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Behavioural Insights Toolkit

Social Research and Evaluation Division, Department for Transport

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Behavioural Insights Toolkit
Department for Transport

Using behavioural insights to achieve policy outcomes

Do you want to know more about behavioural insights and how they can be used in approaches to developing transport policy and delivery?

Are you looking for advice on how to develop policies and initiatives which aim to enable different choices?

Do you need to review existing approaches to see if they could be better delivered using behavioural insights, including 'Nudges'?

Are you looking for alternative options to using regulation?

Enabling behavioural choices is a central part of much of what DfT and other government departments do. Behavioural insights are potentially valuable in enabling government and its delivery partners (including local authorities) to achieve their objectives in more efficient and effective ways. However, much of the literature on behavioural insights is currently at a theoretical level and has often focused on policy areas other than transport.

The aim of this toolkit is to provide a practical tool for users in DfT and its delivery partners (including local authorities) wishing to apply the latest behavioural insights in the development of policies or initiatives in the transport context. Transport behaviour has its own specific challenges and to meet its objectives the Department often works with a range of third parties. The toolkit is designed to assist you in reviewing and developing policies and initiatives to ensure you are taking full advantage of the current evidence base and insights from behavioural theory. It takes the user through a step-by-step process of review and development and is structured around a checklist of questions to consider at each stage.

The toolkit takes a staged approach to help users stay on track and develop useful outputs. Where more in depth reading is available, links are signposted. The toolkit draws on external evidence and the six behaviour change think pieces published by DfT in January 2010[i].

The toolkit has been peer reviewed, both by behavioural insights experts working within government and by independent academics.

The Department would welcome feedback from local authorities and others on their experiences of using the toolkit to support the development of transport policy and delivery initiatives. Please send any thoughts, comments or queries you have about the toolkit to behavioural.insights@dft.gsi.gov.uk

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Introduction

This toolkit draws on insights from behavioural theory to provide guidance on designing transport policies and initiatives that enable behavioural choices which support policy objectives. Policy making has always involved dealing with human behaviour, and at the outset it is important to emphasise that behavioural approaches are not something fundamentally new. In many cases their real value lies in helping to find better ways of designing and delivering existing approaches, such as infrastructure changes, legislation, financial incentives and information provision, through the inclusion of relatively small-scale measures or 'Nudges' to make these approaches more effective. Some policies and programmes within DfT already reflect insights from behavioural approaches, and these are highlighted throughout the toolkit as examples of how the theory can work in practice.

It is important that government and its partners find ways of achieving policy outcomes in the most efficient way possible. Policies and initiatives which seek to enable particular choices will often involve working with others. This can mean that, although government has a key role in providing leadership on the collective direction of initiatives needed (e.g. encouraging economic growth, reducing congestion or carbon emissions, or improving road safety), it will often be the role of more local organisations to assist individual choices at the local level.

What makes people and organisations behave as they do?

It is important to remember that government cannot simply determine the behaviour of individuals, even if it wanted to. People behave as they do in response to the physical nature of the world around them, their capabilities and understanding of the world, and their perceptions - including their perceptions of themselves. In order for people to choose them, new behaviours need to seem:

- More advantageous – e.g. individuals' perceptions of costs and benefits
- More 'me' – fit with perceptions of self and/or aspirations
- More prevalent – increased awareness of who else is doing it
- More doable – increased confidence in ability to change
- OR their old behaviour needs to seem less of any of the above[ii].

It should be noted that there is a lack of evidence on how and why organisations make the behavioural choices that they do. As organisations are made up of individuals, it is likely that many of the same broad principles relating to individuals' behaviour also apply to the behaviour of organisations. However, there may be differences in terms of organisations' priorities and decision-making processes. This should be borne in mind when applying behavioural insights to policies focused on the behaviour of organisations.

Transport behaviour

We know that many transport behaviours are very complex and influenced by a wide range of factors. Travel choices are usually dependent on four main types of factors[iii]:

Collective objective factors: 'Hard facts' which relate to things bigger than the individual person, e.g. journey distances, availability of transport infrastructure / services, the weather, traffic volumes / speed, vehicle prices, fuel prices, ticket prices	***Collective subjective*** factors: Perceptions which are held at a group rather than an individual level, e.g. group cultures, social/cultural norms, cultural values, trust in organisations / services
Individual objective factors: 'Hard facts' which relate to a specific individual, e.g. personal capabilities / skills, resource constraints / income, knowledge / understanding / awareness, habit	***Individual subjective*** factors: Perceptions which relate to the individual person, e.g. personal norms, perceptions of identity and status, perceptions of costs, perceptions of safety / risk

Due to variations in the above factors, different individuals and groups will respond differently to changes in any of the factors. For example, the behavioural responses to increases in ticket prices may be different among high income households than among low income households. Similarly, a highly skilled, confident cyclist may respond differently to increases in traffic volumes than an inexperienced, novice cyclist.

Not only do different individuals vary, but the *same* individual can vary at different times depending on the particular 'role' or 'hat' she or he is wearing at the time e.g., commuter, parent, shopper, carer etc. This will relate to the different factors influencing the individual's behaviour at any one time. For example, a woman travelling to work in town may take the train because it is quick, cheap and easy. But the same woman travelling into town at the weekend may decide to drive because she is a parent, needs to transport very young children with her, and the lack of a lift at her local train station means she views travelling by train with very young children as a 'hassle'.

Therefore, two main types of evidence help us understand individuals' behaviour:

- Objective evidence (e.g. characteristics, circumstances, behaviours)
- Attitudinal evidence

Objective evidence can help us to understand the current (or past) characteristics, circumstances and behaviours of an individual or group. It relates directly to the *objective* factors (*collective and individual)* which

determine transport behaviour. Examples include data on household income, numbers and types of cars owned, frequency of travelling by bus, type of home location (urban vs. rural), or vehicle purchase price.

Attitudinal evidence can help us to understand what matters most to people and, more crucially, why it matters. It relates directly to the *subjective* factors (collective and *individual)* which determine transport behaviour. Examples could include views on whether travelling by train is expensive; whether cycling to work is safe; and whether buying an electric vehicle is 'normal' for someone like me.

We can use this evidence to understand the real-world barriers to particular choices, as well as the things which are likely to motivate them.

The two types of evidence (objective and attitudinal) can be used as a proxy for each other where the relationship between the two is understood. So for example, traffic speeds are associated with perceptions of safety[iv]; highest level of education is associated with environmental attitudes[v].

However, for some issues, an individual's attitudes may appear to contradict his or her actual behaviour, resulting in what is sometimes called the 'Attitude-Behaviour Gap' or 'Value-Action Gap'. An example of this is illustrated in the picture below:



Such apparent contradictions are likely to arise from other 'intervening' factors which determine both attitudes and behaviour. In this example, the relationship between income and education is likely to be the cause of the contradiction: higher levels of education are associated with higher concern about climate change, but also with higher income levels, which in turn are associated with owning larger vehicles and commuting longer distances.

Since multiple factors influence behaviour it's often necessary to implement multifaceted policy measures in order to enable different behavioural choices. So, for example, an initiative aimed at encouraging cycling to work may be more likely to succeed if it tackles both attitudes to cycling *and* objective factors, such as road traffic volumes and speeds, and the distances between locations.

This complexity means for any given policy challenge we need the relevant objective and attitudinal evidence to help us in thinking through:

- Which factors are relevant to determining the relevant behavioural choices (both current choices and those which support policy goals)

- What changes are therefore needed to enable individuals to make the choices which support policy goals.

Habit and Choice

As the toolkit will go on to discuss, behaviour can be divided into habitual behaviour and non-habitual behaviour. Habitual behaviour is routine, automatic and largely sub-conscious. In contrast, non-habitual behaviour is usually novel and the result of conscious thought and deliberation.

For example, travelling to a business meeting in an unknown location is often non-habitual. It requires the traveller to consciously consider options for how to travel, such as mode, distance, time, availability and costs of parking or public transport. Once such issues have been considered, the traveller consciously *chooses* how to behave.

In contrast, the journey to work is nearly always a habitual behaviour. It may originally have been a conscious choice when an individual first made the journey (e.g. when they first started their job), but the journey quickly becomes habitual: something the individual ceases to consciously *think* about unless forced to do so (e.g. when their car breaks down; or if there is a temporary closure of a rail or underground line).

Habit is a vital aspect of human behaviour. It is a reflection of the way the human brain quickly shifts the governance of any behaviour from the 'reflective mind' (the parts of the brain involved in conscious thought) to the 'automatic mind' (the parts of the brain which control sub-conscious actions). Without habits, humans would take far longer to do anything.

However, habit presents a key barrier to 'choice', because it prevents individuals from questioning their current behaviour and considering alternative behaviours. Evidence[vi] suggests nearly half of day-to-day behaviour is habitual. It is therefore important that we account for habit in the design of policies and initiatives that involve human behaviour.

Choice?

There is considerable debate about the extent to which individuals really can 'choose' how to behave. Mainstream economic theories have assumed that rational choices are the foundation of behaviour. However, other theories have suggested that individuals are often 'locked-in' to patterns of behaviour over which they have little control, due to physical, economic, social and cultural constraints. For example, is travelling by car in many instances really the result of choice? Or is it a result of a lack of choice, with journey distances, time constraints, and/or a lack of public transport infrastructure/services effectively constraining behaviour? Are many people 'locked-in' to car travel?

About this toolkit

This toolkit is designed to provide a practical, pragmatic set of tools to help with real world policy making in a transport context. It also includes a short review of the relevant theories, so that readers are aware of the principles behind the approaches being suggested. Further reading is signposted in the Bibliography at the end of the toolkit. The toolkit is structured around a checklist of seven key questions, which are intended as a guide to the different stages in developing a behavioural approach. However, in practice this is unlikely to be a linear process – there needs to be room for reflection, judgement and iteration – and users are encouraged to progress through the toolkit in the way that works best for them.

Section 1: Understanding what you are trying to achieve

Q1. What does the theory say about the factors and influences on behaviour?

Aim: To briefly review key theories about 'behaviour' and what determines it. We would strongly recommend reading **Appendix A** which sets out each of the theories in more detail.

'Theories' are ideas which aim to explain and predict things about the world. A number of disciplines including economics, psychology and sociology have developed theories to explain human behaviour. Different theories often overlap or build on the insights of each other.

Traditionally, mainstream economic theories adopted the simplifying assumption that human behaviour is largely driven by rational choices (see Appendix A: *Neoclassical economic (or 'rational choice') theories*[vii]). However, as the importance of systematically irrational behaviour was increasingly recognised, behavioural economics developed to examine its consequences[viii] (see Appendix A: *Behavioural Economic theories*[ix]).

Within psychology, theories vary from those which argue that behaviour is driven primarily by internal, conscious thoughts to those which highlight the importance of the external environment and of sub-conscious influences including habit and emotion (see Appendix A: *Psychological theories*).

Economic and psychological theories have tended to focus on individual agents (whether people or organisations). In contrast, sociological theories have tended to focus on behaviours or practices. Sociology holds that individuals' behaviour is determined by factors (e.g. transport infrastructure, economic conditions) which are 'bigger' than the individual, and it is therefore more important to understand what constitutes a behaviour (or practice), than to understand the individuals who carry out the behaviour. The sociological theory of *social practices* asserts that behaviour is made up of three main types of elements: *things* (objects; materials; tools); *skills*; and *images and meaning* (see Appendix A: *Sociological theories*).

While many behavioural theories focus on explaining behaviour at a single point in time, theories of change aim to explain how behaviour changes over time, highlighting how change is more likely at 'moments of change'.

The various theories are usually expressed in the form of 'models' which aim to account for key factors or elements which determine behaviour. No model is 'perfect' and the best insights are often provided when more than one model is applied to a particular issue[x]. Behaviour is complex, and models are deliberately simple. Models have usually been developed with a particular type of behaviour in mind and tend to work best at explaining and predicting that type of behaviour. 'Comprehensive models', which have tried to account

for all the factors which determine behaviour, have effectively proved inoperable[xi].

Many of the theories have been challenged over time as new evidence has emerged which questions their assumptions. Key shifts include:

- A shift away from theories which assumed that behaviour was largely a result of rational, conscious thought, towards theories which highlight the importance of more subconscious norms, emotions and habits
- A shift away from theories which assumed that behaviour could be explained by mental states (e.g. attitudes) alone, towards theories suggesting that external conditions (e.g. journey distances, traffic volumes) are just as important in determining behaviour.

While no theoretical model can ever be seen as 'perfect', together the theoretical models suggest a number of factors which are likely to be particularly important determinants of behaviour. These are as follows:

- **Attitudes** The attitudes people and organisations hold are a key influence on their subsequent behaviour, although they are rarely the only influence.
- **Emotions** While attitudes are the subject of a 'cold' rational calculation, psychology also allows for 'hot' evaluation of, or the emotional response to, a potential behaviour. Emotions play a part in the formation of attitudes ('first impressions count…') but can also influence our behaviour independently of thought ('heart versus head'). Being emotionally aroused in certain ways (e.g. fear, pity) can also change the way we then think and make choices (as highlighted in behavioural economics).
- **Social, cultural and moral norms** People, and also organisations, can be strongly influenced by the behaviour of others, from their friends and peers to society as a whole. Even if a change is beneficial to them individually, they may still be deterred from changing if it means going against the prevailing attitudes and behaviours of those around them.
- **Structural factors** These are external conditions beyond the immediate control of individuals and most organisations. They can include household income, household make-up (e.g. presence of children), and presence and nature of infrastructure. Structural factors are particularly pertinent in transport because behaviour in this area is often mediated by the availability, accessibility and location of infrastructure – from the provision of bus services in rural areas to the condition of pavements and roads in built-up urban areas.
- **Cost** The relative costs of different behaviours influence day-to-day transport choices of both individuals and organisations. In particular, businesses are strongly led by market forces. Other important considerations are that individuals do not always perceive the relative costs of different behaviours accurately due to a lack of knowledge and awareness; and that humans tend to prioritise short-term costs and benefits over longer-term considerations.

- **Habit** By their nature many transport behaviours (e.g. travelling to work) are ones that are repeated over time, and as such can become habitual. Repeated behaviour often becomes automatic, meaning that people, and decision-makers within organisations, do not routinely stop to weigh up the pros and cons each time they undertake the behaviour. This makes habitual behaviour much more of a challenge to change, and there is a danger that even after making an initial change, people and organisations will 'backslide' and revert to their habitual behaviour over time.
- **Knowledge and awareness** This can act as a barrier in its own right, and also act to accentuate or distort other barriers. At a simple level if people or organisations are not aware of the relative benefits or disbenefits of different behaviours they are unlikely to seek to change it. More indirectly, a lack of knowledge and awareness can result in misconceptions about the behaviour of others, over or under-estimates of the extent of structural barriers, and inaccurate assessments of the relative costs of different behaviours.
- **Capability and self-efficacy** Individuals may be prevented from adopting a new behaviour if they do not think they have the capability to do it – either because of a perceived lack of skills or resources, or a shortage of time. Similarly organisations, particularly smaller ones, may have been convinced of the potential benefits of a change in behaviour, but still be prevented from changing because they believe they lack the skills or resources in their workforce to effectively enact these changes.

Q2. Which behaviours am I interested in, and why?

Aim: To identify and understand the behaviours which are relevant to your policy objectives

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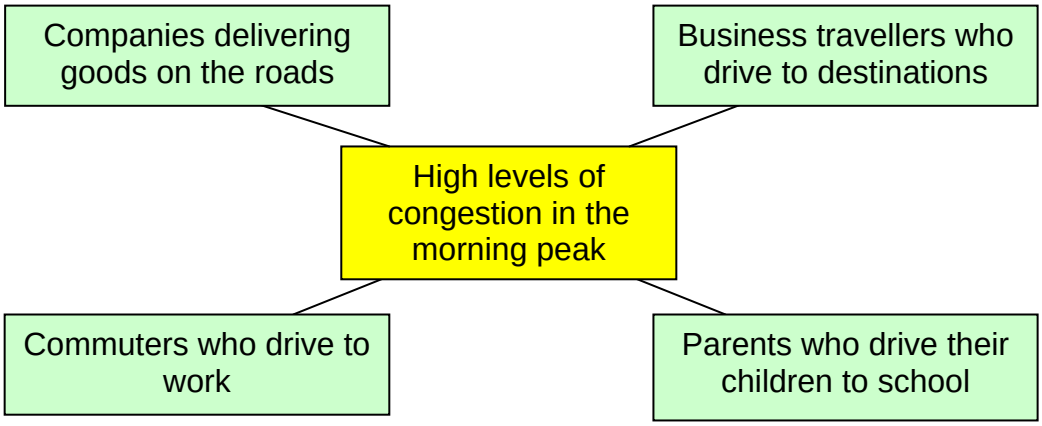
As noted previously, behavioural approaches are of most value when they are focused on specific behaviours. This section gives examples of how to think through a policy problem, using both an economic/psychological approach (focussed on individuals) and a social practices approach (focussed on behaviours). Either approach can be used, and it is likely that the approach that is most useful will vary depending on the nature of the problem.

Defining what your policy is aiming to achieve

Start with the policy problem you are trying to address and narrow this down to a policy objective.

For example, to address the problem 'high levels of congestion in the morning peak', start by mapping out the different elements of the problem.

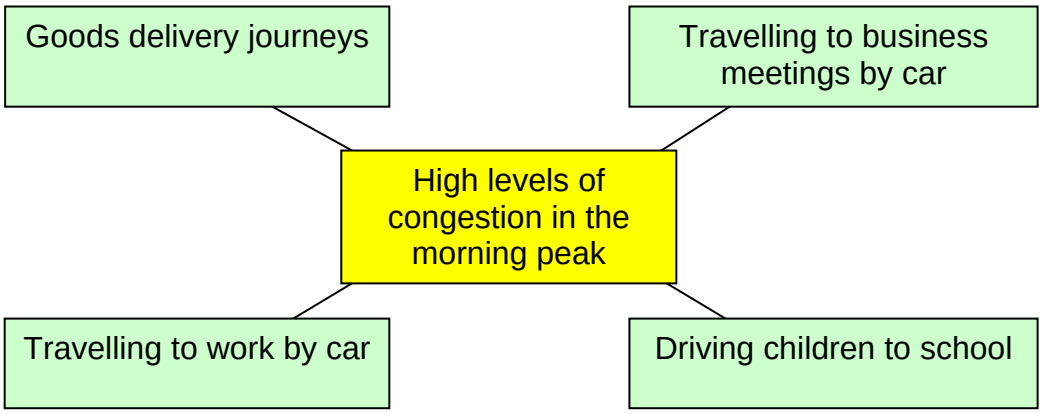
A psychological or economic approach would involve mapping out the types of individuals using the roads during the morning peak, as follows:



This would help you to identify a range of possible policy objectives, for example:

1. Reduce the number of people driving to work during the morning peak
2. Reduce the number of business people driving to meetings during the morning peak
3. Reduce the number of children being driven to school during the morning peak
4. Reduce the number of companies transporting goods on the roads during the morning peak

In contrast, a sociological (social practices) approach would lead you to focus on the different kinds of practices which make up the problem of high congestion levels during the morning peak, as follows:



This would help you to identify a range of possible policy objectives, for example:

1. Reduce the number of instances of 'travelling to work by car' during the morning peak
2. Reduce the number of instances of 'travelling to business meetings by car' during the morning peak
3. Reduce the number of instances of 'driving children to school' during the morning peak
4. Reduce the number of instances of 'goods delivery journeys' during the morning peak

Prioritising objectives

The next step is to select which objective(s) you wish to prioritise.

You may wish to prioritise objectives according to your understanding of the impact of each type of journey in question. A key question is therefore:

How prevalent are each of the current behaviours which contribute to the problem I wish to resolve?

From an economic or psychological perspective, answering this question involves establishing how many **individuals** are engaged in each of the behaviours outlined above (driving to work, driving to business meetings, delivering goods, and driving children to school during the morning peak)

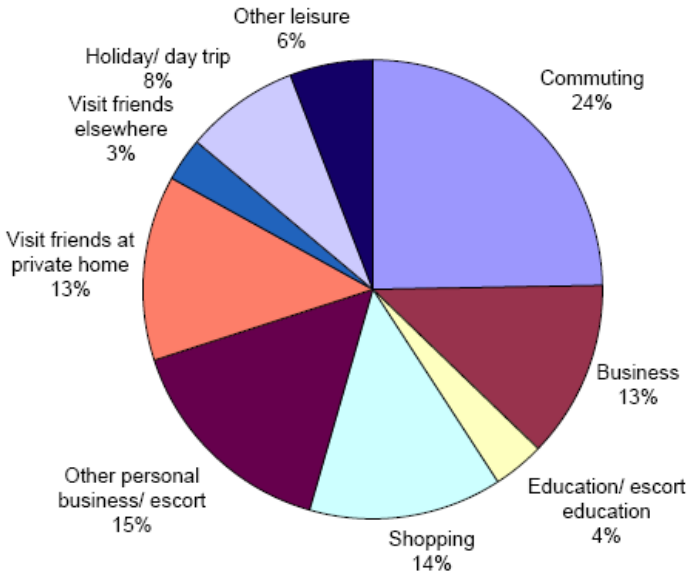
From a sociological perspective, answering this question involves establishing how **prevalent the practice is**. For example, during the morning peak, how many journeys to work are made by car? How many business journeys are made by car? How many goods delivery journeys are made by car/van/lorry? And how many instances of parents driving their children to school are there?

If possible it may also be helpful to describe trends over time in order to get a picture of the ways in which the behaviour is already changing. For example:

- From an economic/psychological perspective - how does the number of people driving to work during the morning peak compare with, say, 5 or 10 years ago?
- From a sociological perspective - how do the number of journeys to work by car compare with 5 or 10 years ago?

You may also wish to prioritise objectives according to other strategic priorities, such as economic growth or carbon emissions arising from travel in the morning peak. As shown by Figure 1, 'commuting' and 'business travel' account for particularly large proportions of domestic travel carbon emissions.

Figure 1: Estimated CO2 emissions from all modes of passenger transport by journey purpose, GB, 2002/2006 average[xii]



Therefore you may decide to prioritise the first two objectives (reduce the number of people driving to work during the morning peak; and reduce the number of business people driving to meetings during the morning peak) to maximise the impact that your initiatives have on reducing carbon emissions.

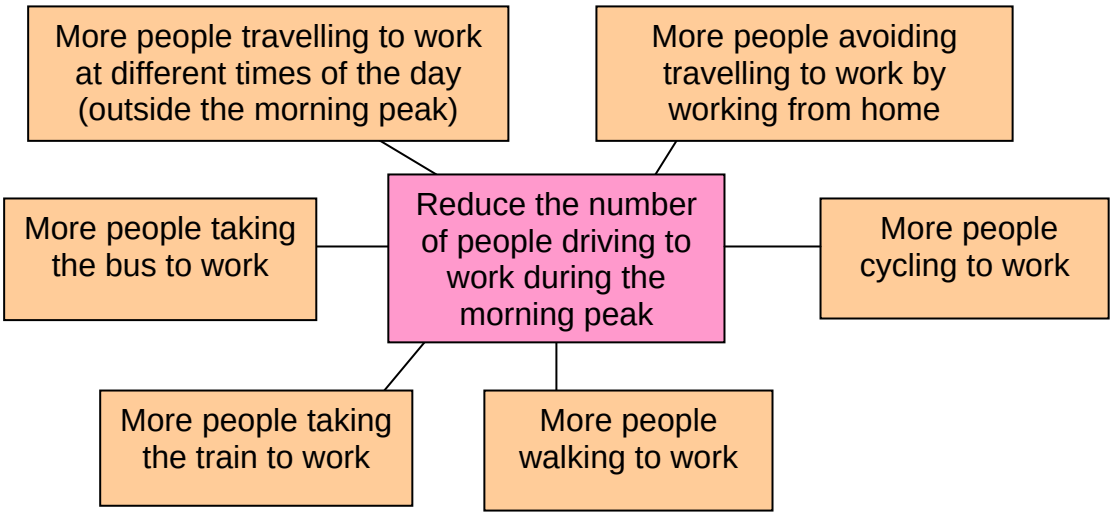
Accordingly, you may decide that initiatives to 'reduce the number of children being driven to school during the morning peak' are of lower importance (at least from the perspective of reducing carbon emissions) because such journeys make up a relatively small proportion of total domestic carbon emissions. On the other hand, you may have evidence that these types of

journey are important for economic growth objectives and therefore are worth tackling. This is why it is important to be clear about your policy objectives and the behaviours that affect them.

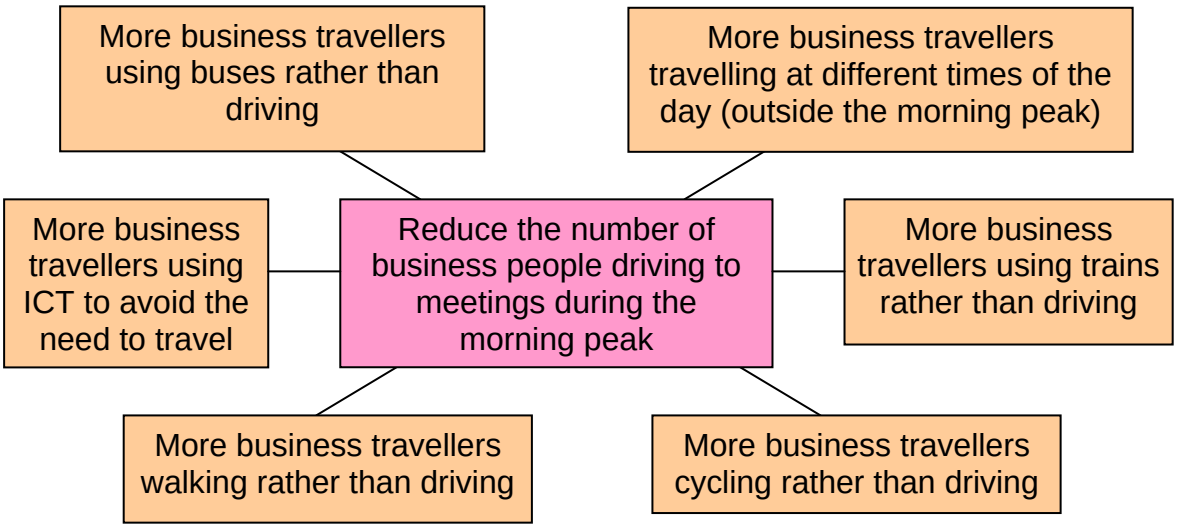
Identifying policy options to meet your objectives

Once you have selected the objective(s) you wish to prioritise, map out the policy options which could help you to achieve the objectives you have prioritised.

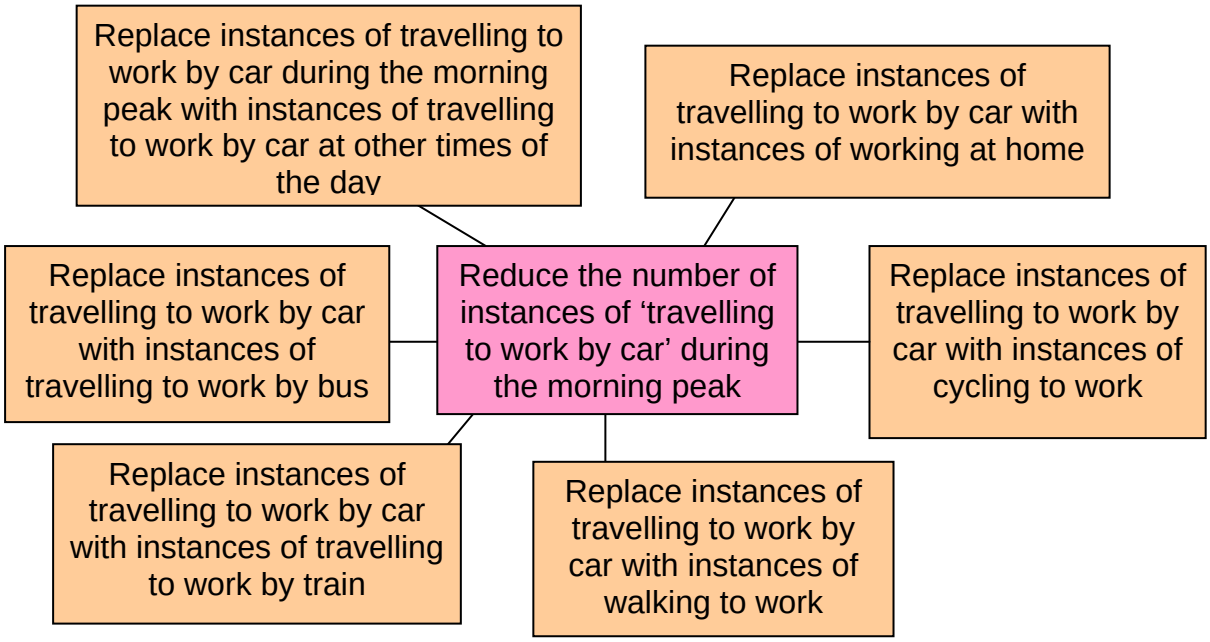
So for example, for 'reduce the number of people driving to work during the morning peak' (an economic/psychological approach objective), the map of policy options could be as follows:



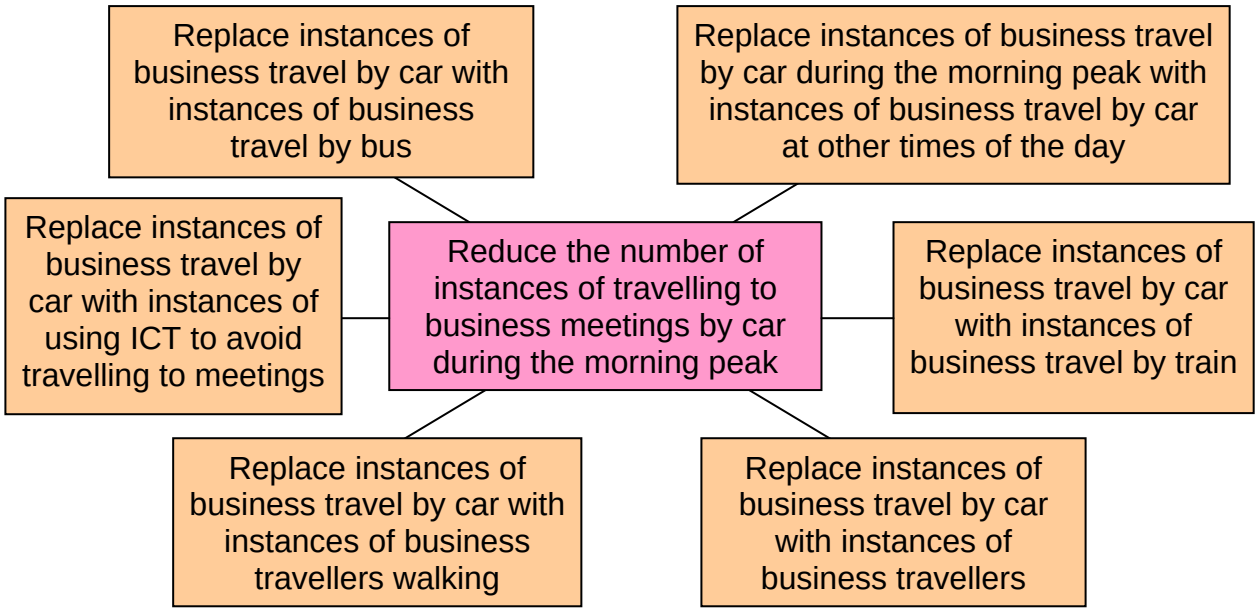
And for 'reduce the number of business people driving to meetings during the morning peak', the map of policy options could be as follows:



For 'reduce the number of instances of travelling to work by car' (a social practices approach) the map of policy options could be as follows:



And for 'reduce the number of instances of travelling to business meetings by car' the map of policy options could be as follows:



A potential **pitfall to avoid** at this stage is conflating policy options which may seem related but which are actually associated with a very different set of determining factors.

So for example, it may be tempting to lump together 'more walking…' and 'more cycling…' into one choice of 'more walking / cycling to work'. But the evidence base on walking and cycling highlights how the two activities are very different and the issues which need to be addressed to enable walking are different from those which need to be addressed to enable cycling.

Similarly, it may be tempting to lump together 'using buses…' and 'using trains…' into one choice of 'more people using public transport to get to work.' But again, the evidence base suggests buses and trains are different, with different issues which need to be addressed in order for more people to use them (or for more bus and train journeys to be made).

Thinking through all the different issues related to different modes of transport could produce a very complicated picture. It is therefore better to start by dealing with each choice separately. In later stages, it may be helpful, or indeed necessary, to consider issues around the integration of policy options, for example an 'end to end journey' which may require people to walk, use a bus and use a train to get from their home to their workplace. But to start with, it is better to focus on each choice separately in order to keep things simple.

Defining the factors (or elements) which determine (or constitute) the behaviours / practices which are relevant to your policy options

As discussed in the previous chapter, the various psychological and sociological models all agree that behaviours (or 'practices') are determined by (or made up by) a complex interaction of different factors or elements.

Reviewing what is currently known[xiii] about the factors which determine individuals' behaviour (or the elements which make up particular social practices) will provide clues as to the types of policy and delivery initiatives that will be most effective at supporting particular policy options.

The following are the kinds of questions that will help build up a detailed picture of current behaviour / practices. They are not intended to be definitive but should give a guide to the type of areas to look for evidence on. The extent to which these can be fully addressed will also vary by policy area and by the availability of data on different types of transport behaviour. To reflect the main theoretical perspectives discussed, two approaches are outlined: an economic/psychological approach; and a social practices approach.

An economic / psychological approach to identifying the factors which determine behaviours

As discussed previously, both economic and psychological approaches tend to focus on the individuals doing a behaviour. A key question is therefore:

Who does and doesn't behave in this way?

This can include (for example):

- Exploring the characteristics, circumstances and attitudes of people who currently do the behaviour you would like fewer people to choose (e.g. those who currently drive to work during the morning

peak; or those who travel to business meetings by car during the morning peak). For example:

Characteristics: *What is the age, gender, income, social grade make-up of those who drive to work during the morning peak?*

Circumstances: *What is the distance between home and workplace for those who drive to work during the morning peak?*

Attitudes: *How do those who drive to work during the morning peak feel about it? How do they feel about the possible alternatives (e.g. cycling, walking or driving to work at other times of the day?)*

- Exploring the characteristics, circumstances and attitudes of people who currently do the alternative behaviours you would like more people to choose (e.g. those who already get the train to work; or those who already use ICT to reduce the number of business journeys they make). For example:

Characteristics: *What is the age, gender, income, social grade make-up of those who get the train to work?*

Circumstances: *What is the distance between home and workplace for those who get the train to work?*

Attitudes: *How do those who get the train to work feel about it / why do they say they do it?*

As discussed previously, it will be important to look at both objective and attitudinal evidence in order to 'see the world through the eyes' of those whose behaviour you would like to influence[xiv].

Once you have reviewed the available evidence on individuals' characteristics, circumstances and attitudes, it may be useful to look at how individuals' attitudes relate to their characteristics and circumstances, as a way of understanding what may be determining their attitudes.

For example, is an individual's age group (or life-stage) associated with their likelihood of having positive or negative attitudes towards getting the train to work? Are an individual's attitudes towards the idea of getting the train to work related to how far away they live from where they work? Taking a step back and taking a *holistic* view of what the data on attitudes, characteristics, circumstance seem to be saying should help you to understand what the main determining factors appear to be.

As part of this, it may be helpful to note down what appear to be the **key influences** on the behaviour of the individuals you are interested in, using something like the table in **Appendix B**.

Once you have mapped out the factors which appear to be the key influences on the behaviour of the individuals you are interested in, a key task will be to identify **key subgroups of individuals** who differ in terms of their characteristics, circumstances and attitudes but who do the same behaviour. It is worth learning as much as possible about these groups, as the factors which determine their behaviour may be quite different.

Within any population there are likely to be groups with quite different attitudes, characteristics or circumstances, who may respond better to different types of policy or delivery initiative – or who may not be in position to respond at all.

For example, some may live near to where they work but drive to work simply because they see it as the 'normal' thing for someone like them to do. Others may live too far away from where they work for walking and cycling to be viable alternatives to driving, and not live in a location served by bus and train services which run directly to their workplace. And some groups may live too far away to walk and cycle to work *and* have mobility difficulties which prevent them from walking, cycling and using public transport.

Among those who already do the behaviour(s) you would like more people to choose, there may be sub-groups whose current behaviour is the result of different factors. For example, some may cycle to work because they live relatively near and it is the quickest, easiest and cheapest way of getting to work. Others may live considerably further away but still cycle to work because it is a way of keeping fit and maintaining their self-image or 'role belief' of themselves as a dedicated cyclist.

Understanding such issues will help you to work out what the 'conditions' are which appear to facilitate the policy option you are developing, both in general and within particular sub-groups.

Segmentation is one technique that can be used to identify sub-groups within a population of interest. DfT has produced a nationally-representative segmentation of the adult (age 16-plus) population of England's attitudes to climate change and transport choices based on a wide range of evidence on individuals' characteristics, circumstances, behaviours and attitudes[xv]. Similar

segmentations could be conducted to (for example) identify sub-groups within a specific (local) population.

A sociological approach to identifying the factors which determine behaviours

As discussed previously, sociological approaches tend to focus on the behaviours (or 'social practices') themselves rather than the individuals who carry out the behaviour. A key question is therefore:

What are the different elements which make up the practices you are interested in?

Using the social practices model (discussed earlier), you could map out the different elements of the behaviour you would like fewer people to choose, for example:

Driving to work during the morning peak

Things	• A car and fuel for the car • Money to pay for the car and the fuel • A valid driving licence • A suitable road • A place to park the car at or near the workplace • A human body which is capable of driving (e.g. does not have disabilities which prevent driving) • Homes and workplaces which are near enough to one another to permit driving to work within the time available • Employers' formal rules regarding working hours • Other time constraints (e.g. partners' working hours)
Skills	• An ability to drive • Knowledge of which route to take • Knowledge of how to maintain a car
Images and meaning	• Belief that it is 'normal' for someone like you to drive to work • Belief that it is 'normal' for someone like you to travel to work during the morning peak • Belief that it is 'normal' for you to be home at certain times (e.g. to have breakfast or dinner with your family) • Belief that it is safe enough for you to drive to work during the morning peak • Belief that you should arrive at work at (or by) a time which requires you to travel during the morning peak

And similarly, you could map out the behaviours which you would like more people to choose, for example:

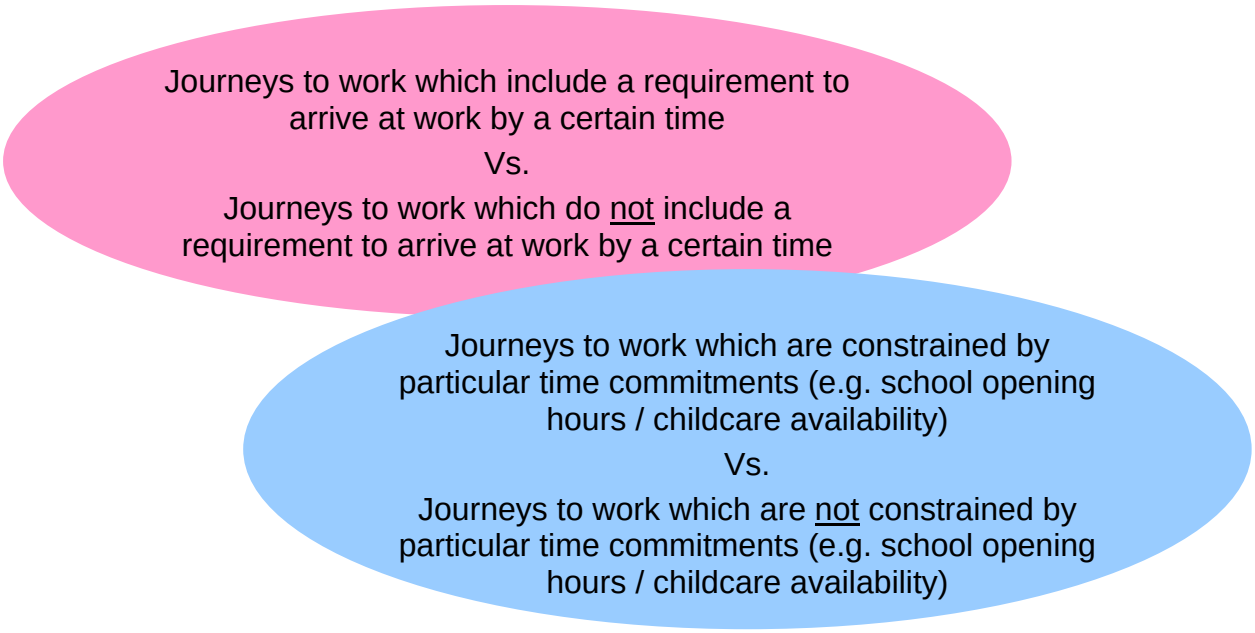
Driving to work at different times of the day (outside the morning peak)

Things	• A car and fuel for the car • Money to pay for the car and the fuel • A valid driving licence • A suitable road • A place to park the car at or near the workplace • A human body which is capable of driving (e.g. does not have disabilities which prevent driving) • Homes and workplaces which are near enough to one another to permit driving to work within the time available • Flexible or re-arranged working hours (e.g. allowing flexibility to arrive earlier/later or set hours which require you to travel outside the morning peak) • Flexible or revised arrangements (e.g. flexible/revised partner's working hours)
Skills	• An ability to drive • Knowledge of which route to take • Knowledge of how to maintain a car
Images and meaning	• Belief that it is 'normal' for someone like you to drive to work • Belief that it is 'normal' for someone like you to travel to work <u>outside</u> the morning peak • Belief that it is 'normal' for you to be home at different times (e.g. to have breakfast or dinner with your family earlier or later; to miss having breakfast or dinner with your family) • Belief that it is safe enough for you to drive to work <u>outside</u> the morning peak • Belief that you can/should arrive at work at (or by) a time which requires you to travel <u>outside</u> the morning peak

As you map out the different elements of the practices, a key question is:

What different forms does the behaviour or practice take?

Similar to the identification of different sub-groups in the economic / psychological approach, this issue is about identifying variation. But in social practices, it is about identifying variations in the practices, for example:



Doing this will help you to build up a picture of the main forms that each practice you are interested in takes. In turn, this will help you to:

- Identify and understand the elements which make-up each form of the practice.
- Compare the various current forms of the practice in terms of (for example) how 'easy' or 'difficult' it would be to enable particular forms of the practice.

Summarising your findings

Whether you have followed the economic/psychological approach or the sociological approach, by this stage you should have identified:

- A list of key factors which determine specific behaviours among individuals OR a list of key elements which make up specific practices
- A list of key sub-groups of individuals which differ in terms of their behaviour and the factors which determine their behaviour; OR a list of different forms of practices which differ in terms of the elements which make them up.

This is a good point at which to start thinking about:

- *If following an economic / psychological approach:* which **sub-groups** of individuals you want to focus on; which may be of secondary interest; and which may be outside the scope of your policy completely
- *If following a sociological approach:* which **forms of practice** you want to focus on; which may be of secondary interest; and which may be outside the scope of your policy completely

You could use the template table in **Appendix C** to classify the subgroups / forms of practice you identify.

Section 2: Understanding how to achieve your objectives

Q3. What behavioural insights can I use to achieve policy objectives?

Aim: To identify what approaches can be used to address key influences on behaviour, and achieve the objectives of your policy.

Having outlined the theory and mapped out the factors or elements which need to be accounted for when enabling particular behaviours, this question brings us back to consider how this can be applied to achieve policy or delivery objectives. The aim is to draw on evidence and examples of 'what works' from initiatives in transport and other areas to enable you to start thinking about what approaches might work for your policy objective(s).

Addressing Structural Factors

'Structural factors', or the physical and cultural factors which influence and constrain individuals' behaviour, are fundamental determinants of transport behaviour. They relate closely to the social practices 'things' group of elements that make up a behaviour or practice and the 'external conditions' referred to in some psychological models of behaviour.

For example, the distances between locations, the availability (or lack) of transport infrastructure, the speed/volume of traffic on roads and the cultural constraints (e.g. working hours, school/nursery opening hours) placed on individuals all define (or constrain) the extent to which people can 'choose' how to behave. Many individuals simply cannot 'choose' to cycle twenty miles to work every day, as they lack the physical resources (e.g. level of physical fitness) and time resources needed to do so. Similarly, people cannot 'choose' to switch from car travel to public transport on a given journey if no public transport services exist that enable them to make the journey within the time and money resources available. And most employees cannot pick and choose when to travel to work: they are required to be at a certain place during a fixed number of hours; and many people need (and want) to arrive home by a certain time to care for their children.

Inevitably, many of the policy options you consider as ways of addressing your policy problem will therefore require you to:

- Work with those who control the structural factors which constrain behaviour (e.g. working with planners to ensure residential developments are well-served with cycling and walking infrastructure; working with industry and land owners to ensure charging infrastructure is available for plug-in vehicle owners; working with bus and train operators to ensure integrated or smart ticketing systems are established to ensure smooth end-to-end journeys for those travelling by public transport)
- Invest in new or upgraded infrastructure (e.g. new public transport infrastructure; cycle lanes; etc) to increase the feasibility of behaviours.

In many cases, it is likely that investment in providing the physical infrastructure needed to enable particular transport choices will need to be accompanied by 'soft' measures designed to provide the attitudes and skills required alongside infrastructure to enable particular behaviours. For example, the Sustainable Travel Towns programme employed a combination of measures including personal travel planning, public transport marketing and information, cycle lanes and bus service improvements to effectively increase sustainable travel in three demonstration towns[xvi].

When addressing structural issues, it is important to account for the other types of factors or elements which determine or make up transport behaviour (e.g. attitudes, knowledge/awareness, habit and other behavioural tendencies) to ensure that the value and impact of initiatives and spending can be maximised. For example:

- **Informing the design of infrastructure** that promotes better, safer use of what already exists. For example, existing features of road design such as the use of gateways, sightlines, coloured or textured road surfaces, already 'prime' or 'Nudge' people to drive in a certain way, and there may be more scope to apply these principles in other ways. Similarly, the location or positioning of new infrastructure can be very important: e.g. introducing secure cycle parking in prominent positions at workplaces could act as a prompt to cycling to work by making individuals consider cycling to work and raising their awareness that others do cycle (thereby making cycling to work seem more 'normal').
- Informing information provision and marketing to **encourage wider use of existing infrastructure**. Structural barriers are partly about what people *perceive*. For example, non-bus users consistently rate bus provision in their area lower than bus users living in the same area – due in part to a combination of low awareness and some negative preconceptions. Well designed strategies to improve awareness and perceptions of existing infrastructure (see sections on attitudes and knowledge and awareness) may help to mitigate the need in some cases for new infrastructure.
- Providing information at **opportune moments** to ensure best use of existing infrastructure. For example, suggesting alternate routes ahead of an area of heavy congestion during a car journey.

Attitudinal factors may also need to be addressed in order for structural factors to be addressed. For example, public opposition to a structural initiative may act to prevent the initiative going ahead. Understanding and accounting for the attitudinal issues relating to structural issues may be just as important as understanding the structural issues themselves.

Addressing Attitudes

Particular attitudes can be an essential aspect of particular behaviours, especially in cases where existing attitudes represent deeply-held values or beliefs. Attitudes can also form the basis of **public acceptability**, which refers to attitudes operating at the collective, societal level. These can affect the

success of a policy or initiative as well as political leaders' willingness to sanction a particular policy or initiative.

Evidence suggests attitudes are often a reflection of external conditions, or the 'structural factors' discussed above. For example, increases in the speed and volume of traffic are associated with a decline in levels of walking and cycling and associated changes in attitudes[xvii]. If an individual expresses the attitude 'I think cycling on the roads is dangerous', this may simply reflect the fact that he or she lives in an area with roads that are full of fast moving traffic, rather than an inherent view held by the individual person regardless of where they live. If the speed and volume of traffic in that individual's area were to be reduced, his or her attitudes may shift accordingly.

Similarly, in some case changing the external conditions can have a corresponding impact on public attitudes. An example of this is the London Congestion Charge, where levels of public support for the scheme increased after it had been launched[xviii].

Targeted **communications and marketing** can be effective, over time, in bringing about a change in attitudes. It can do this by either changing the individual's understanding of the costs/benefits of a behaviour and/or by influencing the social meaning that is attached to the behaviour. For example, campaigns by DfT, including THINK!, have used social marketing to address attitudes to drink driving, and have been credited with enabling a shift towards acceptance that drink driving is 'anti-social.'[xix] Key features of campaigns that have been successful in changing attitudes are:

- They are targeted at particular groups in the population, and carry a message that is relevant and meaningful to that group. Campaigns that have sought to communicate a universal message applicable to all have generally had less success in shifting attitudes.
- They highlight the implications of current and or future behaviour for the individual (whether this is a person or an organisation). For example, publicity targeting drink driving has emphasised the risk of personal injury, injuring someone else, losing one's license, being fined, or having to pay more for insurance.
- They are introduced alongside measures that address other barriers to change. For example, local campaigns aimed at changing attitudes to public transport have generally only been successful in cases when they have been accompanied by visible improvements to public transport infrastructure. If undertaken in isolation, communications aimed at changing attitudes may inadvertently lead to disaffection and an entrenchment of current attitudes.
- They use an appropriate **messenger** to communicate information. Individuals are affected by the perceived authority of the messenger, with individuals more likely to respond positively to a message if they perceive the messenger to be more authoritative[xx].

Communications can also harness existing attitudes and use them as a motivation for changing behaviour. The key challenge is to identify the 'right' attitudes to focus on, accepting that this may vary for different groups of the population. For example, the first generation of Car Club schemes were promoted as community-centred initiatives with a strong environmental ethos – a message that had limited appeal to the majority of drivers. More recent marketing has focused on convenience and cost savings and the natural fit of car clubs with a free-wheeling, unencumbered, flexible, city-dwelling lifestyle.

Addressing Social and Cultural Norms

There are different ways that norms can either be challenged, or actively used, to promote particular behaviours:

- Providing **feedback** which allows people or organisations to compare their current behaviour against others – either by encouraging them to adopt particular behaviours to match that of their peers, or by rewarding people or businesses for out-performing their peers. The 'Most of Us Wear Seatbelts' campaign in Montana was based on communicating the message that 85% of car users used seatbelts, reinforcing it as the 'norm' behaviour. As a result of the campaign the self-reported use of seatbelts significantly increased[xxi].
- Making individuals that have already adopted particular behaviours more visible to other people or organisations in the same peer group – for example by disseminating **case-studies** or **testimonials**. Simply knowing that someone else has already adopted a change in behaviour is one part in helping change the behaviour of others, and over time, helping to change the norms of the group as a whole. In addition, **networks** or **forums** can be effective in helping people and organisations to make connections with others who are seeking to make the same changes in behaviour. This issue also relates to the point raised earlier in regard to structural factors: that **positioning infrastructure** in highly visible locations can help to raise awareness of those who have already adopted a particular behaviour, and so change the associated social and cultural norms.
- Recruiting **influential and credible figureheads** who are respected by the members of a peer group can also be effective in 'normalising' new behaviours. They can help to spread key messages and to provide social proof of the acceptability of a particular behaviour. Conversely credible counter-champions may also emerge who campaign against certain measures – it is worth thinking through likely sources of opposition and how differences in opinion can be overcome at an early stage.
- Central Government, local authorities and other organisations and individuals seen as 'leaders' can also play an important leadership role in **exemplifying**[xxii] the behaviours they are trying to promote. Although members of the public may not see high-profile representatives of government or local authorities as part of their immediate peer group, they will want to see that they practise what they preach.

Addressing Knowledge and Awareness

Providing information about the benefits of particular behaviours and/or the disbenefits of other behaviours is not a new approach to promoting particular behaviours. However, behavioural insights have highlighted ways in which information provision can be designed and delivered to maximise its impact:

- Information that communicates a **simple message**, using concepts and a language that the intended audience can understand, will minimise the risk of disengagement. Who communicates or delivers information is also important, and people and organisations are more likely to listen to a **trusted, independent source**. Information provision is not necessarily a job for government or local authorities, and there are advantages to an '**extended sales force**' of external individuals and organisations performing this role.
- People and organisations are more likely to act on information about the consequences of a new or existing behaviour for them individually than for society as a whole. For example, evidence from evaluations of Smarter Choices type schemes has consistently found that one-to-one **personalised travel planning** – during which individuals are provided with personally tailored travel advice about their day to day journeys – is one of the most effective measures for enabling particular travel choices. Evidence from outside transport also suggests information about the impact of a specific behaviour by the individual on CO2 emissions is more effective in encouraging particular behaviours than information pitched at a national or global scale.
- Delivering information at the point when decisions are made increases the likelihood of it being acted on. **Real time information**, either for public transport users or for road users through variable message signs and sat-nav systems already gives the opportunity for people to change their travel plans to avoid delays and areas of congestion. It has been suggested that onboard technology could be used to give drivers real-time feedback on the safety of their driving[xxiii]. Relatively simple visual or audio **prompts**, for example posters, stickers, electronic signs or email reminders can also be effective in reinforcing previously communicated information at key points, e.g. when turning on or off their engine or purchasing a rail ticket. Prompts need to be delivered near where the desired behaviour takes place and need to be self explanatory (for example a 'switch it off' sticker by a light switch).
- The **language and concepts** used to convey information can influence whether it has an impact on individuals' behaviour. For example, it has been suggested that simply displaying fuel consumption as 'gallons per hundred miles' rather than 'miles per gallon' makes it easier for people to conceptualise the relative efficiency of different vehicles[xxiv].

Addressing Skills, Capability and Self-Efficacy

Addressing self-efficacy is partly about providing individuals or organisations with practical skills and support to enable particular behaviours, and partly about raising their confidence in their ability to adopt a particular behaviour.

- The provision of **practical tools and guidance** can be effective in equipping your target population with the skills necessary to perform a behaviour. For example the Freight Best Practice programme offers a range of free publications to help freight operators improve their efficiency. This has included guides, case studies, software and seminars on topics such as saving fuel, developing skills, equipment and systems, operational efficiency and performance management[xxv].
- **Networks** or **forums** can be effective in allowing individuals and organisations thinking about adopting a behaviour to learn from each other – see discussion of social and cultural norms (page 25). **Case-studies** or **testimonials** of individuals or organisations who have already adopted a behaviour can also be effective in giving others confidence in their own ability to adopt it.
- Changes to the **choice architecture** can also be introduced to make a given behaviour simpler and easier, so that individuals or organisations do not need to invest as much effort and time to adopt them. One example of this is the DVLA's Electronic Vehicle Licensing service which now allows users to pay vehicle excise duty online or over the phone, and automatically checks MOT and insurance details so the user does not need to provide these themselves.

Addressing Cost

The key messages from Behavioural Economics and evidence of what works in addressing the financial factors which determine behaviour include:

- **Take account of behavioural insights such as loss aversion and discounting the future when designing incentives**[xxvi].
- **Use simple pricing structures** in the first instance, as some people disengage from complexity – meaning they either do not respond to an intended incentive or disincentive at all, or select an option that is not suited to their needs. For example, previous research into rail fare complexity found that participants, faced with a wide choice of different tariffs, often selected one which was not best suited to their consumption pattern[xxvii]. This in turn can reinforce rather than negate the perceived financial barriers to certain behaviours.
- **Frame** the way a particular behaviour or choice is presented. For example, present reducing fuel consumption as 'saving money'.
- **Minimise the initial costs of adopting a new behaviour**. Even in cases where a new behaviour offers financial benefits to an individual or organisation over time, the tendency to base decisions on short-term considerations, combined with high upfront costs, is likely to deter many from adopting certain behaviours. The Plug-In Car Grant is an example of

a policy aimed at addressing this, by offering a grant for 25% of the purchase price of eligible vehicles (capped at £5,000) for individuals and businesses.

- **Make it easier for individuals and businesses to consider long-term costs and benefits** when they make decisions about their behaviour. For example price comparisons of different vehicles which are based on the purchase price *and* fuel costs for a set time period or mileage may be one way to encourage the purchasing of low emission vehicles.
- **Be careful about putting a price on something people already do voluntarily**. Studies have shown that monetary incentives can 'crowd out' or dampen intrinsic motivations such as altruism, civic duty and self-worth. Over time people can ultimately opt out of 'good' behaviour if a financial reward is subsequently attached[xxviii]. This underlines the importance of understanding the attitudes of different groups within a target population and reflecting this in the design of your approach.

Addressing Habit

As noted previously, habit prevents individuals from even considering alternative behaviours. Addressing habit is challenging and is likely to require intensive and possibly ongoing initiatives, using some of the approaches already outlined above and one or more of the following:

- **Deliberative approaches** aim to encourage individuals to take a step back from behaviour they do on a habitual basis and reflect on their reasons for doing it in more depth. Focus groups can be used to confront habitual behaviours by raising them to the conscious level, and highlighting any internal inconsistencies or contradictions. Participants can also be presented with new information which may challenge any underlying assumptions that help to reinforce their existing behaviour. Deliberative approaches can be resource intensive, and difficult to undertake with a large number of people, but evidence suggests they have been effective in addressing the driving behaviour of specific groups of motorists, for example[xxix].
- **Public commitments**. Research has shown that individuals are more likely to make and sustain a change in habitual behaviour if they have made a verbal or written commitment to do so, and shared this with others. In the field of health behaviour change, for instance, NICE has highlighted the importance of participants making a commitment to adopt health-enhancing behaviours by setting and recording goals to undertake clearly defined behaviours, in particular contexts, over a specified time[xxx].
- **Ongoing support**. In any change in behaviour, and especially habitual behaviour, there is a danger that people or organisations will, after a certain period of time, revert back to their old behaviour. This highlights the potential value of providing some ongoing form of support after an initial change in behaviour.

- **Accounting for stages of change**. Adopting any new behaviour can involve a series of stages including Contemplation, Preparation, Action, Maintenance and Termination (see page 53 in **Appendix A**).
- **Moments of change**. For all approaches that address the habitual behaviours, timing can also be important. People and organisations are likely to be most open to changing habitual behaviours at key 'transition points' or 'moments of change', e.g. when moving house, changing job or relocating premises, when they may already be contemplating a change in behaviour to match their change in circumstances (see page 54).

Designing your Approach

For the group or groups you have selected to focus on, consider what approaches you think would enable the behaviours that support your policy objectives, and what influences could be utilised to make this happen. In doing so, keep in mind the following:

- **To what extent am I restricting 'choice'?** The degree to which initiatives aim to restrict or maintain 'choice' has been set out on a 'ladder[xxxi]' or scale from 'eliminate choice' (which removes choice completely) through to 'do nothing' which does nothing to restrict particular choices, as follows:

Eliminate Choice
Restrict Choice
Guide choice by disincentives
Guide choice by incentives
Guide choice by changing the default policy
Enable choice
Provide information
Do nothing

- **How can I incorporate 'Nudges[xxxii]' to increase the effectiveness of the approach I am taking?** Nudges are aspects of the design of products, processes or infrastructure which work with human behavioural tendencies to encourage particular choices. A 'good' Nudge could be placing a staircase in prime position in front of the entrance to a building, thereby encouraging individuals to use the stairs rather than the lifts. A 'bad' Nudge could be placing the staircase off to the side and behind a closed door, with the lifts in prime position, thereby encouraging individuals to take the lift. To count as a Nudge, an intervention must be easy, cheap to avoid and should not forbid any choice.
- **What kind of intervention(s) am I proposing?** Behaviour change interventions can be characterised and designed using a 'behaviour change wheel which sets out the different kinds of interventions that are possible[xxxiii]' to aid understanding of what is being proposed.

- **What has worked in the past?** Although the evidence-base on Behaviour Change initiatives is still developing, there may be examples of other initiatives that have already sought to change the behaviour of your target population. Learning what has and has not worked from such initiatives should add to what you have already established about their basic attitudes and behaviours, and help to inform the design of your approach.
- **What other initiatives are out there that may help or hinder my approach?** New initiatives are not generally understood and experienced by their target audience in isolation. How they sit within the wider landscape of other initiatives and influences will be important to their success in enabling changes in behaviour. New initiatives that are perceived to 'push in the same direction' as other local or national initiatives are likely to have greater public acceptance, and benefit from the knock-on effects of these other influences on behaviour. Conversely new initiatives that are perceived to run counter to other initiatives can create confusion and frustration – if any potential contradictions are not addressed in the design and communication of the new initiative.
- **Have I mapped out the 'logic' of what my initiatives are trying to achieve?** Mapping out the key steps required in order to turn a set of resources or inputs into activities that are designed to lead to a specific set of changes or outcomes, is a useful way of framing your work to allow for successful appraisal and evaluation (see Q7 of this document for more on evaluation). DfT has published a 'hints and tips' guide on how to develop logic mapping to support the evaluation of transport initiatives[xxxiv].

The template table in **Appendix D** may be helpful in developing approaches to achieve the objectives of your policy. At this stage do not exclude any approaches because they are not things that your organisation itself could deliver. The next section in the toolkit provides guidance on working with others to deliver these kinds of approaches.

Q4. Is your organisation best placed to enable behavioural choice, and who else can help?

Aim: To identify who is best placed to deliver your approach or approaches, who else can help, and how best to engage with them.

Who is best placed to enable behavioural choice?

Having mapped out what approach or approaches you are going to use in the previous question, the next stage is to identify who is best placed to deliver them. This will not necessarily always be a government department or local authority. In some cases, businesses or organisations control the environment in which individuals make decisions about their behaviour. For example, local authorities control the layout of local authority roads, and private operators largely control the provision or bus and rail services.

There are also potential advantages to delivering a policy or initiative through other organisations – who may be seen as more credible or independent by the intended target audience. For example, the Freight Best Practice programme was delivered through a third party (AECOM), backed up by co-branding from DfT. Local organisations may also be better positioned to engage directly with individual members of this population. For example, road safety initiatives rely not only on messages from national government (e.g. communications, and legislation) but also on the one-to-one local support for individuals e.g. Kerbcraft or bikeability schemes.

Start by mapping out *all* the groups or organisations who potentially have a role in achieving the objectives of your policy. A good way to do this is by mapping out which organisations have control or influence over the different factors or elements which determine or make up a particular behaviour, in particular those which need to change in order to enable the behaviours which support your policy objectives.

Returning to the example of **'replacing instances of travelling to work by car during the morning peak with instances of travelling to work by car at other times of the day'**, the following approach could be used to map out which groups or organisations control the elements of the practice of which you want to see more which differ from those elements which make up the practice of which you want to see less.

	Element making up the practice (i.e. those elements which differ from those making up the current behaviour)	Organisations / groups that control / influence the element
Things	Flexible or re-arranged working hours (e.g. allowing staff flexibility to arrive earlier or later or set hours which require staff to travel outside the morning peak)	Employers
	Flexible or revised childcare arrangements (e.g. flexible/revised partner's working hours, flexible/revised school/nursery opening hours, greater childcare availability)	Employers; schools; nurseries; childcare providers
Skills	Employee ability to manage workload / different working hours	Employers
	Employer / managers ability to manage staff workloads / different working hours	Employers
Images and meaning	Belief that it is 'normal' for someone like you to travel to work outside the morning peak	Employers; staff/employees; families/friends; media; cultural leaders; celebrities
	Belief that it is 'normal' for you to be home at different times (e.g. to have breakfast or dinner with your family earlier or later; to miss having breakfast or dinner with your family)	Employers; families; media; cultural leaders; celebrities
	Belief that you can/should arrive at work at (or by) a time which requires you to travel outside the morning peak	Employers

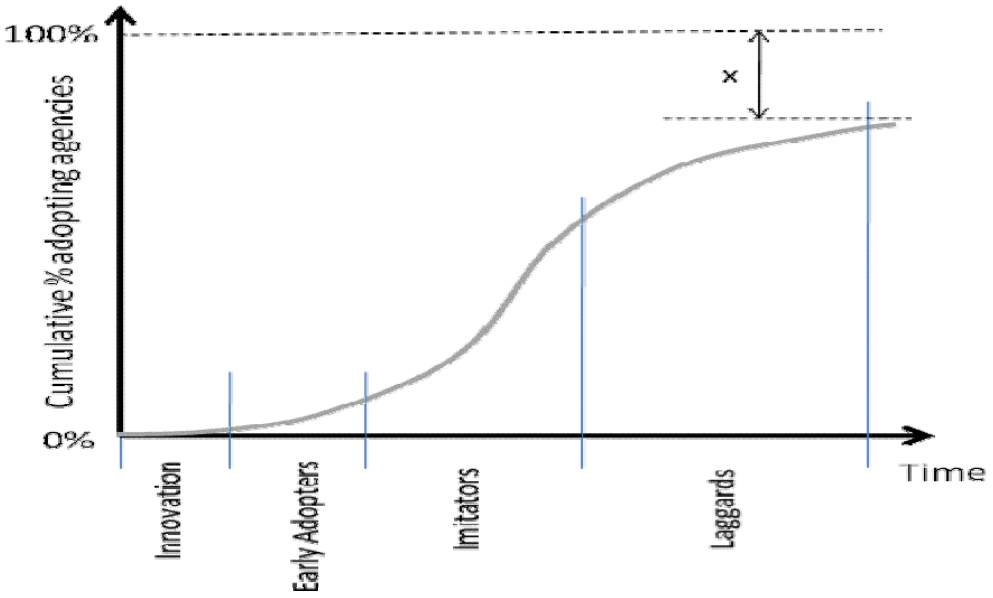
What works in engaging others to enable behaviour change?

DfT has published research on engaging with businesses and public sector organisations to enable changes in behaviour. The key points from the evidence are summarised as follows:

Engaging Public Sector Bodies[xxxv]

- **Policy fit** Public sector organisations will engage most in initiatives that are seen to fit with their own priorities. This does not necessarily preclude non-transport organisations, who may have priorities in complementary areas, e.g. social exclusion or climate change.

- **Who to engage and when** Organisations, even in the same sector, react differently to new initiatives, and their uptake can be viewed as an S-shaped curve:



- Innovators and Early Adopters, who are receptive new ideas, may be best targeted initially in the piloting/development stage of a new initiative. Imitators and Laggards will only fully engage once there are examples of the initiative being successfully implemented by others.

- **Exchange of knowledge and best practice** Public sector organisations prefer to learn from other organisations working in their sector or area. There is generally more trust between organisations in the same peer group and greater understanding of the contextual differences important to the local delivery of an initiative. Pioneering organisations can be used as a focal point for learning and dissemination of good practice.

- **Incentives** Pump priming, grant funding or performance rewards can all facilitate local delivery but this is only likely to be effective when there is a high degree of policy fit (see above).

- **Legal Requirements** Formal requirements to adopt particular policies will increase the proportion of local delivery partners taking up policies. Compliance monitoring becomes important as there is unlikely to be an even commitment to the introduction or effective implementation of the policies.

Engaging Businesses[xxxvi]

- **Be business case focused** For initiatives to be accepted by executive management, they must be presented as a business case - when an initiative is presented to industry, its benefits must be outlined concisely, with cost savings as core. The 'softer', less tangible benefits are also important, and wherever possible should be quantified.

- **Engage across and within** Efforts to engage business should be concerted and aimed at different tiers and individuals within the organisation. You need to be aware of what the barriers and motivators for different levels of an organisation will be e.g. if you are looking to engage with, say, car manufacturers the factors that motivate or act as a barrier for executives' behaviour may differ from the influences on the behaviour of showroom salespeople.

- **Allow for different drivers for change by sector** Specific drivers for change will differ according to the nature of a business. E.g. energy costs in the financial services industry are often less than 2% of overall overheads but in the transport sector energy costs can be as high as 35% of overall overheads and may therefore be a significant motivator to deliver an initiative.

- **Develop a respected brand** Businesses want to be associated with brands which are aligned with their own brand aspirations. They also tend to want a logo to use in their publicity from a credible, well respected organisation that has a valid association with the proposed change.

- **Enable baselining and benchmarking** Business should be allowed to track their progress against their own baseline performance in delivering an initiative, and the progress of their peers. Peer comparisons should be confidential, against industry averages rather than specific competitors.

- **Recognise existing skills** Care must be given to not being patronising and to recognise that any such advice might be seen as threatening to certain individuals in an organisation (e.g. by pointing out a saving that should already have been identified).

You may find it useful to now map out what steps you can take to engage with the parties you have identified for your approach, using the Table in **Appendix E**.

Section 3: Getting feedback on whether your initiatives work

Q5. How do I know if my initiative has been successful?

Aim: To test whether the theory works in practice when delivered within your specific context, to measure whether the anticipated benefits have been realised, and to improve the effectiveness and efficiency of future initiatives

Introduction

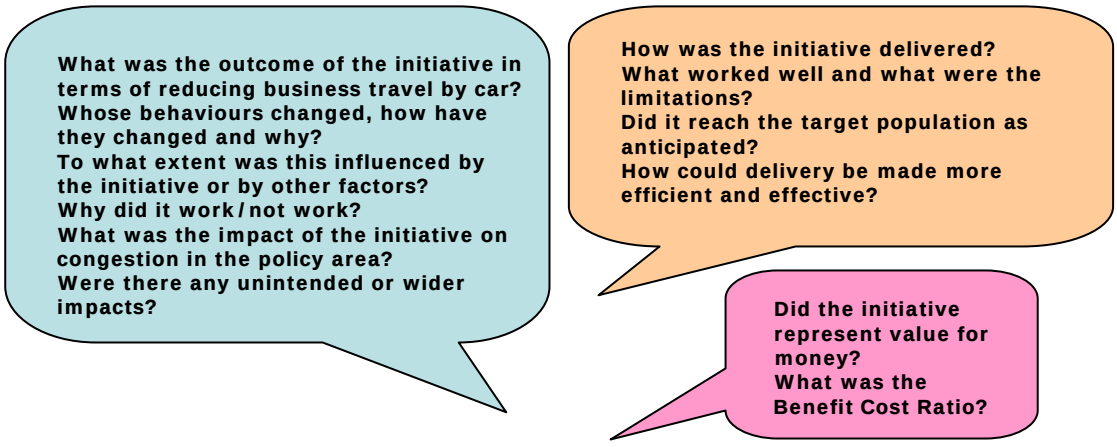
This section introduces the importance of evaluating your initiative during and after its implementation. By the end of this section, you will:

- Appreciate the benefits of evaluating, and the risks of not evaluating, your initiative
- Understand why it is important to think about evaluation design early on, whilst you are planning the initiative
- Have been introduced to some important principles and key questions to ask when thinking about planning an evaluation
- Know where to go for further guidance and support.

What is evaluation and what benefits can it bring?

Evaluation is an objective process which examines how an initiative was designed and implemented, and with what results. It focuses on the practice and experience of the initiative, based on observation about what *actually* happened on the ground during and following implementation - rather than what was *expected* to happen.

For example, Chapter 2 discussed a hypothetical initiative to reduce the number of business people driving to meetings during the morning peak, in order to reduce congestion. Questions asked during the design phase of the policy will have included questions about *who* is currently travelling to business meetings, *when*, *how* and *why*. By contrast, the evaluation of this initiative could ask questions such as:



In other words, evaluation can address:

- Questions about OUTCOMES AND IMPACTS (*impact evaluation*),
- Questions about DELIVERY PROCESSES (*process evaluation*) and
- Questions about VALUE FOR MONEY (*economic evaluation*).

Through answering these questions, you will be able to:

- Provide **accountability** for the investment in your initiative;
- **Justify** future spending decisions on this and similar initiatives; and
- **Improve** future initiatives based on learning from this initiative.

Evaluation therefore provides a means of obtaining relevant, practical learning about *what works, why, for whom and in which contexts*, to help justify investment and design better interventions in future.

What are the risks of not evaluating?

If you have not undertaken an appropriate evaluation of your initiative, you could find yourself faced with some unanswerable questions:



Without an evaluation, therefore, you run the risk of some or all of the following:

- Not being able to convince others that your initiative is successful and offers good value for money
- Not being able to attribute any changes in behaviour to your initiative, rather than to other factors

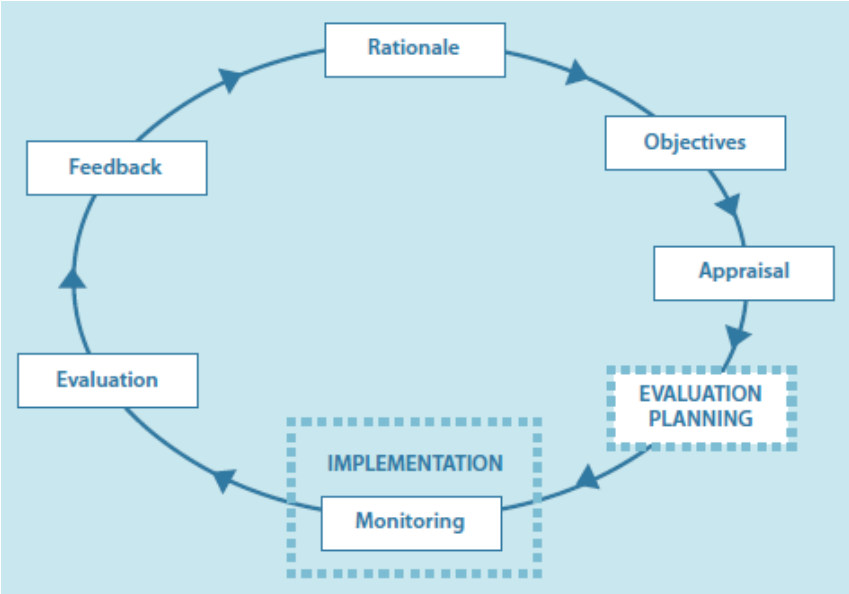
- Not understanding *why* it did or did not work
- Not knowing how to improve this or future initiatives, in terms of efficiency and effectiveness
- Continuing to fund an inefficient and ineffective initiative
- Criticism from external stakeholders.

More detail on the benefits of evaluation, and the risks of not evaluating, can be found in the table below.

Benefits of evaluating	Risks of not evaluating
Impact evaluation	
✶ Provides robust, objective evidence about whether the initiative worked, and for whom. ✶ Assesses any wider or unanticipated effects of the initiative. ✶ Provides evidence of attribution (i.e. proof that it was the initiative that made the difference).	✶ Inability to demonstrate independent evidence of impact. ✶ Lack of evidence to support decisions about future spending/roll-out. ✶ Not being accountable for expenditure. ✶ Inability to attribute any changes to your initiative.
Process evaluation	
✶ Provides objective information about how the intervention was delivered, what the obstacles were, what represented best practice, and how efficiency could be improved. ✶ Helps to identify *why* an initiative did or did not work, thus informing understanding of its transferability. ✶ Enables processes to be improved, saving money and time.	✶ Reliance on anecdote and informal feedback which may not represent reality. ✶ Risk of uninformed and unsound decisions about delivery issues. ✶ Inability to identify efficiency savings. ✶ Lack of understanding of how to improve delivery. ✶ Inability to calculate delivery costs.
Economic evaluation	
✶ Provide robust assessment of the Benefit Cost Ratio in order to justify future resourcing, or cancel policies which do not offer an adequate BCR.	✶ No information on whether the policy benefits outweigh the costs. ✶ Unable to justify expenditure to taxpayers and other funding stakeholders. ✶ Insufficient evidence to consider cost-effective solutions in the future.

When should I think about evaluation[xxxvii]?

You may recognise evaluation as the "E" in the ROAMEF policy cycle. However, good evaluators and effective policymakers start thinking about evaluation much earlier in the cycle, as shown in the diagram below.



This is because the way in which the policy is designed and implemented has important implications for what you can achieve with your evaluation. Three key ways in which early consideration of evaluation needs can benefit you are described below.

1. Building in potential for comparison groups

If you wish to demonstrate conclusively that your intervention has influenced behaviours *over and above* what would have happened anyway, you will need a comparison group of similar participants (individuals, local areas, businesses, etc) who do not receive the intervention. By **piloting** or **phasing** the delivery of the initiative with a sample of your target population before it is rolled out universally, you can ensure a robust comparison group *and* potentially save money on rolling out an ineffective policy if the evaluation indicates that it is not working.

> *→ For instance, you could decide to offer the business travel initiative to only half of your target businesses in the first year, and then compare their levels of business car use with levels in businesses which did not receive the intervention.*

2. Ensuring impact can be assessed against a robust baseline

Before your initiative is implemented, it is important to assess what the baseline is, i.e. what is the current situation in relation to the behaviours you are trying to influence prior to your initiative beginning? (*You may well already have information on this gathered as part of Q2. What do I know about current behaviours, and how does that relate to the theory?)*

The evaluation can then compare the *post-intervention results* with the *baseline position* to see what change has occurred. If you do not consider the needs of baselining before your policy is implemented, then you could lose the opportunity to gather this important information.

> → *For example, in order to assess the impact of your initiative on business travel by car, you need to know either:*
>
> - (if following an economic/psychological approach) *how many people undertake business trips by car before your intervention begins, compared to the number of people who undertake business trips by car after your intervention.*
> - (if following a social practices approach) *how many instances of business travel by car there are before your intervention begins, compared to the number of instances of business travel by car after your intervention.*

3. Saving money and effort on data collection

Considering your data needs in advance means that they can in some cases be built into standard monitoring processes, rather than having to pay for custom data collection to inform the evaluation.

> → *For example, recipients of the business travel intervention could be asked to submit data on the number of employees targeted within each workplace and their usual mode of business travel, in return for the package of support they receive.*

I am ready to begin designing my initiative. What are the key steps for evaluation?

HM Treasury's Magenta Book provides some practical guidance for policymakers who are looking to evaluate an initiative, including a framework for developing an evaluation plan. The key steps are set out in turn below, with some notes on how steps relate to what you have already seen in this toolkit, and some ideas for relevant resources and support.

1. Defining the policy objectives and intended outcomes
• What is the programme logic[xxxviii] or theory about how inputs will lead to outputs, outcomes and impacts, in the particular policy context?
The earlier sections of this toolkit demonstrate how behavioural insights can help you to develop a coherent logic or theory for how and why your initiative will influence the target behaviours. This "logic map" will be a key tool during the evaluation, as the evaluators seek to assess whether it worked, for whom, and in which contexts.

2. Considering the implications of policy design for evaluation feasibility

- Can proportionate steps be taken to increase the potential for good evaluation?
- What adjustments to policy implementation might improve evaluation feasibility and still be consistent with overall policy objectives?

You have already been introduced to these issues under 'WHEN SHOULD I THINK ABOUT EVALUATION?' above. Make sure you involve your analyst colleagues at an early stage, to advise on evaluation options before it is too late.

3. Defining the audience for the evaluation

- Who will be the main users of the findings and how will they be engaged?

This will help to ensure that your evaluation answers the right questions and makes an impact at the end of the day. Users can also be a useful source of advice and guidance during the evaluation, to help maintain its focus and steer its approach.

4. Identifying the evaluation objectives and research questions

- What do policymakers need to know about what difference the programme made, and/or how it was delivered?
- How broad is the scope of the evaluation?

Thinking about how the evaluation will feed into policy decisions will help you to select an appropriate scope – not too narrow, and not too broad. This will in turn influence the evaluation approach and resources.

5. Selecting the evaluation approach[xxxix]

- Is an impact, process or combined evaluation required?
- Is an economic evaluation required?
- How extensive is evaluation likely to be?
- What level of robustness is required?

Talk to your analysts, who have a wealth of experience and insights into methodological issues and will be able to offer practical advice.

6. Identifying the data requirements[xl]

- At what point in time should impacts be measured?
- What data are required?
- What is already being collected/available?
- What additional data needs to be collected?
- Who will be responsible for data collection and what processes need to be set up?

This will be best done through collaboration between those responsible for delivering the initiative, and those responsible for evaluating it to ensure that best use can be made of existing data, and to see whether small changes to monitoring throughout the initiative can negate the need for custom data collection.

7. Identifying the necessary resources and governance arrangements[xli]

- How large-scale/high-profile is the policy, and what is a proportionate level of resource for the evaluation?
- What budget is to be used for the evaluation and it is compatible with the evaluation requirements? Has sufficient allowance been built in?
- Who will be the project owner, provide analytical support, and be on the steering group?
- What will the quality assurance processes be?

Evaluation requires resources, in terms of the money required to collect data but also the time and resource required to plan, manage and quality assure the evaluation, which should be ideally included in the budget for the initiative from the start. However, as the discussion above makes clear, the benefits of evaluating and the risks of not evaluating should outweigh the costs of a proportionate evaluation. Proportionality in evaluation terms means considering the nature, scale and profile of your initiative and weighing up the need for different levels of evaluation.

8. Conducting the evaluation

- Will the evaluation be externally commissioned or conducted in-house?
- Who will be responsible for specification development, tendering, project management and quality assurance?
- When does any primary data collection need to take place?
- Is piloting or cognitive testing of research instruments required?
- When will the evaluation start and end?

9. Using and disseminating the evaluation findings

- What will the findings be used for, and what decisions will they feed into?
- How will the findings be shared and disseminated?
- How will the findings feed back into the ROAMEF cycle?

Although this stage comes last, as you can see it will only be effective if it is planned for from the beginning. Also, consider whether interim or emerging findings during the course of the evaluation could be usefully disseminated, and how.

Section 4: Reality testing and a final review

This section is a chance to step back and review whether your proposed approach is feasible, realistic and has avoided any common pitfalls or negative outcomes.

The table below outlines a list of questions to ask and gives examples of the pitfalls to avoid or potential negative outcomes in relation to each question. The table is divided into three sections, corresponding to the earlier sections in the toolkit. The extent to which each question is relevant or important may vary depending on the nature of your approach. However, we recommend working through the questions and, if necessary, revisiting the relevant section in the toolkit.

Things to ask yourself	Related pitfalls/negative outcomes
Understanding what you are trying to achieve	
• Have you started by looking at the nature of the problem/challenges?	• Starting with a proposed solution and working 'backwards'. This risks wasting resources on ineffective initiatives that do not take account of the nature of the problems you wish to tackle.
• Have you identified a range of possible policy objectives?	• Focussing on too few policy objectives, risking you overlooking potentially more effective and/or feasible objectives.
• Have you prioritised your objectives?	• Focussing on too many objectives, resulting in limited resources being spread too thinly.
• Having you identified a range of policy options to meet your objectives?	• Focussing on too few policy options, risking you overlooking potentially more effective and/or feasible options.
• Have you defined the factors (or elements) which make up the behaviours / practices which are relevant to your policy options	• Failing to take account of factors or elements which may be key to influencing/determining the behaviour(s) or practice(s) you are interested in.
• Have you established how your population or behaviour of interest varies?	• Not knowing who or what your initiative should be targeted at, potentially wasting resources either through trying to achieve the impossible, or through allocating more resources than you need to.
Understanding how you could achieve your objectives	
• Have you addressed all the different types of factors or elements which influence or constitute a behaviour?	• Only addressing some of the relevant factors / elements or focusing on the wrong factors / elements, resulting in your objectives not being met.

• Have you considered the role of 'Nudges' in the design of your initiatives?	• Not taking full advantage of comparatively low cost, small-scale changes to infrastructure, language, processes etc. that can help influence human behaviour in order to make initiatives more effective at meeting policy objectives. • Placing too much reliance on Nudges when other types of initiatives are also necessary to achieve your policy objectives. • Overlooking unintentional 'bad' Nudges which undermine the effectiveness of your initiatives.
• Have you thought through who controls the factors or elements which influence or constitute the behaviours you are interested in, and how to engage them?	• Failing to engage those who control all or some of the factors or elements which influence or constitutes a behaviour, resulting in those factors/elements not being addressed and policy objectives not being achieved.
• Have you thought through who is best placed to deliver your initiative?	• Having your organisation deliver something when other organisations are better placed to do so, potentially resulting in wasted resources and/or less effective initiatives. • Relying on organisations to deliver something when they are not able to do so, resulting in wasted resources and/or less effective initiatives.
Getting feedback on whether your initiatives work	
• Have you got evaluation measures in place to help you understand how well your initiative is working?	• Being unable to demonstrate the impact of your initiative on behaviour. • Being unaware of why an initiative has failed or been successful, thereby increasing the risk of future mistakes.

APPENDIX A: Behavioural Theories

Neoclassical economic (or 'rational choice') theories

Economics is a social science which analyses the production, allocation and distribution of goods and services. There are two broad branches of economics: macroeconomics and microeconomics. While macroeconomics studies the performance, structure and behaviour of entire economies, microeconomics is more closely associated with policy initiatives relating to behaviour, given it studies how individuals and organisations make decisions to allocate limited resources. Microeconomics usually takes the individual person or organisation as its unit of analysis.

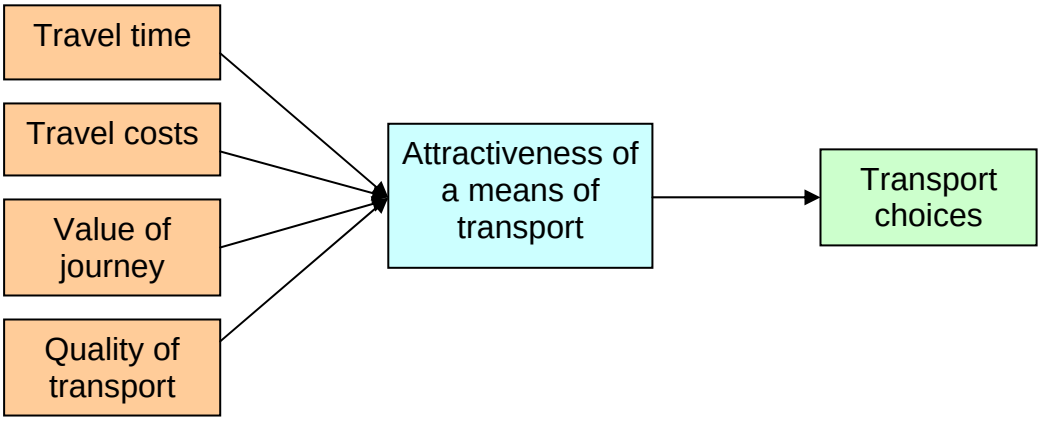
For much of the twentieth century, mainstream microeconomics was underpinned by neoclassical economic theory and rational choice theory, which include three broad assumptions:

1. Individual people have 'rational' preferences which are determined by the value associated with different outcomes
2. Individual people maximise utility and companies maximise profits
3. Individuals act independently on the basis of full and relevant information.

Central to this is the notion that any individual's behaviour is rational and driven by the desire to obtain the highest possible wellbeing for him- or herself. It also assumes that behaviour is the result of conscious thought, with individuals consciously evaluating the costs and benefits of options before consciously choosing how to behave.

A model of transport behaviour based on neoclassical economic theory and rational choice theory could therefore look as follows[xlii]:

Example of a rational choice model of transport behaviour



Psychological theories

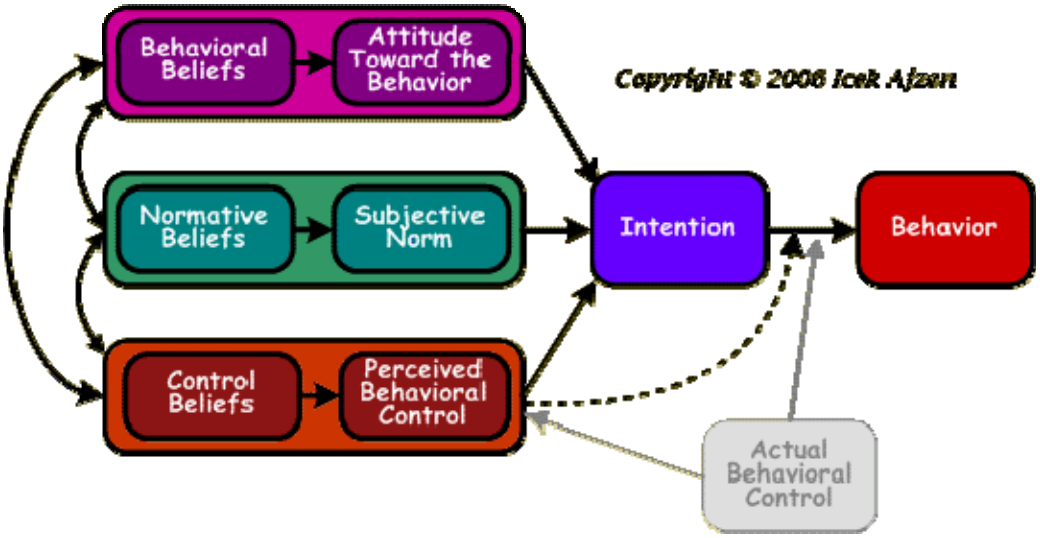
Psychology is the science of behaviour and aims to understand how and why individuals, groups and organisations behave as they do. Psychology usually takes the individual person or organisation as its unit of analysis. Many 'psychological' theories of behaviour have traditionally been based around the

idea that internal mental states (rather than external conditions) drive behaviour - the assumption being that if someone intends to do something, they usually do it.

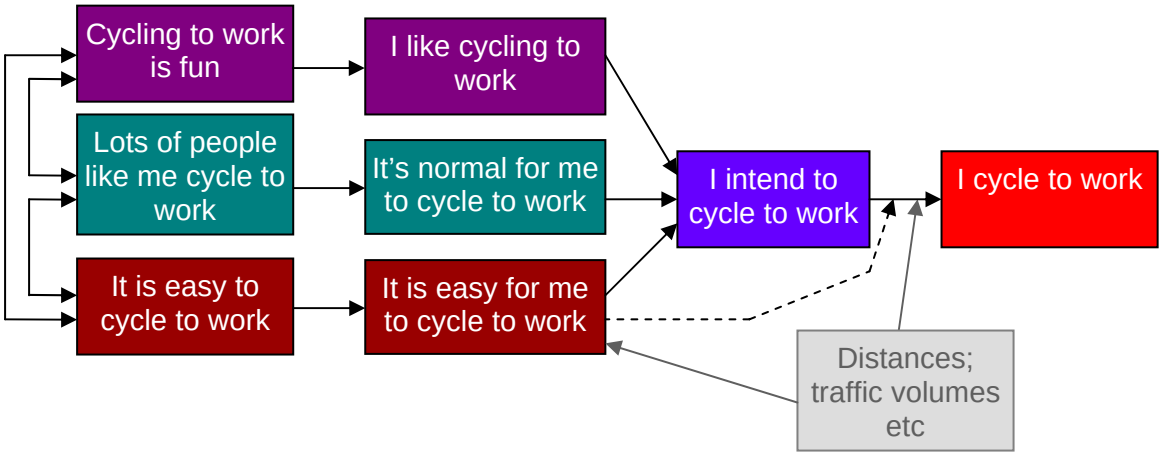
One such theory is the Theory of Planned Behaviour. The theory predicts that 'intention' is the key determinant of behaviour, as illustrated by the diagram below. Intention is, in turn, determined by a combination of:

- *'Attitudes'*, defined as an individual's degree of like or dislike for something
- *'Social norms'*, defined as whether or not a behaviour is seen as acceptable or 'normal'
- *'Perceived behavioural control'*, defined as an individual's perceived ease or difficulty of performing the particular behaviour.

Theory of Planned Behaviour[xliii]



The diagram below provides an example of applying the Theory of Planned Behaviour to the transport context, using the example of cycling to work.



Other psychological models of behaviour have placed more importance on the role of external conditions (e.g. journey distances, traffic volumes) in

determining behaviour, with one such model being the Attitude-Behaviour Context ('ABC') model[xliv]. Unlike the Theory of Planned Behaviour, the ABC model assumes that behaviour is a function of both an individual and his or her environment. According to the ABC theory, where an individual's attitudes are positive and the external conditions are favourable, a behaviour will occur - as illustrated by the following diagram on recycling behaviour:

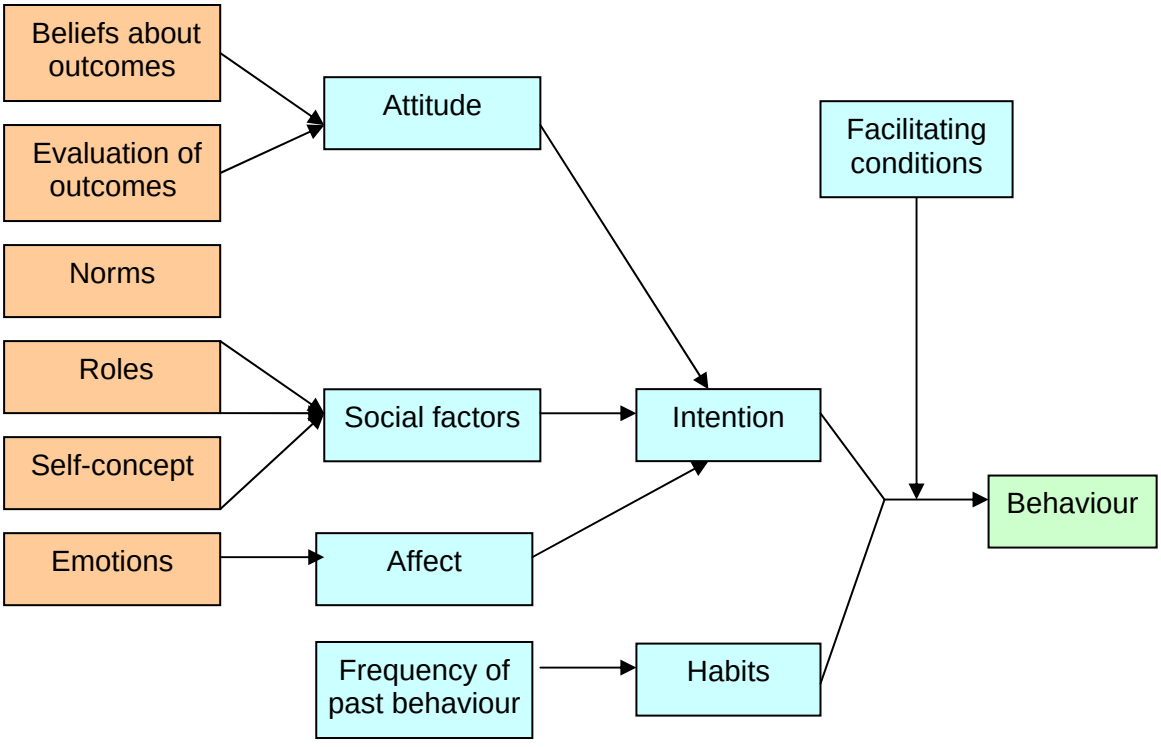
Both the Theory of Planned Behaviour and the ABC model offer a view of behaviour which is the outcome of a deliberative process - in other words, where someone has consciously *thought* about how to behave. Neither model accounts for the role of habit in determining behaviour. As noted previously, a 'habit' is defined as a behaviour which is repeated regularly and tends to occur subconsciously, without the person having to consciously *think* much before performing it.

Habit is accounted for by Triandis' Theory of Interpersonal Behaviour[xlv], a social psychological theory originally created to predict interactions between people. As illustrated by the diagram below, the model asserts that the top three factors in terms of their importance in determining behaviour are i) habit; ii) intention; and iii) facilitating conditions.

Subsequent experimental research[xlvi] found that the Theory of Interpersonal Behaviour was a better predictor of transport behaviour than other models because of its emphasis on habit.

The inclusion of emotion in the Theory of Interpersonal Behaviour also differentiates it from the more deliberative, 'conscious' view of behaviour proposed by The Theory of Planned Behaviour and the ABC model. Similar to habit, emotions do not require conscious 'thought' to occur.

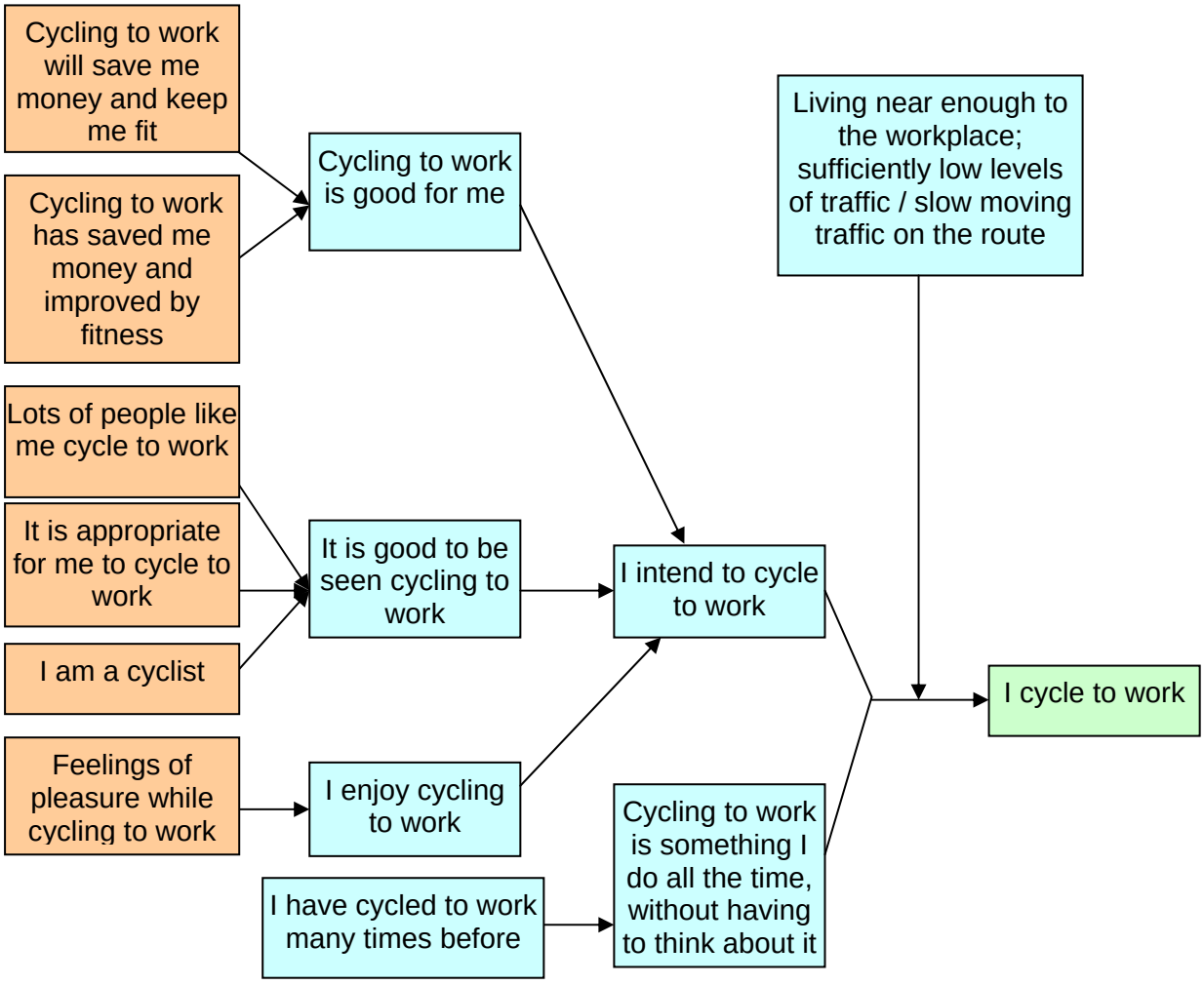
Triandis' Theory of Interpersonal Behaviour



The diagram below illustrates how Triandis' Theory of Interpersonal Behaviour can be to the transport context, using the example of cycling to work. As shown, the behavioural outcome ('I cycle to work') is the same as for the Theory of Planned Behaviour example shown above. But the example below suggests that a wider range of factors are important in determining the behaviour, including:

- Emotions/affect (e.g. I enjoy cycling to work),
- Past behaviour and habit (having cycled to work many times before)
- Facilitating conditions (e.g. short enough distances between home and work and low enough traffic volumes / speed on the route to work).

Example of applying Triandis' Theory of Interpersonal Behaviour to cycling to work



Behavioural Economic theories

As noted above, for much of the twentieth century, mainstream microeconomics was underpinned by neoclassical theory and rational choice theory, which adopted the simplifying assumption that human behaviour was largely the result of conscious, rational choices.

However, during the latter half of the twentieth century, evidence increasingly emerged showing how human behaviour was sometimes systematically irrational, with individuals and organisations sometimes taking actions which appeared to undermine their own wellbeing. For example, some individuals could harm their health by drinking too much alcohol, despite knowing it was bad for them. To address this, behavioural economics emerged, aiming to understand and explain such 'irrational' behaviour.

Behavioural economics integrated insights from psychology with neoclassical economic theory in order to explain why the economic decisions of individuals and organisations can deviate from purely 'rational' decision-making. Key insights from Behavioural Economics, and examples of their implications for transport behaviour, are summarised below:

What is the theory[xlvii]?	How can it work in practice?
Bounded Rationality and Heuristics (Rule of Thumb) Not all the relevant available information is used to inform a decision.	If a price structure aiming to encourage travel at certain times is perceived as being too complex, the behavioural tendency will be for some people to disengage, resulting in unintended consequences.
Loss Aversion People dislike losses more than they like gains of an equivalent amount	Communicating the money individuals or organisations will lose by not adopting a new behaviour may be more effective than communicating the money they will save by adopting it.
Discounting Short-term costs and benefits dominate decision making	Any initial investment necessary to adopt a new transport behaviour (for example driving a lower emissions vehicle, or reducing business travel through teleconferencing) is likely to act as a strong deterrent – even if it is beneficial to the individual or organisation in the long term.
Procrastination People put off decisions involving complexity, self-doubt or inconvenience	Using a combination of public transport modes to complete an end to end journey may be quicker or cheaper than driving, but if co-ordinated journey planning information is not readily available, people are unlikely to invest the time or effort in finding this out for themselves.
Over-weighting small probabilities Tendency to over-estimate the probability of rare, vivid events	For example, people commonly express fears about being the victim of crime on public transport, despite comparatively low incident levels. Similarly, people can overestimate the extent to which they are likely to use on-street electric vehicle charging infrastructure.

MINDSPACE[xlviii], a report published in 2010 by the Cabinet Office, draws together evidence from behavioural economics and presents nine key effects:

What is the theory?	How can it work in practice?
Messenger We are heavily influenced by who communicates information	Information about the environmental or financial benefits of different modes or vehicles is more likely to be acted on if communicated by a person or organisation seen to have authority and to be 'independent'.
Incentives Our responses to incentives are shaped by predictable mental shortcuts	Short-cuts include discounting, procrastination and choice overload – see discussion of Behavioural Economics above.
Norms We are strongly influenced by what others do	Providing people or organisations with information about their peers can exert a strong influence on them to modify their behaviour accordingly. Evidence from the energy sector suggests that providing households with domestic bills that compare their consumption with others in their neighbourhood can be effective in lowering levels of consumption.
Defaults We go with the flow of pre-set options	For example, the default mode pre-selected by an online journey planner is likely to mean many users only consider using this mode for their journey, even if they have the option of requesting information about how to undertake the journey by other modes.
Salience Our attention is drawn to what is novel and seems relevant to us	People are more likely to act on information that they can easily relate to their personal experiences, e.g. information on the carbon footprint of a specific journey they are familiar with rather than the same information at an aggregate or national level.
Priming Our acts are often influenced by sub-conscious cues (sights, words or sensations)	Physical features of the road network and public transport infrastructure may subconsciously trigger certain behaviours, eg. more responsible driving or lower levels of anti-social behaviour.
Affect Emotional associations can shape our actions	For example, road safety campaigns have sought to reinforce the emotional consequences of traffic accidents for those affected.
Commitments We seek to be consistent with our public promises, and reciprocate acts	Individuals and organisations who make a public commitment to change their transport behaviour in some way (eg. walking more or reducing business travel) are more likely to sustain their change in behaviour, particularly if they have the support of others trying to do the same.
Ego We act in ways that make us feel better about ourselves	Some individuals and organisations may want to project an image of themselves as adventurous and at the cutting edge of new technology, and be willing to consider changes in how they travel which helps reinforce this – particularly if it is visible to others.

Sociological theories

Sociology is the study of society. It seeks to provide insights into the many forms of relationship, both formal and informal, between people. Smaller scale relationships are connected to larger scale relationships and the totality of this is society itself.

Sociological theories of human behaviour are fundamentally different from the economic and psychological theories discussed previously. Economic and psychological theories both take the individual person or organisation, in other words the 'agent' doing the behaviour, as the unit of analysis.

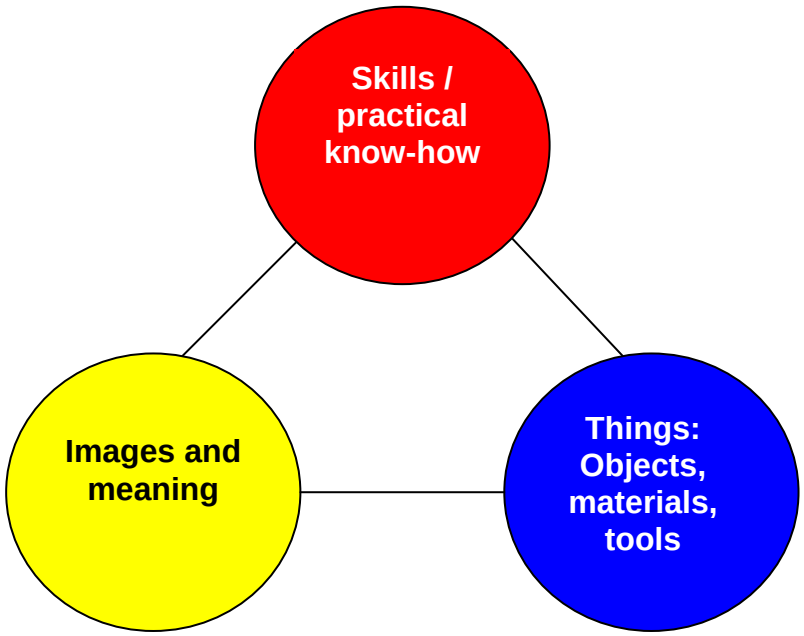
In contrast, sociological theories are based on the assumption that individuals' behaviour is determined by structures (e.g. transport infrastructure, economic conditions, house prices, cultural conventions) which are 'bigger' than the individual. Therefore, the notion that individuals 'choose' how to behave is largely an illusion, as structural factors largely constrain or determine the choices which can feasibly be made. In this sense, behaviour is not a result of individual preferences (or 'attitudes') but rather of the physical, economic and cultural conditions which determine those preferences, with most people, most of the time, being 'locked in' to their existing patterns of behaviour.

Sociologists argue that it is therefore less important to understand the individuals than to understand structures. They therefore think about or analyse the components of a structure or practice, rather than the individuals who carry out the practice.

A key example of this is social practice theory[xlix]. Examples of social practices relating to transport may include:

- Cycling to work
- Travelling by bus to go shopping in town
- Travelling using a smart ticket
- Buying an ultra low carbon car
- Wearing a seatbelt

Social practices consist of three main elements, illustrated below:



For example, in many instances, the 'practice' of cycling to work is likely to include the following elements:

Things	• A human body which is capable of cycling (e.g. does not have disabilities which prevent cycling) • A bicycle and suitable clothes / shoes • A suitable road (e.g. well paved surface; sufficiently low motorised traffic volumes; sufficiently slow-moving traffic) or cycle path • Homes and workplaces which are near enough to one another to permit cycling to work within the time and energy available
Skills	• Knowledge of how to ride a bicycle on the roads and avoid accidents • Knowledge of which route to take • Knowledge of how to maintain a bicycle
Images and meaning	• Confidence / self-belief that you are capable of cycling to work • Belief that it is 'normal' for someone like you to cycle to work • Belief that it is safe enough for you to cycle to work

The above list is not comprehensive and the exact list of elements required is likely to vary – for example 'showering facilities at work' may also be required for some instances of the practice to occur (e.g. where the distance between home and work is longer) but not for others.

Each instance of the 'practice' of cycling to work is therefore a structure which integrates, and is dependent on, a set of elements. If even one element is removed, the practice is threatened and becomes less likely to occur. For example, the UK during the latter half of the twentieth century saw many changes to **things:**

- People increasingly lived further away from where they worked
- The volume of motorised traffic on roads increased
- The population aged and obesity levels rose.

These changes undermined the elements constituting the practice of cycling to work. As a result, the practice of cycling to work, which had been relatively common in the earlier part of the twentieth century, became increasingly uncommon. In turn, this undermined the **skills** needed to cycle to work (as individuals became less and less experienced) and the **images and meanings** needed (as individuals' belief that they were capable of cycling to work and that it was 'normal' for someone like them to cycle to work, diminished). This resulted in a 'domino effect' whereby different elements increasingly undermined one another to further and further undermine the overall practice of cycling to work. Over time, the practice largely disappeared, shifting from a 'mainstream' to a 'niche' activity.

A social practices strategy for increasing levels of cycling would therefore seek to **identify** and **put in place** the various elements needed for more instances of the practice of cycling to work to occur. As noted above, the precise elements required will vary between different instances of the practice. But a successful strategy will seek to put in place the elements required to meet the goals of the strategy, whether that be to increase instances of the practice to a certain level overall, or to increase instances of the practice which incorporate particular elements (e.g. a greater distance between the home and workplace).

Theories of Change

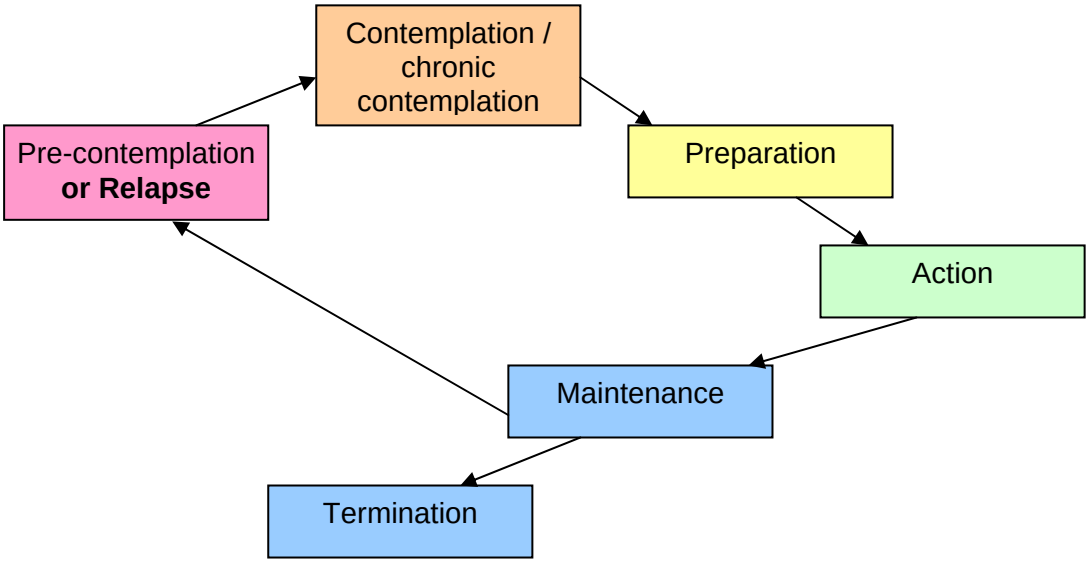
The behavioural models above tend to focus on explaining and predicting behaviour *at a single point in time*. In contrast, theories of change focus on explaining and predicting how and why behaviour can change over time.

A key example of a theory of change is Prochaska and Di Clemente's Transtheoretical Model of Health Behaviour Change, also known as the 'Stages of Change' model[l]. The model segments individuals into a series of stages, depending on how far advanced they are in switching from one behaviour to another (e.g. from driving to cycling to work).

The stages are as follows:

1. **Pre-contemplation:** in which people are not intending to change or take action
2. **Contemplation:** in which people are intending to take action within the next six months, but are not ready to take action. Doubts about the effectiveness of action and of uneven costs and benefits may stall people at this stage for some time (in a state of **'chronic contemplation'**)
3. **Preparation:** in which people are intending to take action in the next month; they are very aware of the costs and benefits of change and some behaviour change may already have taken place, including having a plan of action.
4. **Action:** in which people have made or are making specific overt modifications to their behaviour, usually begun within the last six months.
5. **Maintenance:** in which people are actively working to prevent a relapse to the previous behaviour, having made the change at least six months previously.
6. **Termination:** in which the new behaviour has become the 'norm' and there is no chance of relapse.

The stages are usually presented in a cyclical rather than a linear fashion, as this allows for some people to **relapse** from maintenance back to the beginning of the process, as follows:



The survey conducted to inform the Climate Change and Transport Choices segmentation model[li] included questions aiming to allocate those who currently drove to work to one of the 'Stages of Change', both in relation to using public transport and cycling to get to work. Overall, the findings suggested that those who travelled to work by car were most likely to be in:

- The ‘pre-contemplation’ stage in relation to using public transport (meaning they had not considered using public transport or cycling to get to work)
- The ‘chronic contemplation’ stage (meaning they had considered using public transport or cycling to get to work but had decided not to)
- The ‘relapse’ stage (meaning they had tried using public transport or cycling to work but had decided not to continue).

In contrast, far fewer were in the ‘contemplation’, ‘preparation’ or ‘action’ stages.

Such findings highlight the importance of **‘Moments of Change’.** Moments of change have been described as periods of transition such as going to university, starting work, moving house, changing job, or retiring.

A key aspect of moments of change is that behaviours that were previously habitual (i.e. performed subconsciously, without questioning) suddenly come under scrutiny. The individual consciously questions how they should be done. For example, someone getting a new job in a different location may suddenly question how they travel to work. In this sense, moments of change represent a ‘window of opportunity’ for those seeking to enable particular choices.

APPENDIX B: Table for listing the key influences on the behaviour of the individuals you are interested in

Type of Influence	Behaviours		
	Driving to work during the morning peak	**Cycling to work**	**Driving to work outside the morning peak**
Structural factors (i.e. physical / cultural constraints)	*e.g. distance between home and workplace; availability of parking at workplace; time constraints (e.g. availability of childcare; employers' expectations / rules on time keeping)*	*e.g. distance between home and workplace; speed and volume of traffic on route between home and workplace; availability of cycle lanes*	*e.g. distance between home and workplace; availability of parking at workplace; time constraints (e.g. availability of childcare; employers' expectations / rules on time keeping)*
Attitudes	*e.g. whether like driving to work during the morning peak*	*e.g. whether like (the idea of) cycling to work*	*e.g. whether like (idea of) driving to work outside morning peak*
Norms	*e.g. whether driving to work during morning peak is 'normal' for someone like me*	*e.g. whether cycling to work is 'normal' for someone like me*	*e.g. whether driving to work outside morning peak is 'normal' for someone like me*
Cost	*e.g. cost of parking at (or near) workplace; cost of buying / maintaining / fuelling vehicle*	*e.g. cost of buying / maintaining bicycle*	*e.g. cost of parking at (or near) workplace; cost of buying / maintaining / fuelling vehicle*
Habit	*e.g. whether driving to work during morning peak is done regularly (and so a habit)*	*e.g. whether cycling to work is done regularly (and so a habit)*	*e.g. whether driving to work outside morning peak is done regularly (and so a habit)*
Knowledge/ Awareness	*e.g. whether know how to drive to work during the morning peak*	*e.g. whether know how to ride a bicycle on the roads*	*e.g. whether they know about whether their employer would allow them to vary their hours; whether they know about childcare provision that would enable them to vary their hours*
Capability and Self-Efficacy	*e.g. whether they feel confident driving to work during the morning peak*	*e.g. whether they (would) feel confident cycling to work; age / physical capacity to cycle to work*	*e.g. whether they (would) feel confident arriving at work at a different time*

APPENDIX C: Table for listing and prioritising population sub-groups or forms of practice

Main Focus	Secondary	Out of scope

APPENDIX D: Table for listing possible approaches for achieving policy objectives

Approach	Description	Factors or elements which influence / make up behaviour addressed

APPENDIX E: Table for mapping out the steps you could take to engage with the external parties you have identified

Factors / elements which determine, influence or make up the behaviour / practice(s) of interest	Organisations who determine or influence the factors / elements	Steps to promote engagement with the organisations who determine or influence the factors / elements

Further reading

[i] Behaviour Change: What Works for Transport? Think Piece project. See here: http://www2.dft.gov.uk/pgr/scienceresearch/social/behaviour-changes/

[ii] Christmas, S. 'Nine Big Questions about Behaviour Change'. DfT, 2010 http://www.dft.gov.uk/pgr/scienceresearch/social/behaviour-changes/doc/questions.rtf

[iii] Based on Ken Wilber's four-quadrant structure, cited in Table 4.1, pp. 84 of Anable, J. et al. (2006) *An evidence base review of public attitudes to climate change and transport behaviour*: Available here: http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/pgr/sustainable/climatechange/iewofpublicattitudestocl5730.pdf

[iv] P L Jacobsen, F Racioppi and H Rutter. *Who owns the roads? How motorised traffic discourages walking and bicycling.* Injury Prevention 2009 15: 369-373

[v] Thornton, A. Bunt, K. Dalziel, D. Simon, A. (2010) Climate Change and Transport Choices Segmentation Study – Interim Report. Available here: http://www.dft.gov.uk/publications/climate-change-and-transport-choices/

[vi] For more information, see: Darnton, A, Verplanken, B, White, P and Whitmarsh, L (2011). Habits, Routines and Sustainable Lifestyles: A summary report to the Department for Environment, Food and Rural Affairs. AD Research & Analysis for Defra, London.

[vii] For more information on rational choice theory, see Jackson, T. (2005) *Motivating Sustainable Consumption: A review of evidence on consumer behaviour and behavioural change.* A report to the Sustainable Development Research Network. Available here: http://www.sd-research.org.uk/wp-content/uploads/motivatingscfinal_000.pdf

[viii] For more information, see MINDSPACE: Influencing behaviour through public policy, available here: http://www.instituteforgovernment.org.uk/content/133/mindspace-influencing-behaviour-through-public-policy

[ix] For an overview of behavioural economics, see Darnton, A. (2008) *GSR Behaviour Change Knowledge Review Reference Report: An overview of behaviour change models and their uses.* Available here: http://www.civilservice.gov.uk/wp-content/uploads/2011/09/Behaviour_change_reference_report_tcm6-9697.pdf

[x] For more information, see Darnton, A. (2008) *GSR Behaviour Change Knowledge Review Reference Report: An overview of behaviour change models and their uses.* Available here: http://www.civilservice.gov.uk/wp-content/uploads/2011/09/Behaviour_change_reference_report_tcm6-9697.pdf

[xi] Jackson, T (2005) *Motivating Sustainable Consumption: A review of evidence on consumer behaviour and behavioural change.* A report to the Sustainable Development Research Network. Available here: http://www.sd-research.org.uk/wp-content/uploads/motivatingscfinal_000.pdf

[xii] Source: DfT (2008) Carbon Pathways Analysis: Informing Development of a Carbon Reduction Strategy for the Transport Sector. See here: http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/pgr/sustainable/analysis.pdf

[xiii] Key sources of evidence on transport behaviour and public attitudes:

- National Travel Survey – best source of national data on transport behaviour http://www.dft.gov.uk/pgr/statistics/datatablespublications/nts/

- Climate Change and Transport Choices – key source of national (England only) data on transport behaviour and attitudes to transport and climate change http://www.dft.gov.uk/publications/climate-change-transport-choices-segmentation
- Other data published by DfT – range of survey and administrative transport data http://www.dft.gov.uk/pgr/statistics/
- Research by DfT agencies and NDPBs – mode specific transport data http://www.dft.gov.uk/about/howthedftworks/organisationofthedft
- Data collected by other government departments – research on transport behaviour that crosses over with other policy areas http://www.dft.gov.uk/pgr/scienceresearch/ee/othergovernmentdepartmentsan1901
- DfT social research reports – range of published evidence on public attitudes to transport and experiences and choices of different sub-groups of the population: http://www.dft.gov.uk/pgr/scienceresearch/social/
- Knowledge review of research on public attitudes to transport: http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/pgr/scienceresearch/social/evidence.pdf
- Evidence base review on public attitudes to climate change and transport behaviour: http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/pgr/sustainable/climatechange/iewofpublicattitudestocl5730.pdf

[xiv] Christmas S, Nine Big Questions about Behaviour Change, DfT, 2010 http://www.dft.gov.uk/pgr/scienceresearch/social/behaviour-changes/doc/questions.rtf

[xv] For more details on the Climate Change and Transport Choices segmentation model, see: http://www.dft.gov.uk/publications/climate-change-transport-choices-segmentation

[xvi] For more details of the Sustainable Travel Towns programme, see: http://www.dft.gov.uk/pgr/sustainable/ltp3planning/travelguide/sttresults/

[xvii] Jacobsen, P L, Racioppi, F and Rutter, H (2009) *Who owns the roads? How motorised traffic discourages walking and bicycling* Injury Prevention 15: 369-373

[xviii] See Table 5.2, page 76 of Impacts monitoring Second Annual Report, April 2004, available here: http://www.tfl.gov.uk/assets/downloads/Impacts-monitoring-report-2.pdf

[xix] Avineri, E et al. 'Individual Behaviour Change: Evidence in transport and public health', DfT, 2010. Available here: http://www.dft.gov.uk/pgr/scienceresearch/social/behaviour-changes/pdf/transport-and-health.pdf

[xx] For more information, see MINDSPACE: Influencing behaviour through public policy, available here: http://www.instituteforgovernment.org.uk/content/133/mindspace-influencing-behaviour-through-public-policy

[xxi] Linkenbach and Perkins (2003) Most of Us Wear Seatbelts: The Process and Outcomes of a 3-Year Statewide Adult Seatbelt Campaign in Montana. Conference presentation: The National Conference on the Social Norms Model, Boston, cited in Dolan P et al (2010) 'MINDSPACE – Influencing behaviour through public policy', Cabinet Office.

[xxii] Exemplifying is part of DEFRA's '4Es' model of behaviour change. More information is available here: http://www.defra.gov.uk/publications/files/pb10589-securing-the-future-050307.pdf

[xxiii] Toledo, T et al (2008) In-vehicle data recorders for monitoring and feedback on drivers' behavior. *Transportation Research Part C* 16, 320-331, cited in Avineri, E et al. 'Individual Behaviour Change: Evidence in transport and public health', DfT, 2010

[xxiv] Thaler R and Sunstein C (2009) 'Nudge: Improving Decisions About Health, Wealth, and Happiness', Penguin.

[xxv] For more details of the Freight Best Practice Programme see: http://www.dft.gov.uk/pgr/freight/freightbestpracticeprogramme

[xxvi] For more information, see MINDSPACE: Influencing behaviour through public policy, available here: http://www.instituteforgovernment.org.uk/content/133/mindspace-influencing-behaviour-through-public-policy

[xxvii] 'Fare Review Conclusions', Strategic Rail Authority, 2003

[xxviii] Christmas, S. 'Nine Big Questions about Behaviour Change'. DfT, 2010 http://www.dft.gov.uk/pgr/scienceresearch/social/behaviour-changes/pdf/questions.pdf

[xxix] Avineri, E et al. 'Individual Behaviour Change: Evidence in transport and public health', DfT, 2010 http://www.dft.gov.uk/pgr/scienceresearch/social/behaviour-changes/pdf/transport-and-health.pdf

[xxx] National Institute for Clinical and Health Excellence (2007), *Behaviour change at population, community and individual levels,* Public Health Guidance 6

[xxxi] Based on the Nuffield 'intervention ladder'. Further information available here: http://www.nuffieldbioethics.org/public-health/public-health-policy-process-and-practice

[xxxii] Thaler R and Sunstein C (2009) 'Nudge: Improving Decisions About Health, Wealth, and Happiness', Penguin.

[xxxiii] Michie et al (2011) The Behaviour Change Wheel: a new method for characterising and designing behaviour change interventions, Implementation Science. Available here: http://www.implementationscience.com/content/pdf/1748-5908-6-42.pdf

[xxxiv] See DfT (2001) Logic mapping: hints and tips guide (http://www.dft.gov.uk/publications/logic-mapping-advice-guide)

[xxxv] For more details on what works in engaging public sector organisations, see: http://www.dft.gov.uk/pgr/scienceresearch/social/behaviour-changes/pdf/thinkpiece3.pdf

[xxxvi] For more details on what works in engaging businesses, see: http://www.dft.gov.uk/pgr/scienceresearch/social/behaviour-changes/pdf/influencing-business.pdf

[xxxvii] See also: HMT Magenta Book Chapter 3:

(http://www.hm-treasury.gov.uk/data_magentabook_index.htm)

[xxxviii] See also: DfT (2001) Logic mapping: hints and tips guide (http://www.dft.gov.uk/publications/logic-mapping-advice-guide) and HMT Magenta Book Chapter 2 (http://www.hm-treasury.gov.uk/data_magentabook_index.htm)

[xxxix] See also:

- HMT Magenta Book Chapter 2: (http://www.hm-treasury.gov.uk/data_magentabook_index.htm)
- DfT (2010) Guidance for Transport Impact Evaluations: Choosing an evaluation approach to achieve better attribution (http://www.dft.gov.uk/publications/guidance-for-transport-impact-evaluations)
- DfT (2009) Evaluating Transport Schemes which make Better Use of the Existing Network (http://www.dft.gov.uk/publications/evaluating-transport-schemes-making-better-use-existing-network)

[xl] See also: DfT (2009) Evaluating Transport Schemes which make Better Use of the Existing Network (http://www.dft.gov.uk/publications/evaluating-transport-schemes-making-better-use-existing-network)

[xli] See also: HMT Magenta Book Chapter 4 (http://www.hm-treasury.gov.uk/data_magentabook_index.htm)

[xlii] Based on Gorr, H. (1997) Die Logik der individuellen Verkehrsmittelwahl. Theorie und Entscheidungsverhalten im Personenverkehr (The Logic of Individual Travel Mode Choice. Theory and Decision Behaviour in Passenger Traffic). Focus, Gießen.

[xliii] Source: Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*, 179-211. Further information available here: http://people.umass.edu/~aizen/tpb.diag.html

[xliv] Source: Stern, P (2000). Towards a Coherent Theory of Environmentally Significant Behaviour. Journal of Social Issues 56 (3), 407-424.

[xlv] Triandis, H. (1977). *Interpersonal Behaviour*. Monterey, CA: Brookes/Cole.

[xlvi] Bamberg, S and Schmidt, P (2003). Incentives, Morality or Habit? Predicting students' car use for university routes with the models of Ajzen, Schwartz and Triandis. Environment and Behavior 35 (2) 248-287.

[xlvii] For a discussion on behavioural economic concepts, see Darnton, A. (2008) *GSR Behaviour Change Knowledge Review Reference Report: An overview of behaviour change models and their uses.* Available here: http://www.civilservice.gov.uk/wp-content/uploads/2011/09/Behaviour_change_reference_report_tcm6-9697.pdf

[xlviii] For more details on MINDSPACE see: Dolan P et al (2010) 'MINDSPACE – Influencing behaviour through public policy', Cabinet Office. Available here: http://www.instituteforgovernment.org.uk/images/files/MINDSPACE-full.pdf

[xlix] For more details on Social Practices see: http://www.sprg.ac.uk/ For more details on how Social Practice Theory can inform policy decisions relating to cycling, see: http://www.lancs.ac.uk/staff/shove/exhibits/cyclingdraftv2.pdf

[l] See: Prochaska, J and Velicer, W (1997) The Transtheoretical Model of Health Behavior Change. *American Journal of Health Promotion* 12 (1), 38-48. See here: http://www.uri.edu/research/cprc/Publications/PDFs/ByTitle/The%20Transtheoretical%20model%20of%20Health%20behavior%20change.pdf

[li] A report of the segmentation model is available here: http://www.dft.gov.uk/publications/climate-change-transport-choices-segmentation. A separate ('interim') report of the survey findings has been published here: http://www.dft.gov.uk/publications/climate-change-and-transport-choices/