebrities as their perilous journey progresses. The fascist government must stop them by any means it can before a mass movement is sparked to regain lost freedoms.

And the rest is, or will be, history. (And so, fortunately, is the film.)

Comments

- Why the sarcasm? TLC was a great movie. One all-time favourite of yours truly. OK a bit dated maybe, but the point is as real as ever. Be warned. We will all need the Franklyn Harts of this world one day. [from **Chuck**]
- That world (depicted in *The Last Chase*) has not yet come to pass, but with fuel shortages, an exploding population and increasing congestion and carnage on the roads, is it so far-fetched? More to the point perhaps, is it such a bad idea? The 'freedom of the road' is largely a myth, created by aggressive advertisers and glamorised by the media. The end of the long romance we have had with our beloved wheels might be painful, but for the pleasure of seeing 'petrolheads', like Jeremy Clarkson, looking for work it might just be a price worth paying. [from **Fiona T**, Streatham]

Source: AQA 2012

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Document D

Car clubs

Car clubs give people access to a vehicle on a pay-as-you-go basis. This can be for those who do not want to own a car but still have occasional need for one, or for business usage in place of car pool vehicles.

These schemes extend the transport options available by giving people access to a car when they need one for trips, including shopping, leisure, business journeys and night travel. They save members having to own their own vehicle or incur the associated costs (capital costs, depreciation, insurance, tax, maintenance etc.).

Background

A study carried out for TfL (Transport for London) in 2007 suggests that a single club car can remove up to four private vehicles from the road and defer the purchase of a further six. The hourly/daily/weekly payment structure also makes the real cost of car use transparent and encourages users to think about whether a car is the most appropriate means of travel. By breaking the link with habitual car use, car clubs reduce congestion and pollution and increase physical activity. There is also evidence that car clubs can increase accessibility to services in areas of deprivation and can support low-car housing development.

Car club operators offer new cars for hire by the hour. They are responsible for providing the vehicles, insurance, roadside rescue and taking care of the cars' cleaning, maintenance and repair. Cars can be booked by telephone or online, 24 hours a day, and are accessed using a smart card and PIN. Billing is done securely online by credit card, unless paper copies are requested by members.

The accredited operators in London are:

- *City Car Club* • *Streetcar* • *Zipcar* • *WhizzGo*

Cars are parked in dedicated spaces and are available for hire by members who live or work nearby (although these may also be accessed by members who live or work further away and arrive by other means, such as public transport). The dedicated parking places may be either on-street or off-street.



Car clubs in London have the potential to appeal to a wide cross-section of the population. In households where car use does not justify the ownership costs of the vehicle(s), but access to a car is desirable, people can rely on the club for occasional car use. The other audience is households who defer purchasing a second, third or occasionally fourth car as the access to a car club alleviates the need to own an additional vehicle. There are currently around 30 000 car club members in London.

Source: adapted from Transport for London's *Car Clubs Strategy*, March 2008
Image: Car Club parking, London Borough of Redbridge

Document E

***WhipCar* – the world's first P2P ('peer-to-peer') car rental service**

WhipCar is the world's first P2P car rental service. To you and me, it is a website that makes it possible and easy to rent our car to our neighbours or for us to rent theirs.

Launched in April last year, WhipCar is a great example of what Rachel Botsman calls collaborative consumption, it is right in the heart of what *WIRED* magazine calls the trust economy, and what Lisa Gansky describes as the future of business, where access trumps ownership.

We should fess up and also admit that WhipCar has recently asked *live|work*'s Ben Reason to be their designer in residence – so this review may be a bit biased.

How it works

Car owners put their cars available to rent on WhipCar. They set their own price and availabilities, which can be by the hour/day/month. You can search for cars near your home (or close to your holiday destination) and, once you have signed up and your licence has been checked by the DVLA, you can rent directly from the car owner. Make a booking, pick up the keys, check the car and off you go – like a rental company except that you are renting your neighbour's car and not from a car fleet, and in the street around the corner rather than in a scruffy lot behind a railway station.


The clever bit is that all rentals via WhipCar are covered by a fully comprehensive insurance policy that sits on top of the owner's existing policy for the duration of the rental, be it three hours or five days. WhipCar also handles all the money and any issues that may arise.

Source: adapted from 'Early Adopter: WhipCar', live|work Studio Ltd.

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Document F

 **HM Government**
e-petition
Raise minimum driving age to 21
Responsible department: Department for Transport
Driving age should be raised to 21 due to recklessness among many young drivers.
It is a known fact that a high percentage of young drivers (mainly male) drive recklessly in attempts to impress others and in turn risk their lives and the lives of others. Raising the age to 21 would allow people the chance to hopefully mature and become better drivers.
Sign this petition
Closing: 07/08/2012
Share:   

Source e-petitions, Directgov © Crown copyright

TWEET from Tyler B :

**Better still make it 25. And at the same time make the upper limit 60.
Less congestion, fewer accidents.**

Document G**Night ban on young drivers ‘would save 200 lives’**

Banning young motorists from driving at night, drinking alcohol and carrying teenage passengers would prevent 200 deaths a year, a study has found.

Safety campaigners are calling for young drivers to face the proposed tough curbs for two years after passing their driving test.

A safety conference in London was yesterday presented with research from Cardiff University supporting the introduction of Graduated Driver Licensing (GDL), similar to schemes operated in Australia, New Zealand, Canada and many parts of the United States.

Dr Sarah Jones, of Cardiff's department of primary care, analysed every road crash in the UK from 2000 to 2007 involving drivers aged 17 to 19 to produce an estimate of the number of lives that would be saved by GDL restrictions.

She said: "GDL works in other countries and there's no good reason why it wouldn't work here. The cost to the NHS would be significantly reduced.

"It's not only lives that would be saved. Insurance costs should drop substantially if the number of crashes involving young drivers were reduced."

She said safety experts from other countries cannot understand why the UK has no such restrictions.

Of 91 people killed or injured on Britain's roads every day, a third of those are under 25.



Source: adapted from 'Night ban on young drivers would save 200 lives',
Daily Mail, 21 September 2010

Image: JEZIEL MARTIN © Getty Images

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Document H

Time to bite the bullet

There is one simple solution to two massive problems that plague the nation's transport system. The problems are congestion and accidents. In the ten years from 1998 to 2008, traffic on UK roads rose by 11% to 508.9 billion vehicle-kilometres. In 2010 there were a total of 222 146 reported casualties of all severities, 1% of them fatal. These figures won't fall appreciably unless something drastic is done.

The only solution, which is blindingly obvious, is to cap the number of driving licences issued in any one year to a figure determined by road capacity. That would control and stabilise numbers at a stroke. Once the agreed capacity is reached, a new licence is issued only when another expires: for example, when an existing licence holder dies or is banned. It would be like the queue for a busy town-centre pub or club: one in, one out.

Basically, it would be first-come-first-served, but with exceptions for people with special needs, such as important jobs (nursing, for example), or who live in inaccessible places with poor public transport. Older applicants – say over 25s – would also be accelerated. 17-year-olds could apply as they do now, but they would have to wait, perhaps for several years, for a licence to become available. They could have lessons, but not hold a full licence or drive without an instructor until they got to the head of the queue and could take the test. That way they would be more mature and more experienced by the time they took to the roads solo, or carried passengers. They would value their licence more, too, because a ban would mean going straight to the back of the queue again.

The drawback, it has been argued, is that there would not be sufficient supply of new licences to meet the demand and the need. To surmount this problem, older drivers, like very young ones, would have to make a sacrifice. At 65, when the bus pass is issued, your licence expires and goes to the next in the queue. It may seem harsh, but it would come at the end of 40 or more years of driving on uncongested roads and in much greater safety. Many older drivers are something of a liability on the roads anyway, as are younger men. Having fewer of both categories behind the wheel would reduce the hazards of driving significantly.

Of course, no government will ever have the courage to enact such a measure until the situation is so bad that there is no alternative. Meanwhile we, the economy and the planet all continue to suffer the consequences of spineless leadership and ineffective transport policy.

(Name and address withheld, on account of having two teenage sons and an elderly grandmother)

Document I

Road space rationing – what's that?

Road space rationing means just what it says: a restriction on what has become and will continue to be a rare commodity. Only so many cars can fit on the existing area of tarmac in a country, if they are also to move at the same time. Rationing is a way to give everyone a limited share of the space by restricting each vehicle to certain days. It is easy enough to implement given existing surveillance technology and prominent number plates. It has been introduced in several cities, including São Paulo in Brazil, pictured below, where it has existed since 1997. So why not everywhere?



Image: LUIZ FELIPE CASTRA © Getty

Practical implications

The implementation of road rationing (*Restricción vehicular* in Spanish and *Rodízio vehicular* in Portuguese) is common policy in South and Central America. It is aimed at the reduction of air pollution and fuel economy. It is a fact of daily life in Mexico City, Santiago (Chile) and in São Paulo where there were reported to be 6 million vehicles to accommodate in 2007. Cars are allocated certain days of the week on the basis of the last letter or digit of the licence plate, and fined if they enter restricted zones on other days, especially at peak times.

In 2007, New York State authorities considered road-space rationing based on licence plates as an alternative to congestion pricing, but its unpopularity with the electorate is thought to have resulted in its non-implementation.

Many European capitals have also toyed with restrictions on traffic in their most congested parts. The Mayor of Paris proposed a ban on motor vehicles in the city centre as part of the bid for the 2012 Olympics. Exemption was to be made only for residents, businesses and the disabled. When London won the bid, the plan was shelved.

Turn over ►

On a historical note, the centre of Ancient Rome at the time of Julius Caesar (c. 45 BC) was restricted in the daytime to carriages carrying high-status citizens such as senators and priests. And, surprisingly perhaps, visitors. It would seem that, even then, Rome was keen to encourage tourists!

However, selective bans for certain groups or categories is not the same as true rationing. The essence of rationing is that everyone gets some use of the road space some of the time, rather than some privileged drivers having all of it. It can be seen that there are really two main restrictive models: bans on certain categories of vehicle or sharing of the access.

Beijing

In 2008, Beijing installed road space rationing according to number plate in an attempt to reduce air pollution at the time of the 2008 Olympics. It lasted for two months, during which time cars with even numbers were allowed in on alternate days and cars with odd numbers on the other days. In return there was a three-month holiday from paying vehicle taxes. A 40% daily reduction in emissions from road vehicles was recorded.

The success of the Olympic rationing, in relieving traffic congestion, was sufficient for a limited version to be put in place indefinitely after the Games. 20% of vehicles were excluded on each weekday, rather than the 50% during the Olympics.

At the time of writing this article, the Mayor of London is also backing exclusion zones around the venues for the 2012 London Olympics.

Road rationing and vehicle restriction are alternatives to both road pricing – tolls – and congestion charging. Road rationing, in particular, is considered the most equitable, but is not necessarily the most popular.

Source: AQA 2012

Document J

WHAT CHOICE?

**'Choose road building, toll motorways, traffic pollution.
Choose tarmac, choose congestion. Choose climate change.
Choose a two-tier road network, choose an M6 expressway...'**



The Department for Transport (DfT) has announced a national consultation on a proposed new toll motorway, parallel to the existing M6, through Staffordshire and Cheshire.

However, details of this 'M6 Expressway' are few and far between. The precise method of tolling, the toll rates that will be charged, and the concession regime that will finance the road's construction remain shrouded in undecidedness. Indeed we're not even being treated to so much as an outline route for the road, for this is a consultation on the principle of using a tolling mechanism to build new roads and increase capacity on the road network.

If they can get away with this sort of scheme in the West Midlands/North West then they will use it to try and 'widen' other motorways across the UK, all in the name of giving the motorist more 'choice'.

Choice

'Choice' seems to be the theme of this consultation. Presumably, 'first class' road users will pay for the privilege of a free-flowing expressway while the 'plebs' will have to make do with the grotty old M6. The result would be a 'two-tier' road network through our countryside, dumping yet more congestion in towns and cities. Public transport users and those without access to a car will, as usual, be left behind in this wonderland of private 'choice'.

On 20th July the Government announced a refreshed transport White Paper entitled *The Future of Transport*, kicking off a national debate on comprehensive road-user charging. This is welcome, but road-user charging could take at least ten years to become a polluter-pays reality. While we support the principle of a variable charging mechanism at the point of use for all roads, we reject the principle of building new roads and then funding them through a toll mechanism.

Charging

Birmingham Friends of the Earth would like to see variable road-user charging introduced as part of a wider policy of traffic reduction. Drivers should be encouraged to think more about whether their journeys are really necessary, and whether the alternatives, such as public transport, cycling or walking would be more appropriate.

Variable road-user charging will differentiate between rural and urban areas, and reflect public transport availability along different corridors and at different times of day. The money raised should continue to be invested in the high-quality public transport required to give everyone a choice as to how they get about on a day-to-day basis.

The charge will also help to cut emissions of greenhouse gases from transport: good news for the DfT now that it has been given joint responsibility for the Government's carbon dioxide emissions reduction target. There will still need to be a tax on fuels, however, to reflect the pollution and greenhouse gas emissions released from burning fossil fuels.

Source: adapted from '(Not) Trainspotting', Birmingham Friends of the Earth, 1 September 2004

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Document K

Document (K) has been removed due to copyright restrictions.

The document was entitled @Solving Congestion by Professor P.B. Goodwin. The document in the case study was an adaption of a lecture by Professor Goodwin in 1997. The full version is available as a PDF on the UCL Discovery website <http://discovery.ucl.ac.uk/>

Goodwin, PB (1997) Solving congestion (when we must not build roads, increase spending, lose votes, damage the economy or harm the environment, and will never find equilibrium).
ESRC Transport Studies Unit, University College London: London.

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