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Behaviour Change

Report

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Committee Staff

The current staff of the Sub-Committee I are Daisy Ricketts (Clerk), Rachel Newton (Policy Analyst) and Cerise Burnett-Stuart (Committee Assistant).

Contact Details

All correspondence should be addressed to the Clerk of the Science and Technology Committee, Committee Office, House of Lords, London SW1A 0PW.
The telephone number for general enquiries is 020 7219 4963
The Committee's email address is hlscience@parliament.uk

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Q	refers to a question in oral evidence;
BC 1	refers to written evidence as listed in Appendix 2.

SUMMARY

The aim of much government policy is to bring about changes in people's behaviour and so a government's success will often depend on their ability to implement effective behaviour change interventions whilst, at the same time, avoiding significant harmful side effects.

Governments can use a variety of different types of policy interventions to change the behaviour of the population. These range from providing information or undertaking campaigns of persuasion that promote certain behaviour, to taxation and legislation. In Table 1 of this report we set out a schematic list of types of intervention.

The currently influential book *Nudge* by Richard Thaler and Cass Sunstein advocates a range of non-regulatory interventions that seek to influence behaviour by altering the context or environment in which people choose, and seek to influence behaviour in ways which people often do not notice. This approach differs from more traditional government attempts to change behaviour, which have either used regulatory interventions or relied on overt persuasion. The current Government have taken a considerable interest in the use of "nudge interventions". Consequently, one aim of this inquiry was to assess the evidence-base for the effectiveness of "nudges". However, we also examined evidence for the effectiveness of other types of policy intervention, regulatory and non-regulatory, and asked whether the Government make good use of the full range of available evidence when seeking to change behaviour.

We heard evidence that, although much was understood about human behaviour from basic research, there was relatively little evidence about how this understanding could be applied in practice to change the behaviour of populations ("applied research at a population level"). We make some recommendations to address this issue.

Although we acknowledge that further applied research at a population level is needed, we also found that the available evidence supports a number of conclusions. Our central finding is that non-regulatory measures used in isolation, including "nudges", are less likely to be effective. Effective policies often use a range of interventions.

We concluded that it is important to consider the whole range of possible interventions when policy interventions are designed. We place particular emphasis on this conclusion because the evidence we received indicated that the Government's preference for non-regulatory interventions has encouraged officials to exclude consideration of regulatory measures when thinking about behaviour change. Though there is a lack of applied research on changing behaviour at a population level, there is other available evidence that the Government need to use to better effect. We were therefore disappointed to find that, although we received some examples of evidence-based policies, such as policies on energy-efficient products and smoking cessation services, we were also given many examples of policies that had not taken account of available evidence, including policies on food labelling and alcohol pricing.

We also found that a lot more could, and should, be done to improve the evaluation of interventions. This is not only good practice but would help to build a body of research that could inform effective policies targeting population-level behaviour change.

Understanding behaviour and behaviour change are necessary for developing effective and efficient policies in all areas. Although this report draws on case studies that focus on the Department of Health and the Department for Transport, our conclusions and recommendations are directed to all Government departments.

Behaviour Change

CHAPTER 1: INTRODUCTION

1.1. Many of the goals to which governments aspire—such as bringing down levels of crime, reducing unemployment, increasing savings and meeting targets for carbon emissions—can be achieved only if people change their behaviour. Consequently, understanding how to change the behaviour of populations should be a concern for any government if it is to be successful. Recent examples of behaviour change initiatives that have had significant success include policies to reduce smoking and drink-driving and to increase the use of condoms to protect sexual health.

1.2. The current Government have said that they intend to use what they describe as more "intelligent ways" to change people's behaviour and so challenge "the assumption" that central government can only change behaviour by "rules and regulation".[1] As a result, since taking office, their focus has been on non-regulatory interventions and, in particular, on the concept of "nudging", an idea made fashionable in recent years by Richard Thaler and Cass Sunstein in their book *Nudge*. The purpose of this inquiry was to consider whether the Government's approach is an effective one and whether it can be improved. In doing so, we have looked at what the "sciences of human behaviour" can show about changing people's behaviour, how behaviour change research is applied to the formulation of Government policies and whether the Government have taken sufficient steps to ensure that behaviour change policies are evidence-based and properly evaluated.

1.3. We acknowledge that there are a range of issues about the ethical acceptability of behaviour change interventions and that, in some circumstances, changing behaviour will be considered controversial. Though these issues are important, we have not explored them in detail in this report but have instead highlighted them as matters which policy makers should take into account when formulating and implementing behaviour change interventions.

Scope of the inquiry

1.4. Although the current Government have focused on "tools … to achieve behaviour change that [are] non-regulatory in character", it became clear to us during the course of this inquiry that assessing the effectiveness of non-regulatory interventions could be done only by looking at them in the context of the whole range of interventions, both non-regulatory and regulatory. We have not, therefore, restricted ourselves to considering the effectiveness of non-regulatory interventions but have examined the evidence relating to a variety of policies to change behaviour.

1.5. That is not to say that we have assessed each and every Government policy which is intended to change behaviour. Instead, we have directed our attention to the extent to which the Government are making best use of the contribution

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1 *The Coalition: our programme for Government*, Cabinet Office (May 2010).

of disciplines such as neuroscience, psychology, sociology and behavioural economics to the formulation of policy.

1.6. To complement this broad approach, we have also undertaken two case studies. We chose these case studies on the ground that both policy areas raise significant challenges which need to be addressed urgently,[2] and for which changing behaviour will be central to success. The first looks at Government behaviour change interventions to reduce the prevalence of obesity and the second at interventions to reduce car use in order to limit CO_2 emissions. This choice of topics illustrates attempts to change behaviour first for the benefit of individuals, and second for the benefit of the wider community now and in the future.

1.7. Though, as a consequence of undertaking the case studies, this report highlights the work of the Department of Health (DH) and the Department for Transport (DfT), we believe that our conclusions and recommendations are relevant to all Government departments.

Structure of the report

1.8. In Chapter 2, we discuss some of the terminology relating to behaviour change, clarify how we use various terms in this report and briefly consider some of the ethical and other issues associated with behaviour change interventions. In Chapter 3, we look at what science can tell us about how to influence behaviour and the strength of the evidence-base. In Chapter 4, we consider the extent to which the Government make use of the available evidence about how to change behaviour and how this might be improved. In Chapter 5, we look at the potential impact of central Government's approach to changing behaviour. In Chapter 6, we consider whether the Government evaluate their interventions appropriately and discuss how evaluation could be improved. Chapter 7 sets out the findings from our two case studies.

Acknowledgements

1.9. The membership and interests of the Committee are set out in Appendix 1, and those who submitted written and oral evidence are listed in Appendix 2. The calls for evidence for this inquiry are reprinted in Appendix 3. In October 2010 we held a seminar on changing behaviour to reduce the prevalence of obesity, a note of which is set out in Appendix 4. In January 2011 we held a seminar on changing behaviour to reduce emissions from car use, a note of which is set out in Appendix 5. In February 2011 we held a seminar on the ethics of behaviour change, a note of which is set out in Appendix 6. We thank all those who assisted us in our work.

1.10. Finally, we are grateful to our Specialist Adviser, Professor Charles Abraham, Professor of Behaviour Change at the Peninsula Medical School at the University of Exeter, for his expertise and guidance during this inquiry. We stress, however, that the conclusions we draw and the recommendations we make are ours alone.

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[2] A 2007 Foresight report, *Tackling obesities: future choices*, estimated that, without action, obesity-related diseases will cost society £49.9 billion a year by 2050. The Climate Change Act 2008 requires the UK to cut greenhouse gas emissions by 80% by 2050.

CHAPTER 2: DEFINITIONS, CATEGORISATION AND THE ETHICS OF BEHAVIOUR CHANGE INTERVENTIONS

2.1. In this Chapter we look at the terminology associated with behaviour change, including "nudging". We also discuss some factors that may be relevant to determining whether a behaviour change intervention will be publicly and ethically acceptable.

Definitions and categorisation

The "sciences of human behaviour"

2.2. There is no single science of behaviour change. A number of scientific disciplines, including neuroscience, psychology, sociology and behavioural economics, contribute to what is known about human behaviour and we refer to these sciences collectively as the "sciences of human behaviour". Behaviour change interventions apply findings, drawn from these various sciences, in order to influence human behaviour.

A "behaviour change intervention"

2.3. A wide variety of types of policies affect the way people behave.[3] Table 1 (which builds on the Nuffield Ladder of Interventions)[4] sets out a possible taxonomy, including examples, of different types of intervention. Some witnesses argued that the concept of "behaviour change intervention" could not usefully be defined on the ground that all government policies include, to a greater or lesser extent, some element of intended behaviour change.[5] Whilst we acknowledge the force of this point, and encourage policy makers always to consider the behavioural implications of a policy, we have focused on those interventions where the principal intention is to change people's behaviour. We have referred to these interventions as "behaviour change interventions".

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3 BC 76, BC 105, BC 107, BC 108, BC 110.

4 The Nuffield Ladder of Interventions is an analysis of interventions developed by the Nuffield Council of Bioethics in a report on ethical issues in public health published in 2007. It classifies categories of public policies according to degree of intervention in the personal life of individuals. (*Public health: the ethical issues*, Nuffield Council of Bioethics (2007)).

5 BC 52, BC 76, BC 83, BC 86.

TABLE 1

Table of interventions

	Regulation of the individual		Fiscal measures directed at the individual		Non-regulatory and non-fiscal measures with relation to the individual				
						Choice Architecture ("Nudges")			
Interventions category	Eliminate choice	Restrict choice	Guide and enable choice						
			Fiscal disincentives	Fiscal incentives	Non-fiscal incentives and disincentives	Persuasion	Provision of information	Changes to physical environment	Changes to the default policy	Use of social norms and salience
Examples of policy interventions	Prohibiting goods or services e.g. banning certain drugs	Restricting the options available to individuals e.g. outlawing smoking in public places	Fiscal policies to make behaviours more costly e.g. taxation on cigarettes or congestion charging in towns and cities	Fiscal policies to make behaviours financially beneficial e.g. tax breaks on the purchase of bicycles or paying individuals to recycle	Policies which reward or penalise certain behaviours e.g. time off work to volunteer	Persuading individuals using argument e.g. GPs persuading people to drink less, counselling services or marketing campaigns	Providing information in e.g. leaflets showing the carbon usage of household appliances **Regulation to require businesses to use front of pack nutritional labelling, or restaurants to provide calorific information on menus*	Altering the environment e.g. traffic calming measures or designing buildings with fewer lifts **Regulation to require businesses to remove confectionery from checkouts, or the restriction of advertising of unhealthy products*	Changing the default option e.g. requiring people to opt out of rather than opt in to organ donation or providing salad as the default side dish	Providing information about what others are doing e.g. information about an individual's energy usage compared to the rest of the street **Regulation to require energy companies to provide information about average usage*

*Note: * Demonstrates how regulation of businesses might be used to guide the choice of individuals, thus distinguishing it from regulation which restricts or eliminates the choice of individual.*

Behaviour change and non-regulatory tools

2.4. Although several Government officials who gave evidence to us recognised that a broad range of policy instruments, including regulation and taxation, could be used to change behaviour,[6] some suggested that the Government's emphasis on non-regulatory tools had led to a tendency for behaviour change to be linked only to non-regulatory interventions.[7] Gemma Harper, Chief Social Scientist at the Department for the Environment, Food and Rural Affairs (Defra), for example, told us that in her experience, within central government, "behaviour change is very much used as a shorthand for alternatives to regulation and fiscal measures".[8] The evidence of Oliver Letwin MP, Minister of State at the Cabinet Office, also reflected this ambivalence. At one point, he used a broad definition of behaviour change intervention when he suggested that legislation was a "form of achieving change".[9] But, later, he contrasted "behavioural science" and "behavioural insights" with regulation,[10] suggesting that behaviour change policies included only non-regulatory interventions. We consider the implications of this uncertainty in the Government's approach to behaviour change in Chapter 5.

What is a "nudge"?

2.5. The Government's non-regulatory approach to behaviour change has often been described as "nudging". The Cabinet Office's Behavioural Insights Team (BIT) (see Box 7, page 32) is referred to in the media as the "nudge unit",[11] and "nudge" has been used in Government policy documents, Ministerial statements and debates in the House of Commons.[12]

2.6. The word "nudge" was originally used in the context of influencing behaviour by Richard Thaler and Cass Sunstein.[13] They define a "nudge" as

> "... any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting the fruit at eye level counts as a nudge. Banning junk food does not."[14]

2.7. "Choice architecture" refers to the environment in which an individual makes choices. Changing the way options are presented or altering the social and physical environment can make it much more likely that a particular choice becomes the natural or default preference. Individuals may often be

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6 QQ 2, 55, 58.

7 QQ 2, 54, 55, 294.

8 Q 54.

9 Q 703.

10 Q 715.

11 For example: "David Cameron's 'nudge unit' aims to improve economic behaviour", *The Guardian*, 9 September 2010; "Nudge unit: how the Government wants to change the way we think", *The Belfast Times*, 3 January 2011; "Whitehall won't be nudged", *The Telegraph*, 17 February 2011.

12 For example: *Creating growth, cutting carbon*, Department for Transport (January 2011); HL Deb 30 November 2010 col 669; HL Deb 19 January 2011 col 824.

13 *Nudge*, Thaler and Sunstein (2008).

14 *Ibid*, p.8.

unaware of the effect that changes in the choice architecture have on their individual choices and actions. In these circumstances, nudges can be understood to have influenced the non-deliberative aspect of a person's choices or actions (see paragraph 3.4 below). Businesses often seek to prompt non-deliberative actions by their consumers through, for example, by setting default portion sizes or using product placement in films and television programmes.

2.8. We received differing accounts of the Government's use of "nudge". For example, the Sustainable Transport White Paper contrasts "nudging" with anything that forbids or restricts choice, and Norman Baker MP, Parliamentary Under Secretary of State for Transport, equated "nudging" with a broad range of non-regulatory interventions, such as the provision of bus and train timetables. Mr Letwin, however, suggested that "nudging" had to involve "prompted choice" and therefore excluded informational and promotional forms of non-regulatory intervention.[15]

2.9. In our view, interventions which may be described as "nudging" are not synonymous with, but rather are a subset of, non-regulatory interventions (see Table 1). We have drawn this conclusion because, first, not all non-regulatory interventions are nudges in the standard understanding of the term. Nudges prompt choices without getting people to consider their options consciously, and therefore do not include openly persuasive interventions such as media campaigns and the straightforward provision of information. Secondly, "nudges" themselves may be provided through regulatory means. For example, businesses may be required by regulation to provide a particular choice architecture in order to "nudge" individuals. Dr David Halpern, Head of the Cabinet Office's BIT, acknowledged this latter point when he said: "of course you can construct regulation to enable choice".[16] Similarly, Anne Milton MP, Minister for Public Health at the Department of Health (DH), said: "you can use regulation to nudge people".[17]

Interventions and ethical acceptability

2.10. Many witnesses accepted the presumption that the state should develop and pursue policies which are of benefit to individuals and to the wider population. Consequently, they should aim not only to provide conditions in which individuals can achieve those benefits but also act to make it easier for them to do so. This position allows for governments to intervene, for example, to tackle obesity and reduce harmful alcohol consumption on the ground that individual health is a good which the government have a responsibility to promote.

2.11. Even when a government is justified in taking steps to tackle a problem, the measures used to resolve the problem may not necessarily be judged ethically acceptable. The evidence highlighted two factors which might bear on the acceptability of an intervention. First, the degree to which an intervention intrudes into an individual's life. Secondly, the extent to which an intervention is covert. Witnesses also related the ethical acceptability of an

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15 Q 703.

16 Q 47.

17 Q 705.

intervention to the extent to which it is popular with, or welcomed by, the public.

Intrusiveness

2.12. Some witnesses argued that the most intrusive interventions would require the most justification and should be deployed with particular care because they restrict or eliminate choice.[18] The Government said that they "aim to apply behaviour change theory only in ways that minimise intrusion".[19] This corresponds to the widely held classical liberal view, reflected in parts of the European Convention on Human Rights, that certain individual freedoms are intrinsically valuable and should be protected unless there is strong justification for doing otherwise—as, for example, the curtailing of freedom imposed by a prison sentence is justified because it prevents criminals from causing harm to others. The importance of protecting freedoms is a reason for testing the proportionality of proposed behaviour change interventions, but does not provide any single metric by which proportionality can be judged. As a general point, we accept that regulatory interventions which restrict choice may be judged more acceptable if there is good evidence that they will be effective in tackling an urgent issue which is having significant detrimental effects on the population.

2.13. In seeking to avoid interventions that restrict choice, the Government have focused on interventions which enable and encourage certain choices.[20] Several witnesses argued however that interventions which enable and encourage choice by affecting non-deliberative processes, such as "nudges", also involve ethical issues because they involve altering behaviour through mechanisms of which people are not obviously aware.[21] This raises an interesting question about the extent to which nudging is compatible with the Government's commitment to "extend transparency to every area of public life".[22] It also highlights the potential ethical implications of the widespread use of nudges by commercial organisations.

Transparency

2.14. Professor Luc Bovens, London School of Economics and Political Science, suggested that there were two sorts of transparency which might be relevant to behaviour change interventions. Transparency might mean telling people about an intervention directly, or it might mean ensuring that a perceptive person could discern for themselves that an intervention had been implemented. He suggested that the latter, weaker form of transparency distinguished nudges from subliminal messaging, which was widely considered to be ethically unacceptable on the ground that it was wrong to influence people in a way that they are incapable of identifying . Professor Bovens concluded that ethical acceptability did not require governments to explain that an intervention had been implemented,

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18 BC 75, BC 81, BC 107.

19 BC 114.

20 The Government's written submission to the inquiry quotes from the Coalition agreement that this Government "will be a much smarter one, shunning the bureaucratic levers of the past and finding intelligent ways to encourage support and enable people to make better choices for themselves" (BC 114).

21 Q 109.

22 *The Coalition: our programme for Government*, *op. cit.*

especially as this fuller sort of transparency might limit the effectiveness of the intervention. On this view, an intervention would be acceptable provided those who were nudged had the ability to discern its implementation (even if in practice they almost never did so).[23]

2.15. The line which divides an intervention that it is impossible to discern from one that it might be possible to discern, but almost never will be, is imprecise. We note however that this weaker form of transparency is all that is required of businesses when they seek to influence our behaviour through nudges. Retailers do not, for example, tell consumers that they have designed their stores in a way that is intended to encourage purchasing of specific types of product, such as confectionery.

Ethical acceptability and "public permission"

2.16. Some witnesses suggested that the ethical acceptability of an intervention was related to its level of public acceptance, or popularity, or even the degree to which its use was based on "public permission".[24] We are not convinced by this link. For example, levels of public acceptance for interventions might improve after their introduction, as happened for example with the ban on smoking in public places.[25] Moreover, the very fact that the degree to which the public accepts, or welcomes, an intervention can change over time suggests that this is likely to be determined by assumptions about the impact of the intervention which had perhaps initially been based on incomplete information. Consequently, it may be ethically acceptable for governments to introduce a measure even though it is unpopular if there is strong evidence that it will be effective and beneficial. For example, the ban on smoking in public places was not ethically unacceptable despite the fact that it initially had only modest levels of public acceptance.

2.17. It is important to note, however, that a measure which does not have public support is, in general, less likely to succeed. Professor Mike Kelly, Director of Clinical Excellence at National Institute of Health and Clinical Excellence (NICE) drew our attention, for example, to the adverse impact of using pricing as the primary mechanism of control of alcohol in Scandinavia,[26] and Ms Milton appeared to agree when she observed that "the trouble with nannying is that it can be hectoring, and produce the opposite effect".[27]

Distinction between individuals and business

2.18. The discussion so far has focused on interventions which affect individuals. It was suggested to us that the arguments for the ethical acceptability of an intervention are different if it applies to businesses rather than individuals. Professor Thomas Baldwin, Professor of Philosophy, University of York, summed this up as follows:

> "… it is individual persons whose status as rational agents is a fundamental value of liberal society; but commercial organisations are not rational agents of this kind … So they do not merit the kind of

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23 Appendix 6.

24 BC 81, BC 103, BC 105, Q 47.

25 Appendix 6.

26 Q 182.

27 Q 705.

> liberal freedom from interference which applies to individual persons, and there is, therefore, no principled objection to regulating them in restrictive ways. What they can nonetheless demand is that they be regulated only in ways which are effective, well-motivated, and fair; and they can argue that if the ends sought by regulation can be achieved by voluntary codes, then this approach should be tried first. So here too there is an intervention ladder which starts from voluntary codes and ends up with restrictive formal regulations. But in this case the relevant considerations are primarily pragmatic rather than principled."[28]

We agree with Professor Baldwin insofar as he points out that different considerations should apply to interventions which affect individuals directly than those which affect commercial organisations directly. The latter are more likely to be pragmatic, rather than ethical, considerations.

Conclusion

2.19. Though governments must consider the acceptability of any behaviour change intervention, there is no set of rules against which to determine whether or not an intervention is acceptable. Rather, ethical acceptability depends to a large extent on an intervention's proportionality. Proportionality can be determined by looking at the scale of the problem the intervention is designed to solve and the evidence that it will be effective in doing so. This should be weighed against ethical considerations including intrusiveness, restriction of freedom and transparency. We do not believe that levels of public acceptance or "public permission" are a necessary pre-condition of an ethically acceptable intervention, but given the potential impact of low levels of public acceptance on the effectiveness of an intervention, this must be relevant to any policy decision.

2.20. **The idea of the Government intervening to change people's behaviour will often be controversial, and so it is important that ministers are always able to explain the evidence-base of any proposed behaviour change intervention, and why it is a necessary and proportionate means of addressing a well-defined problem.**

[28] BC 66.

CHAPTER 3: UNDERSTANDING WHAT INFLUENCES BEHAVIOUR

Different kinds of evidence

3.1. Current understanding of how to change human behaviour is derived from the various sciences of human behaviour and from two overlapping types of research.[29] First, basic research, consisting of the development of theory describing the processes which shape behaviour and empirical, including experimental, tests of this theory. Secondly, applied research, which is the application of basic research to understanding how behaviour can be changed in everyday setting. When applied research is conducted using samples that are representative of the population to demonstrate effective behaviour change it is particularly relevant to policy makers. In this report, we refer to the latter form of research as "research at a population level". Of course, for evidence to be of most use it must have been evaluated rigorously and over the long-term. We discuss evaluation further in Chapter 7.

Understanding behaviour: basic research

What influences behaviour?

3.2. Basic research confirms that human behaviour is the product of a multitude of interrelated factors. This is true both of particular actions and also of patterns of behaviour over a lifetime. Given the complexity of factors underpinning behaviour, it is impossible to summarise concisely what is known about those factors and how they interact. Influences on behaviour can, however, be characterised broadly as comprising: genetics, individual thoughts and feelings, the physical environment, social interaction (with other individuals), social identity (interaction within and between groups), and the macro-social environment.

3.3. We can also say that some actions are consciously planned, or deliberative, while others are governed by automatic, or non-deliberative, processes (the focus of "nudges"). For example, a decision to buy a new car will usually be made only after much conscious deliberation (coupled with unconscious motivations), but when a car is being driven down a familiar route the driver will be able to navigate without thinking about where they are going, so acting automatically. The distinction between deliberative and non-deliberative choices and actions are described in terms of dual process theories. Professor Theresa Marteau, Professor of Health Psychology, King's College London, provided an overview in her evidence to us:

> "We can understand people's behaviour as comprising the interaction between two systems. The first is a reflective system, whereby what we do is a result of goals that reflect our values and where we're aware of what we're doing. The other system, which actually accounts for much more of our behaviour, is an automatic system, whereby we're often not aware of the impulses that have generated our behaviour. There is an increasing recognition that both these systems are very important in explaining our behaviour. Often they work synergistically, so they work

[29] We recognise that the terminology used to distinguish between different types of research is the subject of debate and that distinctions between different categories of research are not clear cut. Identifying categories is, however, necessary for the purposes of discussion.

> together well. Sometimes they work antagonistically. This is one of the reasons why, while many of us have very good intentions, we often find ourselves behaving in ways that go against our intentions."[30]

Some witnesses argued that public policy has placed too much emphasis on the reflective system or deliberative decision-making, leading to an assumption that behaviour change can only be achieved by appealing to knowledge and values and, as a result, underestimating the importance of the automatic or non-deliberative aspect of making choices.[31]

3.4. Both deliberative and non-deliberative choices and actions can be affected by social factors (such as personal interaction and interaction within, and between, groups) and the large-scale social context (such as state of the economy). Behaviour is also influenced by the physical environment in which it takes place. The ready availability of cheap and unhealthy food, for example, makes it more likely that people will consume it. Similarly, if there are very busy roads and no cycling lanes, people are less likely to travel by bike. Professor Marteau acknowledged the contribution of behavioural economics in highlighting the contextual and automatic determinants of behaviour.[32] She observed that "... behavioural economists have been extremely successful ... in highlighting to policy makers the potential behaviour change gains from going beyond information-based campaigns, which rarely effect significant behavioural change, to alter 'choice architecture' with its potential to be far more effective".[33]

Gaps in understanding

3.5. Several witnesses identified a number of gaps in understanding about human behaviour. Examples given to us included a lack of understanding about aspects of the automatic system, particularly in relation to how emotional processes regulate everyday behaviour;[34] a lack of comparative research into the limits to the transferability of behaviour change interventions across cultural differences;[35] uncertainty about how genes interact with environmental and social factors to cause behaviour;[36] and, a lack of understanding about the effect of social dynamics on behaviour.[37] Other witnesses commented on the challenges involved in integrating the numerous theories of behaviour which were emerging from across the range of sciences of human behaviour. In this regard, Professor Michie, Professor of Health Psychology at University London, argued that, though there had been advances in multi-disciplinary working, more work needed to be done.[38]

Applied research at a population level

3.6. Whilst theoretical understanding of behaviour change appears to be strong, several witnesses drew our attention to the comparative lack of research at a

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30 Q 331.

31 BC 71, BC 96.

32 BC 103, BC 110.

33 BC 110.

34 BC 54, BC 72, BC 96, BC 108.

35 BC 13.

36 BC 45, BC 108.

37 BC 54, BC 90.

38 Q 88.

population level.[39] NICE, for example, commented in relation to public health interventions that:

> "The majority of *experimental* evidence about behaviour change relates to individual approaches, and comes largely from disciplines within psychology ... much of the evidence is limited and it is rare that evidence can be extrapolated or generalised from those interventions to the wider population with confidence and without caveats ... There is less experimental evidence about what works to influence behaviour when working with or at community or population levels."[40]

They further noted that there is "a marked lack of information about what works to change behaviour at policy level".[41]

3.7. Richard Bartholomew, joint head of the Government Social Research service (GSR), said that though there were theories explaining why people behaved in certain ways there was a dearth of clear evidence about how to translate that into change.[42] The British Psychological Society (BPS) agreed to some extent, noting that further research was required "to develop cost-effective strategies that can be adopted and utilised in practice".[43] The Sustainable Development Commission said that there needed to be more "understanding of what interventions work best in practice".[44]

3.8. Our impression that there is relatively little evidence of the effectiveness of particular behaviour change interventions at a population level has been reinforced by how few substantial responses we received following our request for examples of successful interventions. A number of witnesses also alluded to a lack of evidence about the cost-effectiveness of interventions[45] and to a disappointing lack of long-term data against which to judge the effectiveness of interventions over sustained periods.[46]

3.9. Businesses, on the other hand, have demonstrated success at changing behaviour patterns on a large scale through measures like advertising and product promotion.[47] However, governments can face greater challenges than businesses in changing behaviour. Government may often wish to establish new behaviour patterns, such as getting people to take more exercise, or helping people to break ingrained habits, like smoking cigarettes. This is difficult to achieve. By contrast, businesses normally seek to sell people those things that they like and want.

Conclusion

3.10. **There is a lack of applied research at a population level to support specific interventions to change the behaviour of large groups of people (including a lack of evidence on cost-effectiveness and long-term impact). This is a barrier to the formulation of evidence-based**

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39 BC 52, BC 58, BC 73, BC 83, BC 94, BC 105, BC 108, BC 110.

40 BC 52.

41 *Ibid*.

42 Q 25.

43 BC 105.

44 BC 83.

45 BC 42, BC 52, BC 67, BC 103, BC 108.

46 BC 52, BC 70, BC 105, BC 109

47 BC 101.

policies to change behaviour. To address this problem, the Government will need both to evaluate their own behaviour change interventions rigorously and establish new evidence by commissioning and funding more applied behavioural research on this scale. Recommendations are made in Chapters 4 and 6 about how this can be achieved.

CHAPTER 4: EVIDENCE-BASED POLICY

Are Government policies evidence-based?

4.1. Behaviour change interventions based on evidence about what works are more likely to be successful than those which are not. We have concluded that there is marked lack of research at a population level (see paragraph 3.11 above). This leads us to two further conclusions: first, the Government should take steps to ensure that this sort of research is undertaken; and, secondly, policies should, insofar as is feasible, reflect the evidence that is, or becomes, available.

Examples of evidence-based policies

4.2. We were given a number of examples of policies which were, to a greater or lesser extent, designed to reflect the available evidence. These included smoking cessation services (see Box 1, page 20), the Health Trainers Intervention (see Box 15, page 49) and energy efficient products policy (see Box 6, page 27).[48] A common feature of these examples is that they were all developed by, or in consultation with, academics with expertise in changing behaviour.

BOX 1

NHS Centre for Smoking Cessation and Training

The NHS Centre for Smoking Cessation and Training (NCSCT) was set up after implementation of Stop Smoking Services (SSSs) across the United Kingdom. The Centre was established in 2009 "to assess training needs, develop training standards, pilot and evaluate training programmes, develop a certification system for smoking cessation practitioners, deliver the training across England and continuously evaluate it, develop an accreditation system for trainers and courses and contribute to national policy development".[49] Professor Michie noted that the team at the NCSCT undertook systematic reviews and looked at the Cochrane evidence reviews, alongside analysis of DH data on smoking cessation. That evidence was then used to form the basis of outcome measures and interventions which have been put into practice. Assessment and training have been continually monitored and revised in order to learn from experience and to take account of scientific advances, new evidence and contextual changes. The training is evaluated by its impact on stop smoking success rates, using comparisons of success rates of practitioners against controls. Participants' feedback on the training as well as their self-reported confidence in their competences are also assessed and used to evaluate training.[50]

Examples of policies which were not evidence-based

4.3. We were also given examples of (previous and current) Government policies which were not based on evidence. Two of these, minimum alcohol pricing and the Act on CO_2 campaign, are described below (see Boxes 2 and 3, page

[48] We note that the Health Trainers programme had substantial flaws in its evaluation and so must be considered poorly designed in that regard; however, its design did reflect the available evidence.

[49] BC 27.

[50] *Ibid*.

21). The case studies provided further examples: witnesses observed that those commissioning weight management interventions at a local level were often insufficiently knowledgeable to make evidence-based decisions (see paragraph 7.24 below), and the DfT policies in relation to sustainable transport were said not to reflect the evidence about the effectiveness of disincentives to car use (see paragraph 7.36 below).

BOX 2

Act on CO_2

'Act on CO_2' was a cross-Government brand launched in 2007 with the aim of getting people to reduce their carbon footprint. It included a range of communications activities relating to home energy usage, smarter driving and car purchasing. The Sustainable Development Commission noted that the campaign 'Act on CO_2' had been criticised for "failing to communicate effectively with the public, for being too negative in its messages, and for not including any supporting interventions to address the barriers to adopting low carbon behaviours".[51] The campaign is an example of how policy was not based on the available evidence because:

- It involved only the provision of information. The Green Alliance note that it is now widely known "that information deficit models in practice rarely work: information alone is insufficient to lead to action".[52]
- It did not include a range of interventions within a multi-component package to tackle a number of causes of behaviour and barriers to change.

BOX 3

Alcohol pricing

Professor Kelly and Professor Michie told us in November 2010 that there was good evidence about the effectiveness of alcohol pricing on reducing alcohol related harm but that it had not fed through to Government alcohol policy. Subsequently, in January 2011, the Home Office announced a ban on the sale of alcohol below the rate of duty plus VAT.[53]

This policy has been criticised however for not reflecting the evidence about the level at which pricing affects behaviour. Requiring alcohol to be sold for no less than the rate of duty plus VAT means that minimum price for a unit of beer would be around 21p and for spirits around 28p. The NICE guidance on preventing harmful drinking published in 2010 shows that at the minimum price level proposed by the Government, a reduction in consumption of between 0.1% and 0.4% could be expected. However, a minimum price of 40p per unit would reduce consumption by 2.4%, while minimum prices of 50p and 60p would reduce consumption by 6.7% and 11.9% respectively.[54]

Reasons why policies may not be evidence-based

4.4. There are two reasons, in addition to a lack of applied research at a population level (see paragraphs 4.9–4.16 below), why policies are not always

[51] BC 83.

[52] BC 107.

[53] HC Deb 18 January 2011 col 34WS.

[54] *Alcohol use disorders—preventing harmful drinking*, NICE (2010).

based on the best available evidence: ministers are unaware of relevant evidence, or they are aware of the evidence but choose not to reflect it in policy decisions.

4.5. Where ministers are unaware of relevant evidence, this is a failure of the process by which the Government are informed about research findings—a process often described as the translation of research.[55] We were given a number of reasons for the breakdown of this process: a lack of significant involvement of Government social scientists and economists; an absence of adequate mechanisms for communication between policy makers and external researchers; an inadequate understanding of behavioural research by policy makers; and an absence of adequate mechanisms for sharing knowledge within Government.[56] We consider how to address these problems in paragraphs 4.17 to 4.42 below.

4.6. Even where ministers are aware of relevant evidence, other factors may lead them to disregard it. This appears to have been the case with current alcohol pricing policy (see Box 3, page 21). Norman Baker MP, a Minister at the DfT, explained: "evidence is best used to inform policy … but not to drive it in an unreconstituted way"; the Government "have to make choices based not just on the evidence-base … but also on the political objectives of the Government at a particular time, and to ensure fairness across the country".[57] Other considerations might include immediate reaction to events, judgements about ethical acceptability, cost and cost-effectiveness. These considerations might justifiably affect the extent to which a policy is based on the available evidence.

4.7. **We acknowledge that there will be occasions when it is legitimate for a government not to implement behaviour change interventions for which there is good evidence of effectiveness. In these circumstances, however, we believe that ministers have a responsibility to explain why they have decided not to do so.**

4.8. **We agree with the principle, stated in the Government's *Principles of Scientific Advice*, that ministers should explain publicly their reasons for policy decisions, particularly when a decision is not consistent with scientific advice and, in doing so, should accurately represent the evidence. This places a responsibility on scientists and social scientists within government to ensure that ministers are provided with accurate and up-to-date advice on the available evidence about how to change behaviour so that they can identify where and why they are not basing policies on that evidence.**

Addressing the barriers to evidence-based policy

Applied research at a population level

4.9. In paragraph 3.8, we conclude that there is a lack of applied research at a population level. Mr Bartholomew of the GSR told us about the "frustration" of policy makers at the fact that, although there is very good academic research, researchers often do not take the final step and answer

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55 BC 83, Q141.

56 BC 52, BC 83, BC 99, BC 100, BC 110, BC 113, Q 131.

57 Q 733.

the question "what would you do about it?"[58] We were provided with a number of reasons why this sort of research is lacking.

Poor evaluation of Government behaviour change interventions

4.10. It is clear that if the Government's attempts to change behaviour at a population level were rigorously evaluated, this would provide evidence about effective interventions. Evaluation is discussed in Chapter 7.

Funding and research capacity

4.11. There was disagreement in the evidence we received about whether, on the one hand, there is research capacity to conduct research at a population level but insufficient funding available to support it or whether, on the other hand, there is simply insufficient research capacity, so that further funding would make little difference. The majority of the evidence we received on this issue related to public health research.

4.12. The BPS suggested that the problem was one of funding: there would be more research at a population level if there were more "funding [of] evidence-based translational research to develop cost-effective strategies that can be adopted and utilised in practice".[59] Many other witnesses agreed. NICE argued, for example, that "the UK's capacity for this kind of research is good with much potential" (albeit "disparate and often highly individualistic") but "there is not enough funding available for behaviour change evaluation ..."[60] Professor Karen Lucas, Department for Transport Studies at the University of Oxford, agreed, stating: "... there is sufficient research expertise, but insufficient research funding and not enough interdisciplinary interaction on this subject ..."[61]

4.13. In relation to funding, Dr Halpern and Professor Michie both highlighted the findings of a 2006 report by the UK Clinical Research Collaboration which estimated that 2.5% of health research funding is spend on prevention and just 0.5% on primary behavioural factors, despite the fact that understanding how to change behaviour is of significant potential benefit.[62] DH responded: "research with relevance to behavioural factors is supported through most of our funding streams" but "spend on this cannot be disaggregated from total spend across the portfolio".[63]

4.14. Professor Dame Sally Davies, Director General of Research and Development and Chief Scientific Adviser for DH and the NHS, suggested that the block to behavioral research was not a lack of funding but rather a lack of research capacity. Other witnesses agreed that research capacity was the more important issue.[64] Professor Marteau and Dr Haynes, for example, noted in relation to health research that:

> "At the academic level and for health-related interventions, the development of [National Institute for Health Research] and the National

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58 Q 33.

59 BC 105.

60 BC 52.

61 BC 11.

62 *UK Health Research Analysis*, UK Clinical Research Collaboration (2006).

63 BC 151.

64 BC 44, BC 128.

Prevention Research Initiative means that there is probably now as much money as there is capacity to develop and evaluate interventions."[65]

Professor Erik Millstone, Professor in Science and Technology Policy at the University of Sussex, said, more broadly, that "... there is very little capacity in the UK to conduct research that is of practical relevance".[66] Dr Tim Chatterton, University of the West of England, agreed that there was scope to build greater capacity in academia for this kind of work.[67]

4.15. We were, nonetheless, provided with a number of examples of how the Government are providing funding for the development of research at a population level in collaboration with the research councils.[68] We set out two of them below (see Boxes 4 and 5, page 24).

BOX 4

The Sustainable Behaviours Research Groups: Defra and the ESRC

The Sustainable Behaviours Research Groups were begun and funded by Defra, the Economic and Social Research Council (ESRC) and the Scottish Government in order to enhance the evidence-base in this field and specifically to develop research in a form that could be used by policy makers. The groups are researching issues including the rebound effects of behavioural changes, the role of routine and habit, and circumstances which facilitate or constrain sustainable behaviour. Both research groups are involved in evidence synthesis and investigating issues relating to the use of evidence by policy officials.

An advisory group has been established, made up of the funders, leading academics from the sustainability field and two independent members (one representing businesses and the other the third sector). This group provides a challenge function from the different fields of expertise and will optimise investments by broadening the reach of findings. Defra has also undertaken a policy timeline mapping exercise so that findings feed into policy objectives.

BOX 5

National Prevention Research Initiative (NPRI): DH and the MRC

DH Policy Research Programme spent £34 million in 2009–10. As part of this the department provides funding to the NPRI alongside the devolved governments and third sector organisations. The aim of the NPRI is to develop and implement successful, cost-effective interventions that reduce people's risk of developing major diseases by influencing their health behaviours. The NPRI has so far committed £33 million to research projects looking at the use of alcohol and tobacco, and diet and physical activity. The most recent calls for research proposal focus funding on cross-disciplinary research that has a large potential influence on population health.

In February 2011, Anne Milton MP, Minister for Public Health, established an National Institute for Health Research School for Public Health Research in order to increase the evidence-base for effective public health practice. DH has also established a Policy Research Unit on Behaviour and Health which will focus on behaviour such as diet and physical activity.

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65 BC 110.

66 BC 28.

67 Q 144.

68 QQ 59, 79, 116, 120, 301, 311.

Conclusion

4.16. Whilst we welcome efforts by some departments to work collaboratively with academics to develop behavioural research, further capacity to conduct research at a population level needs to be developed. Funding for research of this kind is a necessary in order to build this capacity. The long-term evaluation of interventions using population-representative samples will be expensive and it will be necessary for funding to be made available before this work can be carried out. **We urge ministers to consult their departmental Chief Scientific Advisers (CSAs) about whether the amount of money spent on applied behaviour change research at a population level is sufficient to meet their policy needs.**

Translation of research

Role of Government scientists

4.17. Government scientists have an important role in ensuring that academic research is used to inform policy decisions. Professor Kelly noted the need for "a specialist way of making that link"[69] between researchers and policy makers, in order to bring the two very different cultures together. This should be core work for Government scientists.

4.18. A cross-departmental social science resource is provided by the Government Economic Service (GES) and the Government Social Research service (GSR) which are responsible for giving "evidence-based advice to support the rationale, objectives, appraisal, monitoring, evaluation and feedback to support effective policy making and delivery".[70] Government economists and social scientists are civil servants who work within particular Government departments in order to ensure that policies formulated within their department are "guided by the best available analysis and evidence".[71] Mr Bartholomew, joint head of the GSR, described his role within his department as ensuring that policy makers were made aware of the most up-to-date scientific findings, including those about behaviour change, in order to enable effective evidence-based policy.[72] The Government Social Research Unit and Government Economic Service Team in HM Treasury (now the combined Government Economic and Social Research Team) provide the professional support and leadership for social researchers and economists across all government departments.[73]

The Government Chief Social Scientist

4.19. The Government's Chief Social Scientist (CSS), the head of the social research profession in government, has in the past been an independent expert in the social sciences. The post has, however, most recently been filled by two government social scientists from the Department of Education and the Department for Work and Pensions.[74] Professor Sir John Beddington,

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69 Q 159.

70 BC 24.

71 *Ibid.*

72 Q 18.

73 *Ibid.*

74 Q 45.

Chief Government Scientific Adviser (GCSA), confirmed that the CSS is a job currently "divided between two civil servants".[75] The CSS sits on the Heads of Analysis (HoA) group alongside the heads of the other analytical professions, including the GCSA in his capacity as Head of Science and Engineering Profession, and heads of profession for economics, statistics and operational research. The role of the HoA group is to "provide leadership to all analysts in government and champion first rate analysis across government". [76]

4.20. The majority of government departments also have a departmental CSA who works within their department to "ensure that science and engineering are at the core of decisions within departments and across government".[77] The network of departmental CSAs works closely with the GCSA through the Chief Scientific Advisers Committee, one of the functions of which is to facilitate communication on high profile science issues and those posing new challenges for government.[78] We note however that departmental CSAs belong to a different profession from that of the social scientists working within their departments and it is not clear what responsibility CSAs have for the performance and development of social scientists. Sir John Beddington confirmed, when giving evidence to this Committee on science spending in May 2011, that the Government "do not have anybody as a Chief Scientific Adviser who has a background in social research at the moment".[79]

4.21. Professor Marteau was critical of the GES and GSR and suggested they were not doing enough to drive forward an agenda of evidence-based policy making.[80] Academics from the Faculty of Humanities and Social Sciences at the University of Bath also noted that "the profile, status and consequent influence of Government Social Research staff in informing the policy strategy and delivery ... varies across different departments".[81] We were also concerned to hear that current capacity within Government with regard to behaviour change expertise was "variable" and that though a few departments have some notable expertise, others have less or none at all.[82]

4.22. The limited reference to the GES and GSR in the evidence we received suggests to us that they are not as effective as they might be. We also note that evidence submitted to us by the GES and GSR provides little detail about how they intend to promote evidence-based policy.

4.23. Government scientists and social scientists have an important role to play in facilitating the translation of behaviour change research and in remedying the problems with translation which we have identified. **We recommend therefore that, at the earliest opportunity, the Government appoint a Chief Social Scientist (CSS) who reports to the GCSA and is an**

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75 Transcript of the House of Lords Select Committee on Science and Technology, Tuesday 24 May 2011 (Q 14).

76 *Science and engineering in Government*, Government Office for Science (October 2009).

77 *Ibid*.

78 *Ibid*.

79 Transcript of the House of Lords Select Committee on Science and Technology, Tuesday 24 May 2011 (Q 14).

80 BC 110.

81 BC 54.

82 BC 31.

independent expert in social science research to ensure the provision of robust and independent social scientific advice.

4.24. **We further recommend that the Government consider whether existing mechanisms for the provision of social scientific advice, in particular advice on behavioural science, are fit for purpose. This should include consideration of how departmental CSAs and social scientists within departments can best work together to provide up to date social scientific advice to support evidence-based behaviour change interventions.**

Better links between the academic and policy making communities

4.25. Many witnesses highlighted the need for closer working between behaviour change researchers and policy makers to ensure that policies are properly informed by relevant evidence. Some suggested that, given the complexity of the area, researchers should be involved in intervention design from the beginning.[83] As we have already observed, the examples of interventions which were properly evidence-based were notable for their use of external expertise. The BPS were brought into DH to design the Health Trainers programme (see Box 15, page 49), and Defra's energy efficient products policy was developed in collaboration with a broad range of experts (see Box 6, page 27).

BOX 6

Energy efficient products

Defra's energy efficient products policy was developed by a team of behavioural economists, social researchers and communications experts.[84] The policy engaged the manufacturers and retailers to change the context in which the products were sold, using evidence about the importance of the environment in influencing people's decisions. Drawing on research into consumer purchasing patterns, interventions were also designed to raise the salience of energy efficiency at the point of decision making through labelling and communications campaigns. Between 1996 and 2007 the percentage of fridges and freezers purchased by consumers which were A-rated for efficiency increased from 5% to over 70%.[85]

The Sustainable Development Commission described the policy on energy efficient products as evidence-based and, as a result, multi-faceted, making use of a number of different types of interventions, including communication and information provision alongside requirements on industry.[86]

4.26. Other efforts to involve behavioural scientists in the development of policy are also being made. We were told that one of the functions of BIT was to bring in external experts on an *ad hoc* basis and invite the relevant departments to meet them.[87] The departments also provided some examples. DH had developed an arrangement with BPS for the provision of health

83 BC 38, BC 105, BC 108.

84 Q 71.

85 BC 114, Q 71.

86 BC 83.

87 QQ 13, 703.

psychologists to advise on evidence about behaviour change.[88] Though that arrangement has come to an end, Dr Sunjai Gupta, Head of Public Health Strategy and Social Marketing at DH, said that his team continued to include a health psychologist.

4.27. Gemma Harper, Chief Social Scientist at Defra, told us that her department work closely with their departmental scientific advisory council and expert committees. They were also working with the Department of Energy and Climate Change (DECC) on proposals for a social science orientated expert committee in order to ensure that they had the best advice, external to government, on behaviour change.[89] Liz Owen, Head of Customer Insight at DECC, said that, in relation to development of energy efficiency policy, her department was engaging with external experts. She admitted, however, that this was an area in which DECC had "more to do".[90]

4.28. Links are also being made with the research community through internships and research placements. Dr Rachel McCloy, a psychologist from the University of Reading, was an ESRC-funded Public Sector Research Fellow based in HM Treasury. She has been involved in developing a Behavioural Science in Government Network and compiling a database on work across Government (see paragraph 4.38 below).[91] Dr McCloy told us that arrangements such as her fellowship were "very useful in bringing academics in" so that they could see "what it's like on the other side of the table".[92] Dr Chatterton, an ESRC-funded placement fellowship at DECC,[93] told us that placements were "a great way forward". His placement had "opened [his] eyes to how big the gulfs are between the world of government policy making and the world of academia".[94]

4.29. Though many witnesses supported these mechanisms for linking behavioural scientists and policy makers more closely, some suggested that more needed to be done.[95] The Green Alliance, for example, said that placements and *ad hoc* consultation would not be enough for "government to keep on top of the wealth of academic progress, and to ensure the latest research is impacting on decision-making" but that a "greater dedicated resource" was required.[96]

4.30. **Departmental CSAs, whether or not they have experience of the sciences of human behaviour, should be responsible for establishing and maintaining contacts with leading behavioural scientists with expertise relevant to their policy areas and for consulting them as necessary.**

Behavioural insights for policy makers

4.31. The final link in the translation of research is that between scientists and policy makers. A number of witnesses suggested that policy makers

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88 Q 78. Professor Michie noted however that the formal consultancy arrangement with the British BPS had come to an end (Q130).

89 Q 79.

90 Q 329.

91 Q 1.

92 Q 31.

93 Q 144.

94 *Ibid.*

95 BC 103, BC 107, BC 125.

96 BC 107.

themselves should become more familiar with behavioural insights and their potential importance for improving policy.[97] Dr Halpern said that a mark of success for BIT would be widespread expertise in behavioural approaches within five years and that BIT was working with the head of profession for policy making to embed insights about behaviour change across Whitehall. We received, however, no indication of how this would be achieved.

4.32. **We recommend that the Cabinet Secretary, in consultation with the GCSA and CSS, once appointed, should take steps to ensure that civil servants with responsibility for policy making have the necessary understanding of the importance of changing behaviour and can identify the most appropriate people to consult in their own departments about the development of behaviour change interventions.**

Guidance to policy makers

4.33. There are a number of resources available to help policy makers understand behaviour change and design policies which take on board behavioural insights. These include the MINDSPACE report, produced by the Cabinet Office and the Institute for Government;[98] a review by the GSR which discusses models of behaviour change and provides a framework for designing interventions based on their models;[99] a report by the Central Office of Information which also summarises models of behaviour change;[100] NICE public health guidance on behaviour change at population, community and individual levels;[101] and Defra's framework for pro-environmental behaviours, the four Es[102] (adapted by the MINDSPACE report into the 6 Es).[103]

4.34. Despite this wealth of material, witnesses observed that none of the guidance provided an accessible, multi-disciplinary framework for designing behaviour change interventions. Furthermore, the sheer quantity of guidance, none of which covered everything and much of which was too detailed, was potentially confusing and unhelpful.[104]

4.35. **We recommend that the Cabinet Office, in consultation with the CSS, once appointed, consider how to consolidate the available guidance in a form which is evidence-based and accessible to policy makers.**

4.36. **We further recommend that NICE updates its 2007 Behaviour Change Guidance and considers whether accessible, multi-disciplinary guidance could be provided in relation to health-related behaviour change policies, particularly to offer more explicit advice on how behaviour change techniques could be applied to reduce obesity, alcohol abuse and smoking.**

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97 BC 83, BC 110.

98 *MINDSPACE*, Cabinet Office and the Institute for Government (2010).

99 *GSR behaviour change knowledge Review*, GSR (2008).

100 *Communications and behaviour change*, Central Office of Information (2009).

101 *Behaviour change at population, community and individual levels*, NICE (2007).

102 Q 53.

103 *MINDSPACE*, *op. cit.* p. 9.

104 BC 9, BC 52, BC 86, BC 105.

Sharing knowledge across government

4.37. Several witnesses identified a need for better coordination of what is known about behaviour change within and across government.[105] GES and GSR, for example, said that there should be:

- more shared practice in terms of what works and what does not work in influencing behaviour; and
- mechanisms for bringing people working in this area across government together to promote good practice as well as cost-effectiveness.[106]

4.38. The primary mechanism for achieving better co-ordination appears to have been Dr McCloy's work.[107] The Behavioural Science in Government Network is to be supported by a "Civil Pages community" which will act as a "forum for the sharing of relevant information on work in this area across government ... [incorporating] an inventory of work on behaviours across Government ... [and] extant reports on behaviour change, and information about relevant events [and] research developments".[108] Dr McCloy said that the Network had been successful in bringing people together.[109] This view was supported by Ms Harper.[110] Dr McCloy's appointment as Research Fellow is however time-limited and it is unclear how her work will be continued. When we asked Mr Bartholomew, he said that GES and GSR were "looking at other options for fellowships".[111] Several witnesses were concerned about detrimental consequences arising from a lack of continuity of Dr McCloy's work.[112]

4.39. A function of BIT is to "foster more inter-departmental discussion about the effectiveness of different means of changing behaviour".[113] The Government told us that a number of departments, including Defra, DECC and DH, have already contributed to Government understanding and knowledge about behaviour change and that heads of professions had a role in disseminating that knowledge.[114] We were also told that government officials, particularly members of the GES and GSR, sometimes went into other departments to help disseminate knowledge.[115]

4.40. It is not clear how, or how well, these different resources work together—how, for example, the work of BIT relates to the Behavioural Science in Government Network, or how departmental scientists and policy makers participate in either. Andrew Lee, Director of the Sustainable Development Commission, also argued that "there is not nearly enough connecting up between the Cabinet Office and Defra, which have now developed quite a lot of expertise in this area. We had a lot of feedback in our work about officials

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[105] BC 52.

[106] BC 24.

[107] BC 114, Q 26.

[108] BC 24.

[109] Q 31.

[110] Q 80.

[111] Q 33.

[112] BC 76, BC 82.

[113] BC 114.

[114] *Ibid.*

[115] Q 18.

not knowing where the evidence was, or what other people were doing".[116] The Central Office of Information agreed that the structures to join up the different silos of expertise were not yet in place, though also noted that many of these areas of expertise were focused on particular disciplines. A mechanism to join up experts across disciplines was needed to ensure that interventions were strategically planned, and they suggested the creation of a cross-government network.[117]

4.41. There are a number of different mechanisms in place for sharing knowledge but too much activity can make sharing knowledge more difficult rather than easier. **We recommend that the Cabinet Office, together with the GCSA and CSS, once appointed, review the current mechanisms for sharing knowledge about behaviour change among Government departments with a view to introducing a more streamlined structure.**

4.42. **We recommend further that this revised structure should involve the continuation of work begun on the "inventory of behaviours" in order to establish an archive of behaviour change interventions. This archive should provide accounts of the evaluation of the interventions and include unsuccessful as well as successful interventions.**

[116] Q 601.

[117] BC 76.

CHAPTER 5: THE GOVERNMENT APPROACH TO CHANGING BEHAVIOUR

5.1. In their evidence to us, the Government emphasised three aspects of their general approach to policy making which impact on the use of behaviour change interventions: a preference for non-regulatory policy tools, engagement with a range of organisations through partnership working, and a greater role for local authorities. In this Chapter, we consider the implications of each of these aspects on the effectiveness of interventions to change behaviour.

An emphasis on non-regulatory interventions

5.2. The Government's emphasis on non-regulatory behaviour change interventions can be traced back to the coalition agreement:

> "The Coalition's *Programme for Government* rejects 'the assumption that central government can only change people's behaviour through rules and regulations' and promises that 'our government will be a much smarter one, shunning the bureaucratic levers of the past and finding intelligent ways to encourage, support and enable people to make better choices for themselves'."[118]

5.3. The Minister, Oliver Letwin MP, echoed this sentiment, noting that "over very many years, governments of different persuasions have assumed that the way you achieve change ... is to legislate and then administer".[119] He said that while "there is a considerable place for legislation and regulation ... where we can achieve an effect that otherwise you would achieve by legislation, either directly or through nudge, without having to regulate, we prefer that route ..."[120] BIT was established in order to help achieve this (see Box 7, page 32 below). Dr Halpern, Head of BIT, agreed that governments have tended to use "a relatively limited menu" of policies to influence behaviour and that this meant that an "additional suite of approaches" which reflected a "more nuanced model of what actually drives behaviour change" had been missed.[121]

BOX 7

The role of the Behavioural Insights Team

BIT, a small team of civil servants and academics, is based in the Cabinet Office and led by Dr David Halpern. BIT has a steering group chaired by Sir Gus O'Donnell, Cabinet Secretary, and works with a variety of external experts, including Professor Richard Thaler, co-author of *Nudge*. BIT was established with a two-year sunset clause and so will cease to exist in the summer of 2012.

At present the team is working, in particular, on promoting organ donation, smoking cessation, car labelling, food hygiene and charitable giving. The commonality between the projects, according to the Government, is that they do not involve regulating and involve both prompted choice and partnership with the private sector.[122]

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[118] BC 114.

[119] Q 703.

[120] Q 706.

[121] *Ibid*.

[122] Q 703.

Dr Halpern identified the origins of what is now BIT in "deregulatory thrust", in part linked to the Better Regulation Executive.[123] He understands the team's role as raising awareness of "less cognitive, less familiar approaches" as alternatives to legislation, pricing mechanisms and advertising and social marketing.[124] Mr Letwin said that BIT was created in order to help Government departments think about "non-regulatory means of achieving behaviour change".[125]

5.4. Mr Letwin gave four reasons for emphasising a non-regulatory approach: effectiveness, cost-effectiveness, less rigid imposition on individuals and reduced burden on business.[126] We discuss the latter within the section on voluntary agreements (see paragraph 5.20 below).

The Government's arguments for a non-regulatory approach

The effectiveness of non-regulatory and regulatory approaches in isolation

5.5. Occasionally, non-regulatory approaches might be the only reasonable way to achieve behaviour change. Professor John Britton, Director of the UK Centre for Tobacco Control Studies, gave an example: "we cannot legislate to stop people smoking in their home but we can educate and nudge people to change".[127] In some policy areas, particularly crime prevention, legislation might already prohibit certain behaviour and the challenge is to achieve greater compliance. In these cases, further regulation may not be a realistic option.

5.6. Aside from these sorts of circumstances, we were given no examples of significant change in the behaviour of a population having been achieved by non-regulatory measures alone,[128] confirming the view of some witnesses that non-regulatory measures in isolation could have little or no effect and that the most effective means of changing behaviour at the population level was a package of different types of interventions. Findings from our case studies supported this view, as did Defra's work on energy efficient labelling (see Box 6, page 27). Professor Michie also observed:

> "... usually examples of legislation being maximally effective are when there is also work done on persuasive communication—for example, seatbelts and the smoking ban. If these legislative measures had been taken out of the blue, I don't think they would have been as effective as having a big communications campaign at the same time. On the other hand, if one just did the persuasive communication, it wouldn't have been effective."[129]

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123 Q 19.

124 Q 8.

125 Q 703.

126 Q 703.

127 Q 153. There has of course been legislation to encourage people to stop smoking, such as the Health Act 2006 which banned smoking in enclosed public places. This legislation appears to have had an effect on the numbers of individuals who smoke, and consequently who smoke in their homes. Professor Britton was instead referring to a direct ban on smoking in homes.

128 We were given the example of the relatively small changes made to letters sent out by Her Majesty's Revenue and Customs (HMRC) which seem to have had a substantial impact on the levels of response to tax collection letters. We note however that HMRC cannot be sure that the increased response was wholly a result of changes to letters, as other changes to the tax collection process were made simultaneously (BC 114).

129 Q 129.

5.7. Similarly, as Professor Michie suggested, regulatory measures may also be less effective when used in isolation rather than in a comprehensive package of interventions. Professor Kelly and Professor Britton agreed that legislation is likely to be more effective when the public understand the reasons behind it; this means that non-regulatory measures should be used as a means of "explaining and promoting the idea beforehand".[130] Professor Kelly cited the "Clunk Click" marketing campaign encouraging people to wear seat belts, which accompanied seat belt legislation, as an example of such a measure.[131] Mr Letwin made the further point that regulatory measures could sometimes have unintended consequences: that sometimes governments "have discovered, to their horror, that the effect that they sought to achieve has not been achieved and that instead some other effect has occurred—perhaps benign, perhaps counterproductive".[132] Professor Kelly agreed and referred to the counterproductive effects of using strict controls on the price and availability of alcohol in Scandinavia (see Box 3, page 21).[133]

5.8. Nudges are a subset of non-regulatory interventions (see Table 1, page 9) and the points made above about non-regulatory interventions apply. Several witnesses told us that, though some nudges reflect experimental evidence about what influences behaviour, they would be unlikely to have a significant effect if used in isolation. Dr Anable, University of Aberdeen, said in relation to reducing car use, for example, that "nudging will achieve nothing ... over the longer term [and] at the bigger scale".[134] Professor Ray Pawson, Professor of Social Research Methodology, University of Leeds, agreed that "sustained behavioural change is difficult to accomplish and requires more than a well aimed 'nudge' in the right direction".[135] Sara Eppel, Head of Defra's Behaviour Change Centre of Excellence, also said in relation to nudging: "I don't speak up its success … you often need some behavioural intervention to make your policy easier to implement, but you may also end up going for the much harder and faster policies at the end of the day".[136]

The cost-effectiveness of non-regulatory interventions

5.9. The Government have suggested that non-regulatory interventions are a more cost-effective way to change behaviour. Mr Baker, for example, said that "... in terms of value for money, the use of nudge and encouragement, apart from being sometimes as effective as regulation, can also be far more cost-effective for the public purse".[137] The MINDSPACE report also suggests that non-regulatory policy tools could lead to better outcomes at a lower cost.[138] In contrast, Professor Marteau and others, writing for the British Medical

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130 Q 158.

131 Q 164.

132 Q 703.

133 Q 182. Professor Kelly noted that "in certain parts of Scandinavia, this has brought down consumption in terms of people buying alcohol, but it's led to an increase both in people brewing their own and indeed in smuggling".

134 Q 585.

135 BC 6.

136 Q 299.

137 Q 710.

138 *MINDSPACE*, *op. cit*, p. 10

Journal, noted in relation to nudges that "[lower cost] cannot be assumed because the cost-effectiveness of nudges has not been evaluated".[139]

5.10. Effectiveness is a necessary prerequisite of cost-effectiveness. If an intervention has no effect then it cannot be cost-effective. Given Mr Letwin's view about nudging that "it is of course open to question whether any of this will have any effect whatsoever",[140] we find it surprising that the Government judge that they are in a position to assert that nudging is generally cost-effective.

Respecting the freedom of the individual

5.11. Finally, the Government argue that non-regulatory approaches are more "respectful of the freedom of the individual".[141] We believe that this is misleading. For example, there is a difference between regulation of the individual and regulation of businesses and only the former will tend to restrict the freedom of the individual (see paragraph 2.18 above). Indeed, an argument can be made that regulating businesses might increase the freedom of individuals by preventing businesses from influencing their behaviour and so creating a more neutral environment in which to make choices. We also draw attention to our conclusion in paragraph 2.20 that the Government should be able to explain why an intervention is a necessary and proportionate means of tackling a problem.

The need for a range of interventions

5.12. Whilst the Government have emphasised non-regulatory approaches, Mr Letwin acknowledged that there were circumstances when regulation was appropriate. The Government, he said, were not arguing "that we can substitute behavioural science and behavioural insights for the entire panoply of regulation. It may well be that there are all sorts of domains in which regulatory action is required to make major shifts—either only regulatory action, or regulatory action allied to other things".[142] As we have said (in paragraph 2.4 above), however, the evidence of officials suggests that the understanding that regulation has its place is not fully appreciated throughout Government departments. Ms Eppel, Head of Sustainable Products and Consumers at Defra, for example, told us:

> "… at the moment, we're giving a much bigger priority to looking at whether behaviour change [non-regulatory and non-fiscal measures] can contribute, because the Government is less willing to do regulation and that is a stated objective ... previously, we'd probably have looked at regulation more methodically".[143]

5.13. **In general, the evidence supports the conclusion that non-regulatory or regulatory measures used in isolation are often not likely to be effective and that usually the most effective means of changing behaviour at a population level is to use a range of policy tools, both regulatory and non-regulatory. Given that many factors may influence behaviour, this conclusion is perhaps unsurprising.**

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[139] *Judging Nudging: can nudging improve public health*, Marteau et al (BMJ, 2011).

[140] Q 703

[141] BC 114, QQ 54, 58, 77.

[142] Q 715.

[143] Q 294. See also Professor Dame Sally Davies' comments in Q 355.

5.14. **We welcome efforts by the Government to raise awareness within departments of the importance of understanding behaviour, and the potential this has for the development of more effective and efficient policies. We are concerned, however, that emphasising non-regulatory interventions will lead to policy decisions where the evidence for the effectiveness of other interventions in changing behaviour has not been considered. This would jeopardise the development of evidence-based, effective and cost-effective policies.**

5.15. **We therefore urge ministers to ensure that policy makers are made aware of the evidence that non-regulatory measures are often not likely to be effective if used in isolation and that evidence regarding the whole range of policy interventions should be considered before they commit to using non-regulatory measures alone.**

Partnership Working

5.16. The Government told us that "the involvement of private and Voluntary, Community and Social Enterprise sector organisations will be crucial" when they are trying to change behaviour.[144] Much of the evidence we received highlighted the benefits of partnership working, where Government initiatives are supported by other organisations, and suggested that the Government could do more to work with industry, the third sector and local communities to deliver multi-faceted behaviour change interventions through the most appropriate messengers.[145]

5.17. Numerous reasons were provided in favour of partnership working: that interventions undertaken by local communities and social enterprises were an effective way to change behaviour because those who are affected by an issue are the most likely to be able to solve it;[146] that individuals often respond best to messages about behaviour from those within their local community;[147] that the resources of businesses and the third sector were not time-limited in the same way as Governments, enabling greater consistency in their work;[148] that other sectors have a range of expertise about how to influence behaviour which the Government could take advantage of;[149] and that the third sector were particularly good at harnessing community spirit and were trusted messengers for behaviour change interventions.[150] Rory Sutherland, President of Independent Practitioners in Advertising, noted that, in the business world, some brands also engendered trust in a way that governments often do not[151]—a point borne out by the contribution of businesses during the Change4Life (see Box 8, page 37) programme in communicating messages to consumers.[152]

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144 BC 114.

145 BC 76, BC 83, BC 84.

146 BC 41.

147 BC 41, BC 89, BC 96, Q 638.

148 Q 259.

149 QQ 479, 500. Mr Baird provided the example of Diageo's work with Drink Aware on the 'Why Let the Good Times Go Bad' campaign to illustrate this; the campaign was designed by one of Diageo's senior designers.

150 BC 48.

151 Q 525.

152 BC 102.

BOX 8

Change4Life

The Change4Life campaign involved over 200 partners drawn from the voluntary sector, businesses and local government. The campaign also involved over 50,000 local community groups.[153] The *Change4Life One Year On* report noted that a number of health charities, including Cancer Research UK, Diabetes UK and the British Heart Foundation ran their own campaigns in support of Change4Life. Businesses also supported the movement, for example by providing free gym access, discounted fruit and vegetables and low-cost bikes.[154] A number of witnesses agreed that the campaign had used partnership working effectively.[155] Tim Duffy, Chief Executive of M&C Saatchi, noted that the Change4Life campaign minimised conflict and Paul Kelly, Head of Corporate Affairs at Asda, said that the campaign worked because there was clarity around the role and responsibilities of all of the partners.[156]

5.18. Witnesses from businesses and the third sector observed, however, that partnerships worked most effectively where there was little or no conflict of interests or "internal conflict".[157] Tony Hawkhead, Chief Executive of Groundwork, agreed, suggesting that the Green Deal was a good example of effective partnership working because everybody involved got something out of it (see Box 9, page 37).[158] By contrast, voluntary agreements, which are established between the Government and businesses to change the way in which businesses operate without regulation, were cited as a particularly controversial form of partnership working because of potential conflicts of interest.

BOX 9

The Green Deal

The proposed Green Deal allows businesses to offer energy efficiency improvements to homes, community spaces and businesses at no upfront cost, and recoup payments through a charge in instalments on the energy bill. Mr Hawkhead argued that the Green Deal provides an example of a partnership where there is a clear role for Government, businesses and the third sector and no conflict of interest:

"The role for the Government ... is quite clearly setting a framework and creating a clear vision for how the Green Deal will work: negotiating with private financiers, setting out the legislation. Business's role ... will be quite clearly to install the home insulation … and probably to lead on some of the behaviour change work because they will be in there ... Where the third sector can come in there is the whole area around fuel poverty. The Green Deal will not work for fuel poverty, we will need to use the levy on our fuel bills to try and deal with that … That is where the trusting relationship that the third sector has uniquely in poorer communities can make the difference …"[159]

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153 Q 83.

154 *Change4Life One Year One*, DH (2010).

155 BC 83, BC 102, QQ 259, 524, 532.

156 QQ 259, 532.

157 QQ 259, 279.

158 Q 279.

159 *Ibid*.

Voluntary agreements between Government and businesses

Effectiveness

5.19. Some witnesses from both the business sector and the Government favoured voluntary agreements. Officials from DH cited a report from the Organisation for Economic Co-operation and Development (OECD) which concluded that cooperation between governments and the food industry would be crucial if the problem of obesity were to be tackled successfully.[160] Mr Letwin argued that the Government should try to get businesses to work with them because "one of the very few pieces of extremely strong evidence … is that you can easily create regulations that people will observe in the letter but not in the spirit".[161] Voluntary agreements were not, he said, a means of "handing [businesses] the power". A number of witnesses also referred to work on salt reduction as an example of an effective voluntary agreement.[162] (We note, however, that the salt reduction campaign also publicly named and shamed products particularly high in salt and so its effectiveness cannot be attributed only to the voluntary agreement.)

Burden on businesses

5.20. The Government also argued that voluntary agreements would be less burdensome on businesses than legislation. The evidence we received from businesses themselves was mixed on this point. Paul Kelly, Head of Corporate Affairs for Asda, agreed that Asda had had only positive experiences of voluntary agreements.[163] In contrast, Justin King, Chief Executive of Sainsbury's, said that voluntary agreements could be burdensome on businesses,[164] and that, furthermore, Sainsbury's were "not against legislation" and would in some instances "positively encourage it" if it was easy for businesses to work with.[165] Mr King emphasised that voluntary agreements tended to be short-term, making them more difficult for businesses to engage with properly, and that although legislation could be burdensome, it was more "consistent for everybody" and tended "to stand more the test of time than a voluntary agreement".[166] Dr Susan Jebb, Chair of the cross-Government expert advisory group on obesity, agreed that voluntary agreements could "be much more onerous" and said that it was an issue that the food network of the responsibility deal was thinking about.[167]

Conflict of interests

5.21. Many witnesses expressed scepticism about the effectiveness of voluntary agreements because of the overriding commercial interests of businesses.

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160 Q 355.

161 Q 738.

162 BC 16, BC 58, BC 108, QQ 355, 560. The Food Standards Agency noted that "the dietary evidence suggests that population salt intakes have seen, on average, a 0.9g reduction from 2001 to 2008" (BC 16). An extra 15% reduction in salt has been promised by manufacturers through the Responsibility Deal Network. Not all witnesses were positive about the voluntary agreement on salt however. Dr Atherton noted that the change in salt consumption achieved so far was "fairly marginal" (Q 455).

163 QQ 544–5.

164 Q 466.

165 Q 456.

166 Q 467. Mr King cited the example of a voluntary agreement on reducing the use of plastic bags to demonstrate this point.

167 Q 562.

Mr King, for example, said that they were the "refuge of scoundrels", tending to appeal to the lowest common denominator,[168] and were often overtaken by political events.[169] Others went further, suggesting that businesses would never be motivated to do anything which impacts their success. Professor Vivienne Nathanson, Head of Science and Ethics at the British Medical Association, for example, told us about her experience of the alcohol network of the Public Health Responsibility Deal (see Box 10, page 39):

> "... the industry, which is at least two thirds of the ... group, is not motivated so far to really look for things that hurt them. They are looking at completely protecting their bottom line which I can understand—they are businesses—but from the health side we want to hurt their bottom line."[170]

Professor Nathanson said that the health organisations on the responsibility deal "believe that, inherently, voluntary agreements won't work and particularly in the alcohol sector. They may have more chance in the food sector—'may' being an important caveat there".[171]

BOX 10

The Public Health Responsibility Deal

The Public Health Responsibility Deal is an example of the Government pursuing voluntary agreements with businesses and other organisations to help achieve policy goals. The Deal was launched by DH to "[tap] into the potential for businesses and other organisations to improve public health and tackle health inequalities through their influence over food, alcohol, physical activity and health in the workplace".[172] It is overseen by a plenary group chaired by the Secretary of State for Health and includes five networks. Four work within a particular area of public health—food, alcohol, physical activity, health at work—and involve representatives of the Government, businesses and health non-governmental organisations (NGOs), who work together to establish "pledges for action".

There is also a fifth network on behaviour change, which

"... seeks to put behavioural science expertise at the disposal of the other networks, enabling them to push the boundaries of their work. The network is also exploring ways in which Responsibility Deal partners can help build the evidence-base for more ground-breaking future work to change behaviour in environments including the retail sector."[173]

Pledges under the deal were published on 15 March 2011 and six health organisations[174] did not sign up. They expressed particular concern with the alcohol network pledges, arguing that they: were too limited with little or no evidence of effectiveness; prioritised industry views; were not specific or measurable and did not indicate what would be a success. They also noted that

168 Q 456.

169 Q 561.

170 Q 558.

171 Q 561.

172 *The public health responsibility deal*, DH (March 2011).

173 *Ibid*.

174 The organisations were**:** Alcohol Concern, British Association for the Study of the Liver, British Liver Trust, British Medical Association, Institute of Alcohol Studies, and the Royal College of Physicians.

there had been no commitment made on alternative actions if the pledges did not reduce levels of alcohol-related harm.[175]

5.22. Other witnesses echoed Professor Nathanson's view. Richard Wright, Director of Sensation, Perception and Behaviour at Unilever, told us that "the reality ... is that any business is in business to make money"[176] and that opportunities to influence behaviour will be taken if they are a means to selling more products.[177] Mr King said that decisions taken by Sainsbury's that might discourage consumption of unhealthy products, for example removing confectionery from their checkouts in some stores, were taken when they were what the customer wanted rather than on the basis of any judgement about improving the health of consumers.[178] Mr Letwin indicated a similar view when he said that working with businesses through voluntary agreements involved thinking about whether the agreement was "possibly in their commercial interest".[179]

Evaluation, timelines and regulation

5.23. A number of witnesses were concerned that mechanisms should be in place to ensure that voluntary agreements were subject to rigorous evaluation, with clear outcome measures and timelines. Dr Jebb said that "it is ... vital that public health bodies and institutions are charged with monitoring and evaluating the success or otherwise of ... delivery".[180] Professor Lindsay Davies, President of the Faculty of Public Health, said that voluntary agreements were an "experiment" and so should not be allowed to "drift on and on and on as a substitute for ... taking harder action, because the obesity epidemic can't wait",[181] a point also made by Professor Nathanson.[182] Other witnesses emphasised the importance of timelines, arguing that if agreements could not be reached or were not effective, then the Government had to be prepared to regulate. Professor Nathanson said, for example, that the Government should be prepared to say "if we don't get a sufficiently challenging-to-the-industry ... agreement, then we would be prepared to regulate on the areas that the voluntary agreement should cover, as well as the areas that will only happen through regulation".[183] Mr Letwin acknowledged this point when he said "we may need to regulate [businesses] and not merely do deals with them".[184]

5.24. Anne Milton MP, Parliamentary Under Secretary of State for Public Health, provided some reassurance in relation to these concerns:

> "... when we publish our response ... and set the outcomes down fairly clearly, we will need to give an indication as to when we would step in. That is quite important, setting clear outcomes, and some timeframes

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175 The press release by the organisations concerned can be found at http://www.rcplondon.ac.uk/press-releases/key-health-organisations-do-not-sign-responsibility-deal.

176 Q 516.

177 Q 226.

178 Q 462.

179 Q 738.

180 Q 558.

181 *Ibid.*

182 *Ibid.*

183 *Ibid.*

184 Q 738.

that we can be judged on as a Government. Also, it is an indication to industry as to where we will step in, if they do not help us get along to that point."[185]

As we note in Box 10 (page 39), some organisations do not feel that these measures were present in the published Public Health Responsibility Deal. The pledge about reducing obesity made by the food network of the Deal does not set outcomes relating to changes in behaviour and does not reflect the available evidence about how to tackle the problem of obesity (see paragraph 7.20 below).

5.25. **The involvement of other organisations to support the Government's behaviour change initiatives may provide valuable opportunities to improve the effectiveness of behaviour change interventions, in particular by allowing a range of messengers to be used to deliver them. We welcome the Government's intention to use such collaborations.**

5.26. **However, we have major doubts about the effectiveness of voluntary agreements with commercial organisations, in particular where there are potential conflicts of interest. Where voluntary agreements are made, we recommend that the following principles should be applied in order to ensure that they achieve their purpose:**

- **The Government should specify clearly what they want businesses to do based on the evidence about how to change behaviour, and what steps they will take to achieve the same result if voluntary agreements are not forthcoming, or prove ineffective.**
- **Voluntary agreements should be rigorously and independently evaluated against measurable and time-limited outcomes.**

5.27. **Given that these principles do not appear to have been applied consistently to the Public Health Responsibility Deal Network, we urge DH, in particular, to ensure that these principles are followed when negotiating further voluntary agreements. In relation to the current agreements, we recommend that DH should state for each pledge what outcomes are expected and when, and provide details of what steps they will take if the agreements are not effective at the end of the stated period.**

The role of local authorities

5.28. Mr Letwin told us that the Government "are very determined to ... decentralise power and to leave local communities and local governments as free as possible to make their own decisions about how they do things".[186] In our two case study policy areas, the role of local authorities in delivering behaviour change interventions has been emphasised in recently published white papers.[187]

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185 Q 710.

186 Q 739.

187 *Creating growth, cutting carbon* op. cit; *Healthy lives, healthy people* op. cit.

Benefits of decentralisation

5.29. Witnesses described two major benefits of a local approach to changing behaviour. First, different local areas have different local needs and so interventions should reflect these differences.[188] In relation to sustainable transport, much of our evidence agreed that local authorities were best placed to design behaviour change interventions because they were most qualified to assess the need for, and implement, interventions.[189] Similarly, witnesses were mostly positive about the proposed reforms to public health which would move Directors of Public Health into local authorities, suggesting that they would provide opportunities to coordinate behaviour change activity across a range of areas.[190] Professor Dame Sally Davies noted that this shift should mean that local authorities will start to "look at all the things they do—education, planning, cycling paths, transport … through a health lens as well as through the cost lens and the service lens".[191] Dr Frank Atherton, Chairman of the Association of Public Health Directors, told us that "Directors of Public Health [were] ... universally welcoming the move into local authorities, because that's where the levers of change actually exist".[192]

5.30. Secondly, some witnesses suggested that the devolution to local authorities of responsibility for designing and implementing interventions would provide an opportunity to help build the evidence-base for the effectiveness of population level interventions.[193] Mr Letwin said that, in principle, the decentralisation of power should provide a "rich field" for evidence generation—although he acknowledged that it would be important to ensure that mechanisms were in place to take advantage of it.[194]

Possible problems

5.31. Some witnesses expressed doubts about decentralisation however. They questioned whether there were the requisite levels of skill in designing and evaluating interventions at a local level, or adequate mechanisms in place for the dissemination of knowledge, to allow the Government to make the best use of what is learnt about the effectiveness of interventions. In relation to the use of evidence, Paul Sacher, Chief Research and Development Office for MEND Central, and Zoe Hellman, Company Dietician for Weight Watchers, said that commissioners of weight management programmes within Primary Care Trusts did not review evidence accurately and appeared not to understand the most important measures of effectiveness.[195] A similar view was reflected in the evidence we received in relation to our case study on reducing car use to limit carbon emissions (see paragraphs 7.42–43 below). In addition, witnesses suggested that local authorities may not have

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188 QQ 322, 407.

189 BC 116, BC 121, BC 127, BC 136, BC 141.

190 QQ 449, 573. It was also noted however that these reforms did carry risks. Professor Nathanson, for example, suggested that "the risk in the short term is of fragmentation and ... the ... loss of a really expert resource" (Q 573).

191 Q 377.

192 Q 449.

193 Q 630.

194 Q 739. Dr Atherton made a similar point about building the evidence-base at a local level for health interventions (Q 452).

195 Q 442.

the range of skills and resources necessary to interpret the available evidence.[196]

5.32. Witnesses also expressed concern that devolving responsibility for behaviour change interventions in some policy areas might have a detrimental effect on evaluation.[197] The National Obesity Observatory noted, for example, in relation to the commissioning of weight loss interventions, that:

> "Although quantitative data are lacking, indications are that very few interventions are evaluated to an adequate degree. Problems include: lack of skilled staff; confusion over appropriate evaluation methods; lack of validated measurement tools; insufficient emphasis in the commissioning process; insufficient budgets being allocated to the evaluation component of a programme ..."[198]

5.33. The Government acknowledged the importance of effective evaluation of local initiatives. Mr Letwin told us that the Government had discussed setting up some research apparatus at low cost to "investigate what had been done by one local government in one place, and enable it to be evaluated and transmitted to other local governments in other places".[199] Mr Dowie said the DfT recognised that it had "a responsibility through the ... sustainable transport fund to ensure there is a proper evaluation framework in place".[200] To that end, the department has "published impact evaluation guidance aimed at scheme promoters and evaluation practitioners to help them choose an evaluation approach which is best suited to their evidence needs and helps them design an evaluation which enables the observed impacts to be attributed to the scheme". They have also developed a framework "for evaluating schemes aimed at encouraging sustainable and active travel behaviours".[201]

5.34. In relation to sharing knowledge at a local level, witnesses who had designed and commissioned local interventions told us that there was no mechanism for the broader dissemination of the lessons learnt from their behaviour change programmes.[202] Robin Gargrave from Central YMCA said that while there was some informal knowledge exchange among local organisations, there were no "national data that shows the direction of travel, and also indicates what's working, what's not working and why". He added: "anything that the Government can do to help facilitate that would be most welcome".[203] The DfT stated in its Sustainable Transport white paper however that it would be "stepping back from monitoring" and that "the Local Government Association and local authorities themselves will be responsible for spreading best practice, sharing what works and developing a framework that improves capability across the local transport spectrum".[204]

5.35. Finally, a number of witnesses cautioned that localism should not detract from the important role central government still had to play. Lynn Sloman, Director

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196 BC 121, BC 127, BC 136.

197 BC 42, BC 121, BC 127, BC 131, BC 136, Q 452.

198 BC 42.

199 Q 739.

200 Q 663.

201 BC 138.

202 QQ 269, 395, 398, 400.

203 Q 400.

204 *Creating growth, cutting carbon, op. cit*, para 3.26.

of Transport for Quality of Life, said for example that the DfT should continue to foster experimentation and that it should "provide a consistent, long-term direction of travel so that the local authorities and everybody else knows where they are".[205] This was supported by other witnesses in relation to public health.[206]

5.36. **Although decentralising responsibility may provide a useful opportunity to tailor local behaviour change initiatives and to help build the evidence-base for applied behaviour change research at the population level, steps should be taken to ensure that interventions are evidence-based and properly evaluated. To this end, we recommend that the Government:**

- **produce guidance for local authorities on how to use evidence effectively to design, commission and evaluate interventions and on the need to involve experts in the design and evaluation process (see paragraphs 4.25 and 6.3), and provide advice on how to best use the tendering process to ensure value for money;**
- **take steps to ensure that evaluation of interventions, including data collection and reporting of behaviour change outcomes, across local areas is of sufficiently high quality to allow comparisons and analysis;**
- **take steps to ensure that what is learnt by a local government in one place can be readily transmitted to other local governments; and**
- **provide funding only for those schemes which are based on sound evidence. Demonstration of rigorous evaluation and contribution to the evidence-base should be a requirement for future funding for behaviour change interventions.**

[205] Q 631.

[206] QQ 446–7, 573.

CHAPTER 6: EVALUATION OF BEHAVIOUR CHANGE INTERVENTIONS

6.1. A common concern raised by witnesses was the need for greater consistency in the quality of evaluation of government behaviour change interventions, with many suggesting that this was a significant area of weakness.[207] Rigorous evaluation is necessary not only in order to establish whether policies are working, whether they can be improved and whether they represent value for money, but—in the context of behaviour change interventions—also whether they contribute to the development of a much needed evidence-base for the effectiveness of interventions at a population level (see paragraph 3.1 above).

Ensuring effective evaluation

6.2. Witnesses identified the following factors as necessary for effective evaluation:

- building evaluation into a policy design from the outset;
- good outcome measures;
- longitudinal data;
- the use of controls wherever possible;
- sufficient funding for evaluation;
- data on cost-effectiveness.

Building evaluation into policy design

6.3. Several witnesses called for evaluation to be built into policy design from the outset,[208] not least because, as Professor David Gunnell, Professor of Epidemiology at the University of Bristol, observed, it was often the case that "once the policy has been formulated and begun to be rolled out, it is too late to build in an effective evaluation".[209] It is unfortunate, therefore, that, according to Professor Ray Pawson, Professor of Social Research Methodology at the University of Leeds, many evaluations are put out to tender and organised in a way that "excludes the evaluation team from the programme design stage", meaning that they have no influence on fine-tuning an intervention, are unclear about whether results will demonstrate success or failure and often discover that the intervention is "half-baked".[210] Others also highlighted the need to bring in academics at the start of the policy development process to help ensure that evaluations are appropriately designed.[211]

6.4. The Treasury guidance on appraisal and evaluation (the Green Book) works on the basis of the ROAMEF (rational, objectives, appraisal, monitoring, evaluation and feedback) policy making cycle and so appears to provide for

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[207] BC 2, BC 31, BC 42, BC 47, BC 52, BC 76, BC 82, BC 83, BC 94, BC 105, BC 107, BC 108, BC 109, BC 110, BC 114, BC 138, BC 150.

[208] QQ 26, 188, 223–4, 314, BC 9, BC 90.

[209] Q 188.

[210] BC 148.

[211] BC 103.

evaluation after implementation.[212] We were encouraged to hear however from Siobhan Campbell, Head of Policy at DECC, that evaluation should not be considered only as the "E" in the ROAMEF but rather that "at the rationale, objective, appraisal stage, there is an expectation that you are using evaluation evidence to inform these decisions that you are making along the way",[213] and Dr McCloy, ESRC Research Fellow in GES, said that one of the key aims of her work with the behaviour change network was to get policy makers to build evaluation into the policy design process at an early stage.[214]

Long-term evaluation and outcome measures

6.5. Several witnesses identified the absence of longitudinal evaluation (that is, evaluation over a prolonged period) as a significant problem.[215] Dr Ian Campbell, Medical Director of Weight Concern, for example, suggested that attitudes in the public sector tended to be short term and that funding was not available to measure outcomes over the longer term.[216] Anne Milton MP, Parliamentary-Under Secretary of State for Public Health, appeared to confirm this observation when she suggested that measures which would show, for example, a reduction in alcohol-related liver disease would take a long time and that that could lead to the accusation that the department was doing something which "maybe will favour our successors in Government".[217] Phillip Darnton, Chair of Cycling England, and Professor Pawson said that another problem was that those conducting evaluations were sometimes asked to report prematurely.[218] John Dowie, Director of Regional and Local Transport at the DfT, agreed that this had been the case with the Sustainable Travel Towns programme (see Box 11, page 46).

BOX 11

Sustainable travel towns pilot

Professor Peter Bonsall, Professor of Transport Planning, University of Leeds, criticised the evaluation of the Sustainable Travel Towns pilots on the ground that "rather too many of these initiatives have been evaluated predominantly by self-reported behaviour, which is ... a recipe for disaster" and that a number were "evaluated by the same team who did the work".[219] Mr Dowie further noted that "because of the drive to get evaluation evidence out" the evaluation would not establish the longitudinal effects of the intervention,[220] meaning that any conclusions about the long-term effectiveness of the intervention and its cost-effectiveness could not be established. We note however that this was a pilot and used randomisation and control techniques effectively, therefore meeting some of the criteria for effective evaluation.

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212 http://www.hm-treasury.gov.uk/d/green_book_complete.pdf.

213 Q 185.

214 Q 26.

215 BC 6.

216 Q 349.

217 Q 737.

218 BC 148, Q 648.

219 Q 607.

220 Q 662.

6.6. It was suggested to us that a further weakness of the Government's current approach to evaluation is how outcome measures are framed.[221] Outcome measures should be specific, objective and consistent across trials. Appropriate outcome measures enable the success of policies to be monitored throughout their implementation and therefore allow an assessment of their effectiveness in the shorter term, even if the evaluation is intended to continue through to the long term. Several witnesses expressed concern about inappropriate use of outcome measures for behaviour change interventions. In particular, it was noted that attitudes and self-reported behaviours were often used as measures of a behaviour change intervention.[222] The Government acknowledged that sometimes "evaluation has been distorted by being focused on customer attitudes and programme outputs, rather than outcomes".[223] The Targeting Benefit Thieves Campaign provides an example of this confusion (see Box 12, page 47).

BOX 12

The Targeting Benefit Thieves campaign

The Targeting Benefit Thieves campaign began in 2002 and was designed to reduce fraud and error in the benefit system. The Government noted that "the campaign tracked people's attitudes and self-reported behaviour as a result of seeing the campaign. Tracking research indicated that the proportion of claimants who consider it 'very easy' and 'fairly easy' to get away with benefit fraud declined from 41% (Oct 2006) to 29% (March 2010). The proportion of claimants agreeing with the statement, 'the chances of getting caught abusing the benefits system are slim' has declined, falling from 39% (Oct 2006) to 21% (March 2010)".[224] No information was provided about evaluation of the primary interventions outcomes of reducing fraud and error in the benefit system.

6.7. We were particularly concerned by confusion between outcomes and outputs within DH. For example, in relation to the Great Swapathon, we were told that the outcome of the intervention was "to create a million swaps"—although, shortly afterwards, we were told that the outcome measure was, in fact, a decreased health burden in the long term.[225] Measuring the Great Swapathon according to the number of swaps exemplifies a point made by NICE that "evaluations of behaviour change interventions frequently fail to make a satisfactory link to health outcomes".[226]

Using sufficient controls and evaluating complex interventions

6.8. Some evaluations, including the Sure Start and the Health Trainers evaluations (see Boxes 13, page 48 and 15, page 49), have been criticised for not including any, or sufficient, controls. According to Dr Steven Skippon, Principal Scientist, Shell Global Solutions, insufficient controls and poor methodology would increase the chance "that confounding variables will confound the answer".[227]

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[221] BC 52, BC 73, BC 105, BC 110.

[222] BC 5, BC 110.

[223] BC 114.

[224] *Ibid*.

[225] QQ 356–8.

[226] BC 52.

[227] Q 593.

Choosing a method of evaluation is not straightforward. Several witnesses thought that randomised control trials (RCTs) were the "gold standard ... of evaluation".[228] Professor Pawson, on the other hand, challenged this view, arguing that, in some cases, demonstrating the effectiveness of a policy would sometimes require a "comprehensive" or a "multi-method evaluation"[229] rather than a simple "policy on, policy off" comparison.[230] Professor Pawson's argument was supported by other witnesses and we note that Defra's evaluation of their food waste policy uses a range of methods (see Box 14, page 48).

BOX 13

Sure Start

The evaluation of the Sure Start programme was criticised by Professor Gunnell because it could have been rolled out in a way that would have allowed "more robust, randomised evaluation ... it could have been done with better collaboration between researchers and policy makers".[231] Dr Halpern also said that Sure Start arguably did not build in sufficient controls.[232]

6.9. Where RCTs are not possible, some witnesses suggested a natural experiment design (where the evaluation is not by way of a randomised experiment but controlled using existing variation);[233] others suggested a "stepped-wedge" approach (where a policy intervention is rolled out to participants at different times). Small-scale pilots and demonstration projects could also ensure that controls were established—indeed, Professor Britton thought piloting was "crucial".[234] Pilot groups were used effectively for establishing and improving smoking cessation interventions (see Box 1, page 20) and the Sustainable Travel Towns programme made good use of demonstration projects (though in other areas its evaluation could have been improved) (see Box 11, page 46). Professor Kelly noted however that the pilots themselves need to be evaluated properly,[235] and Dr Chatterton cautioned that sometimes pilots would not show the extent of the effects of an intervention at a population level.[236]

BOX 14

Food Waste

Defra's food waste reduction programme, delivered in collaboration with Waste Resources and Action Programme (WRAP), was evaluated using a range of methods, both qualitative and quantitative. Self-reported behaviour, including assessments of awareness and understanding of the campaign, understandings of how to reduce food waste and commitment to reducing food waste. This was accompanied by data about the quantities of food in the waste stream and information from the retail environment about purchasing habits.[237]

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228 Q 188.
229 Q 203.
230 *Ibid*.
231 Q 196.
232 Q 30.
233 Q 219.
234 Q 168.
235 *Ibid*.
236 *Ibid*.
237 Q 284.

6.10. We have already concluded, on the basis of the evidence we have received, that using a range of interventions will often be more effective in changing behaviour at a population level than using a single intervention in isolation (see paragraph 5.13 above). But multi-faceted interventions can make evaluation more difficult because of the difficulty in discerning the relative effectiveness of the components of such interventions. Professor Bonsall, for example, said: "it is impossible ever to untangle the particular effects of different components. One can only talk about the packages and draw inferences from the effect of different packages".[238] Professor Britton argued that, while it would be practically possible, disaggregation would take too long. But this, he suggested, should not deter policy makers because, in his view, where there was a sufficient evidence to support trying an intervention, then it should be tried without prevarication.[239] Mr Letwin took a similarly practical approach: what mattered most for government was to be able to judge whether what they had done was working—"it is less important, immediately and practically, to know which bit of it is working".[240]

6.11. Dr Harper, Chief Social Scientist at Defra, however, appeared to be more cautious: there was, she said, more to be done across government "in establishing what works and what's worth investing in, in terms of specific components of packages".[241] She suggested that one approach would be to use more pilots.[242] Mr Baker agreed: "it is possible, even within a complex matrix of interventions, to work out which ones are having particular effects"[243] and Professor Michie drew our attention to the Medical Research Council (MRC) guidance on evaluating complex interventions.[244]

Funding

6.12. Rigorous evaluation, especially using long term objective outcome measures and population-representative samples, cannot be undertaken without adequate funding provision. The Health Trainers programme (see Box 15, page 49) provides an example where the absence of funding impacted adversely on evaluation.

BOX 15

Health Trainers

The Health Trainers programme was cited as a policy based on good evidence (see paragraphs 7.22–23 below) but several witnesses told us that the evaluation could have been better. The BPS health psychology team advised DH that the programme should be rolled out in stages in a 'stepped wedge' design but this was not possible because of insufficient funding.[245] As a result, the programme was evaluated by comparing data before and after the programme. Judy White from the Yorkshire and Humber Health Trainer Team told us that that the quality of the data collected was variable, making it difficult to conduct thorough analysis.[246] Ms White was

238 Q 612.

239 Q 170.

240 Q 717.

241 Q 60.

242 Q 75.

243 Q 722.

244 Q 88. See *Developing and evaluating complex interventions*, MRC (2008).

245 BC 43.

246 Q 404.

unable to provide any comprehensive data on the basis of the evaluation of the Health Trainers programme, particularly in relation to cost-effectiveness.[247] This was in stark contrast to Weight Watchers and MEND, which provided figures for the effectiveness and cost-effectiveness of their interventions (see Box 16).[248]

Cost-effectiveness

6.13. Publicly funded behaviour change interventions should provide value for money. That is self-evident. It was disappointing to find therefore that although private sector companies—such as the Weight Watchers and MEND programmes (see Box 16, page 50)—were able to provide detailed evaluation data (though we did not assess the methodology by which these data were established),[249] we had difficulty in sourcing such data for the Health Trainers programme.

BOX 16

MEND and Weight Watchers

MEND

Paul Sacher, Chief Research and Development Office for MEND Central, said that, since the first MEND programme was delivered in 2002, the programme has undergone "feasibility, pilot, efficacy and effectiveness studies to fully evaluate the outcomes". The programme has been evaluated against a range of outcome measures, including "reductions in body mass index, reductions in waist circumference … improvements in things like cardiovascular fitness, physical activity and sedentary activity levels and again some of the psychosocial measures, so things like self-esteem and body image". Mr Sacher told us that an independent study demonstrated that "the incremental, cost effectiveness ratio of the programme is £1,671 per QALY[250] gained".[251]

Weight Watchers

Zoe Hellman, Company Dietician for Weight Watchers, said that an independent report demonstrated that the cost-effectiveness of the Weight Watchers programme was £1000 per QALY. The results of a recent RCT "compared having access to Weight Watchers versus standard care within primary care" across the UK, Australia and Germany. The study demonstrated that after a year "people who had access to Weight Watchers lost significantly more weight ... and the retention rates were higher".[252]

Conclusions

6.14. **Effective evaluation requires that:**

- **evaluation should be considered at the beginning of the policy design process. External evaluation expertise should be sought, where necessary, from the policy's inception;**

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247 *Assessing the Value for Money of Health Trainer Services*, Lister (2010).

248 Q 432.

249 Though we note that QALY figures can only be used to demonstrate orders of magnitude and do not provide specific data and we have not investigated how these figures were formulated

250 Quality adjusted life year.

251 Q 432.

252 *Ibid*.

- **relevant outcome measures—as distinct from outputs—should be established at the beginning of the policy development process;**
- **the duration of the evaluation process should be sufficiently long-term to demonstrate that an intervention has resulted in maintained behaviour change;**
- **pilot studies, using population-representative samples, followed by controlled trials assessing objective outcomes should be used whenever practicable; and**
- **sufficient funds should be allocated for evaluation, recognising that establishing what works, and why, is likely to result in better value for money in the long-term.**

6.15. **We find however that, at present, evaluations of government behaviour change interventions often lack one or more of these necessary elements. While we welcome the Government's revision of the Magenta Book, the evaluation guidance for policy makers and analysts, we believe that it could be further improved. We recommend that the Government consult external evaluation experts on the creation of a concise document for policy makers, containing only the most important principles of evaluation. We further recommend that they make clear what steps they will take to ensure that the revised guidance leads to a change in evaluation culture across Whitehall.**

CHAPTER 7: CASE STUDIES

7.1. To assist us in our inquiry, we undertook two case studies. The first looked at government behaviour change interventions to reduce the prevalence of obesity and the second at interventions to reduce car use to limit CO_2 emissions. These policy areas were chosen because they both involve major challenges which require significant changes in behaviour. They differ in that the first policy area is principally concerned with benefiting the individual (though reducing burdens on the health service must also be a concern), the second involves preventing harm to society at large, now and in the future. Where findings from the case studies have been used in the preceding Chapters to inform our more general findings or recommendations, this has been noted in the text. In addition, we have made some more specific recommendations in relation to each case study.

Case Study 1: Tackling obesity

7.2. In 2009, almost a quarter of adults in England were classified as obese and three in 10 children aged between two and 15 were classified as either obese or overweight.[253] Obesity is a major public health problem. It is associated with a number of chronic diseases such as type 2 diabetes and high blood pressure, both major risk factors for cardiovascular disease.[254] A Foresight report ("the Foresight report") on tackling obesity, published in 2007, estimated that, without action, obesity-related diseases would cost society £49.9 billion per year by 2050.[255]

What do we know about how to influence behaviour to reduce obesity?

7.3. The Foresight report concluded that:

- The causes of obesity are complex, encompassing biology and behaviour, but set within a cultural, environmental and social framework.
- For an increasing number of people obesity is an inevitable—and largely involuntary—consequence of exposure to a modern lifestyle, which has included major changes to work patterns, transport, food production and food sales.
- Successfully tackling obesity is a long-term, large-scale commitment.
- The obesity epidemic cannot be prevented by individual action alone and requires a societal approach.
- Preventing obesity is a societal challenge, similar to climate change. It requires partnership between government, science, business and civil society.[256]

7.4. Witnesses who gave evidence to us agreed that the behaviours which lead to obesity are a consequence of a number of interacting influences working at various levels (the individual, family and organisation) and involving social

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253 *Statistics on obesity, physical activity and diet: England 2010*, NHS Health and Social Care Information Centre (2010).

254 *Ibid*.

255 *Tackling obesity: future choices*, Foresight and BIS (2007).

256 *Ibid*.

and environmental factors.[257] As in the Foresight report, some suggested that the environmental determinants of behaviour were particularly important and that, arguably, the current societal environment was one in which unhealthy choices were easier than healthy choices (sometimes described as the "obesogenic environment").[258] Professor Baldwin said, for example, that:

> "... the explanation for [the rise in obesity] is plainly not to be found in a collapse of personal responsibility over this period. Instead the explanation revolves around a toxic combination of readily available cheap high energy food and drink, fewer opportunities for manual labour, an increase in car ownership, changing social norms concerning cooking and eating, and other features of the 'obesogenic' environment ..."[259]

Because behaviour is influenced at many levels, several witnesses commented that a range of interventions would need to be applied simultaneously to be effective.[260]

7.5. The link between health inequalities and obesity was also highlighted by some witnesses,[261] a connection well-documented in the recent Marmot review.[262] Professor Michie argued that this suggested that interventions should be targeted at particular groups: "NICE's review of behaviour change ... has demonstrated, and been supported by lots of evidence since, that interventions that are tailored towards the targeted population tend to be more effective than those that aren't".[263] We note the commitment by DH to take steps to reduce health inequalities, particularly through early intervention and prevention, and look forward to seeing how this will be translated in their forthcoming obesity strategy.

Gaps in the evidence-base

7.6. According to the Association for the Study of Obesity and NICE, the evidence relating to effective behaviour change interventions and obesity at the level of the individual and small groups was clear (and reflected in NICE guidance).[264] But, as with other policy areas, there are significant gaps in the applied research base at the population level. Dr Melvyn Hillsdon, University of Exeter, for example, said:

> "All the theory tells us that there must be some combination of personal, normative and environmental intervention to change population prevalence ... the big question is about population prevalence change, not so much about individually delivered interventions."[265]

Are Government obesity policies evidence-based?

7.7. Bearing in mind what is known about behaviour change interventions and reducing obesity, we have considered the extent to which the Government's

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[257] BC 19, BC 30, BC 32, BC 33, BC 42, BC 48, BC 50, BC 52, BC 56, BC 64, BC 90, BC 99, BC 105.

[258] BC 19, BC 33, BC 53, BC 64, BC 105.

[259] BC 66.

[260] BC 44, BC 52, BC 94, BC 105.

[261] BC 90.

[262] *Fair Society, Healthy Lives*, the Marmot Review (2010).

[263] Q 103.

[264] BC 44, BC 52.

[265] Q 334.

obesity policies are evidence-based. We are aware that our assessment is in advance of the publication of the Government's obesity strategy, which is due shortly.

The "obesogenic environment"

7.8. Several witnesses acknowledged that, following the Foresight report, DH had made efforts to pursue an evidence-based approach to obesity,[266] but they were critical of DH on the ground that insufficient attention was being paid to tackling the wider environment in which decisions are made.[267] Dr Campbell, for example, commented that "confronting the real commercial and environmental stimuli of obesity has not yet been achieved".[268] The current Government have stated that, though they want to assist individuals in taking responsibility for their own health, their obesity strategy will involve changes to the wider environment to make it easier for people to adopt a healthier diet and increase their physical activity.[269]

Change4Life

7.9. Change4Life began in January 2009 and is currently described as the marketing component of the Government's response to the rise in obesity.[270] According to DH, the campaign aims to inspire a societal movement in which everyone who has an interest in preventing obesity, including government, business, healthcare professionals, charities, schools, families or individuals, can play their part (see Box 8, page 37).

7.10. Several witnesses commented positively about the extent to which the Change4Life programme was evidence-based.[271] The Sustainable Development Commission, for example, said that the programme made good use of messengers and provided a good example of how to integrate behavioural sciences into the design of an intervention.[272] Tim Duffy of M&C Saatchi referred to the precise segmentation work undertaken by DH in order to target interventions more accurately. DH itself described to us how piloting was used: the Change4Life convenience stores project was piloted in the North East, after which, given the results of the pilot, the intervention it was rolled out more widely.[273]

7.11. The Change4Life campaign—in particular the Great Swapathon initiative—has, however, not been without criticism. The Great Swapathon provided vouchers to families for discounted food products and activities. But far from encouraging healthy eating, some evidence suggested that providing discounted healthy products actually encouraged people to buy more unhealthy ones.[274] Furthermore, although Sian Jarvis, Director General of Communications at DH, said that there had been some analysis of the extent

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[266] BC 58.

[267] BC 1, BC 2.

[268] Q 342.

[269] BC 161.

[270] http://www.dh.gov.uk/en/Publichealth/Change4Life/index.htm.

[271] BC 83, QQ 227, 571.

[272] BC 83.

[273] BC 161.

[274] *The influence of taxes and subsidies of energy purchased in an experimental purchasing study*, Epstein et al, 2010.

to which the Change4Life programme has influenced purchasing behaviour (and that the results were positive)[275], much of the evaluation so far has taken the form of an assessment of brand recognition and claimed change[276]—a worrying example of the lack of outcome measures associated with a behaviour change intervention which we describe in paragraph 6.7 above.

7.12. **It appears that the Change4Life programme has, on the whole, been evidence-based and appropriately targeted. We note the Government's commitment to continue using the brand and urge DH to ensure that future evaluations are robust and establish whether or not the programme is likely to be successful in the longer term.**

Population wide interventions: advertising, marketing and food labelling

7.13. Restrictions on advertising during children's programmes of products high in fat, salt and sugar were introduced by Ofcom in 2007. In June 2010, a NICE report (on preventing cardiovascular disease) recommended that these regulations should be extended on the ground that programmes for older audiences also had a powerful influence on young people.[277] Several witnesses commented on the impact of food marketing and advertising on food purchasing and eating behaviour, particularly on children,[278] noting that tackling food advertising was particularly cost effective because of its low cost and broad reach. Evidence about the impact of wider marketing activities, such as in-store marketing and product promotions, appears to be limited, though Professor Marteau suggested that there is a growing body of evidence that product packaging has an impact on food choice. Furthermore, there is evidence to suggest that television advertising can have a long-term impact on eating behaviour beyond consumption of the product being advertised. [279] In January 2010, DH commissioned an independent review of the regulatory and non-regulatory framework for marketing and promotion of food and drink to children. We await its findings, expected to be published shortly, with interest.[280]

7.14. In relation to food labelling, Anne Milton MP, Parliamentary Under Secretary of State at the DH, said that there was "a huge amount of conflicting evidence".[281] We do not think this is a fair summary. Although some witnesses argued that the impact of food labelling on purchasing and eating behaviour had yet to be established[282], all witnesses who were asked, with the exception of those from DH, agreed that the evidence demonstrated that those labels which included traffic light colours were better understood by consumers than those without.[283] Professor Marteau said, for example: "the evidence shows that people certainly understand ... more clearly ... the nutritional content of the food when traffic light labels are used, compared to a more numerical system" (although, she went on, "what we don't know very

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275 Q 73.

276 BC 157.

277 *Prevention of cardiovascular disease at the population level*, NICE (2010).

278 BC 58, BC 108.

279 Q 335.

280 BC 151

281 Q 735.

282 QQ 335, 561.

283 QQ 335, 421–6, 561

well is the impact of that knowledge on ... purchasing and ... consumption".)[284] A 2009 study by the Food Standards Agency concluded that the labels which achieved the highest levels of comprehension among consumers were: first, a label combining text (the words high, medium and low) and traffic light colours (71%) and, second, a label combining text, traffic light colours and percentage of guideline daily amount (GDA) (70%).[285] According to NICE, front of packaging traffic light labelling helped consumers make more informed choices about food consumption and, as a result, they recommended strongly the introduction of a single, integrated traffic light colour-coded system of food labelling as the national standard.[286]

7.15. Some witnesses asserted that there was not only a connection between traffic light labelling and comprehension, but also between traffic light labelling and behaviour. Asda and Sainsbury's both said they used this labelling on their own-brand products and both provided evidence that the introduction of traffic light labelling led to a decrease in sales of those products with red on the label.[287] Mr King told us, for example, that:

> "... on the introduction of Multiple Traffic Light labelling, against a comparable 12 week period during which fresh ready meal sales grew 26.2%, sales of Be Good To Yourself Easy Steam Salmon and Tarragon (mostly green traffic lights) grew 46.1%, whereas sales of our Taste the Difference Moussaka (mostly reds) decreased by 24%".[288]

7.16. Despite this evidence, the Government have decided to pursue a system of labelling based on percentage GDA. Ms Milton justified this decision on the basis that they were trying to achieve a system that was "consistent" and "meaningful", and "relevant to all the groups" that they were "trying to target".[289] Officials from DH gave a similar account. They said that the decision was based on evidence that a consistent approach was most likely to be effective, and that they did "not believe that traffic lights would have been consistently adopted by the food industry".[290] This suggests to us that the Government's policy on food labelling was determined not by the evidence but by what could be achieved through voluntary agreement with the food industry.

7.17. **We invite the Government to explain why their policy on food labelling and marketing of unhealthy products to children is not in accordance with the available evidence about changing behaviour. Given the evidence, we recommend that the Government take steps to implement a traffic light system of nutritional labelling on all food packaging. We further recommend that the Government reconsider current regulation of advertising and marketing of food products to children, taking a more realistic view of the range of programmes that children watch.**

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284 Q 335.

285 *Independent report on front of pack nutritional labelling*, FSA (2009).

286 *Ibid*.

287 BC 157, QQ 464–6, 552.

288 BC 157.

289 Q 733.

290 Q 375.

Partnership working and voluntary agreements

7.18. The Foresight report favoured tackling obesity through a partnership between government, science, business and civil society. In Chapter 5 we suggested that Change4Life is a positive example of partnership working (see Box 8, page 37). DH is also pursuing voluntary agreements with businesses as part of their attempt to change the environment through the Public Health Responsibility Deal (see Box 10, page 39). The first agreements under the food network of the Deal were published in March 2011. The only pledge relating to obesity is:

> "We will provide calorie information for food and non-alcoholic drink for our customers in out of home settings from 1 September 2011 in accordance with the principles for calorie labelling agreed by the Responsibility Deal".[291]

The Government's principles for calorie labelling are that calorie information should be: displayed clearly and prominently at point of choice; provided for standardised food and drink items sold; provided per portion, item or meal; and, displayed in a way that is appropriate for the consumer.[292]

7.19. In Chapter 5, we noted that the pledges made by the alcohol network were criticised by a number of health organisations (see Box 10, page 39). The pledge made by the food network is more specific than those made by the alcohol network and gives a defined time period for its completion. DH has not, however, specified the outcome measures which it will use to establish whether or not this pledge has had an impact on purchasing and eating behaviour, and when and on what basis they will make a decision on whether it should pursue alternative action to change behaviour. Moreover, this pledge does not reflect the evidence about the need to make substantial changes to the environment in order to tackle obesity at a population level, or the evidence that traffic light labels are the most effective form of labelling (see paragraphs 7.14–7.17 above).

Conclusion

7.20. **We draw attention to our recommendation in paragraph 5.27 about the failures of all current pledges made by the Public Health Responsibility Deal. Moreover, obesity is a significant and urgent societal problem and the current Public Health Responsibility Deal pledge on obesity is not a proportionate response to the scale of the problem. If the Government intend to continue to use agreements with businesses as a way of changing the population's behaviour, we urge them to ensure that these are based on the best available evidence about the most effective measures to tackle obesity at a population level. In particular, they should consider the ways in which businesses themselves influence the behaviour of the population in unhealthy ways. If effective measures cannot be achieved through agreement, the Government must pursue them through other means.**

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[291] *The Public Health Responsibility Deal, op. cit.*

[292] *Ibid.*

Weight management interventions

7.21. Although there is evidence about how to change behaviour when interventions are targeted at individuals (for example through commercially provided weight loss programmes which encourage changes to diet and physical activity behaviour),[293] some witnesses suggested that, at present, many weight management interventions are poorly evaluated. As a result, there is a lack of understanding about how these interventions affect behaviour, particularly in the long term.[294]

7.22. The Health Trainers programme allows clients to select goals and the majority choose to pursue changes in eating and physical activity. The design of this intervention was informed by health psychologists from the BPS working within DH under the previous Government. Health Trainers' practice is based on the Health Trainer Handbook developed by health psychologists on the basis of evidence of effective techniques for changing behaviour, including motivational interviewing, specific goal setting, self-monitoring, feedback and goal review. These techniques are directed towards enhancement of individual motivation and self-efficacy for change. The importance of these principles is identified in 2007 NICE guidance on behaviour change based on a review of available evidence.

7.23. The programme is also designed to reduce health inequalities, by targeting those in lower socio-economic groups and ethnic minorities.[295] The Health Trainers intervention is an example of effective collaboration between policy makers and experts leading to the development of evidence-based policies. There have however been problems with evaluation of the programme, particularly because of a lack of adequate controls as a result of insufficient funding and the poor quality data collected in local areas (see Box 15, page 49).

7.24. Problems with the evaluation of the Health Trainers programme reflect wider concerns about a lack of evidence-based commissioning and proper evaluation of weight management interventions at the local level (see paragraph 5.32 above). The National Obesity Observatory has developed a Standard Evaluation Framework for weight management interventions in order to support high quality evaluation.[296] The extent to which this is used is however unclear.[297]

Conclusion

7.25. Given these concerns about evidence-based commissioning and evaluation, **we recommend that DH should commission a review of the provision of weight management services, including the Health Trainers programme, across the country. We recommend further that NICE should compile a list of approved weight management services which adhere to their best practice guidance. If the Health Trainers programme is included in this list, we recommend that the**

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[293] Q 332.

[294] BC 4.

[295] BC 43, Q 100.

[296] BC 42.

[297] BC 4, Q 452.

Government should continue the programme, particularly in the light of its focus on tackling health inequalities.

Case Study 2: reducing car use

7.26. Greenhouse gas emissions from transport represent 21% of the total United Kingdom domestic emissions. Emissions from private car use constitute 78% of that figure, representing 17% of total emissions or 91.5 million tonnes of CO_2 in 2008. Although technological measures are important in reducing emissions, it is argued they are unlikely to be sufficient to achieve the necessary reduction in carbon emissions in the short term.[298] A significant reduction in car use is also needed.

What does the evidence say about how to reduce car use?

7.27. An individual's choice of transport mode is influenced by a number of factors. Social norms, habitual and automatic behaviour and public transport infrastructure have been identified as particularly important. For many drivers, it appears that environmental awareness is not an important factor, although people can be motivated to change their driving habits because of the health benefits of walking and cycling.[299] Changing choice of transport mode is likely to require a range of interventions, including interventions to change individual behaviour or attitudes, interventions to change the environment, and regulatory and fiscal measures.[300] Dr David Metz, former CSA at the DfT, observed with regard to the latter that without such 'upstream' regulatory and fiscal disincentives, a reduction in car use by some will tend to be offset by others taking advantage of reduced congestion.[301]

7.28. Many witnesses observed that "mode choice" was not the only factor in reducing car use. Professor Goodwin noted, for example, that little over a quarter of the decline in car use over the past decade could be accounted for by individuals using different modes of transport, the remainder was as a result of shortening journey distances and fewer journeys being undertaken.[302] Other witnesses cited the increased use of telecommunications and changing commuting patterns as significant factors.[303]

Fiscal measures and disincentives to car use

7.29. Many witnesses argued that policies that provide a direct disincentive to car use were most effective, if accompanied by improvements to alternative transport services. Successful examples of this included parking controls and road user charges,[304] and vehicle ownership taxes and fuel duties. While the latter are likely to be an effective intervention, it was acknowledged that they might fall disproportionately on rural drivers.[305] Examples of effective non-fiscal disincentives included measures to reduce road capacity and to calm

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[298] Appendix 6.

[299] BC 123, BC 138, BC 139.

[300] BC 122, BC 126, BC 133, BC 135, BC 138, BC 141, QQ 566, 600.

[301] BC 122, BC 141.

[302] BC 133.

[303] BC 122, BC 125.

[304] BC 121, BC 123, BC 125, BC 134, BC 137, QQ 566, 576.

[305] BC 117, BC 121, BC 125.

traffic, and pedestrianisation of city centres.[306] There is substantial evidence about the impact of the latter from European cities.[307]

Infrastructure

7.30. Some witnesses argued that "urban form", where the physical environment is designed to suit lifestyles, has developed around roads and cars in the United Kingdom. This creates a strong lock-in to cars as the primary form of personal transport and the car is seen by many as more convenient than other modes of transport.[308] While infrastructural changes alone may not be sufficient to change behaviour,[309] they are an effective and often necessary component of a package of interventions. This view is supported by the results of the DfT Sustainable Travel Towns pilots (see Box 18, page 64) which showed that there was a correlation between increases in cycling and bus use and investment in infrastructure, and that marketing and promotion without changes to infrastructure had little effect.[310]

7.31. Changes to infrastructure have to be appropriately targeted to the people, places and journeys which are most susceptive to influence.[311] The Cycling Demonstration Town programme, for example, suggested that infrastructure improvement was best focused on main routes to important destinations such as schools, workplaces and shopping centres.[312]

Information provision

7.32. Whilst information provision in isolation may have limited effect,[313] evidence suggests that large-scale education campaigns, together with other measures such as fiscal interventions and improvements to infrastructure, can be effective in changing behaviour.[314] The DfT agreed that behaviour change usually requires a package of interventions of which the provision and presentation of information is one aspect.[315] The provision of information and personalised travel planning were features of the Sustainable Travel Towns pilots and, according to some witnesses, they had a high impact and were cost-effective.[316]

Strengths and weaknesses of the evidence-base

7.33. A number of witnesses suggested that there now exists an extensive and well-researched evidence-base in the area of mode choice, in contrast to other policy areas, and that lack of knowledge and experience are not the main barrier to successful initiatives to change behaviour.[317] The UKCRC Centre

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306 BC 121, BC 133.

307 BC 133.

308 BC 118, BC 123, BC 135.

309 BC 138, BC 139.

310 BC 127.

311 BC 131, BC 139.

312 BC 135.

313 BC 141, QQ 583, 602.

314 BC 123, BC 125.

315 BC 138.

316 BC 122, BC 129.

317 BC 121, BC 133, BC 139.

for Diet and Activity Research Centre suggested, however, that there is limited evidence from well-designed studies to indicate the most effective interventions to change travel mode share in the population. This reflects the point made above that there is a lack of applied research at a population level. This did not, they said, mean that there were no effective interventions but rather that approaches which showed promise should be developed further and more rigorously evaluated.[318]

7.34. Some witnesses identified, in particular, a lack of evidence about how to reduce car use for medium-length trips. This is an important gap in the evidence-base, as figures suggest that trips of less than 10 miles only contribute 36% of carbon emissions from cars, while trips of more than 10 miles account for 64%.[319] Transport for Quality of Life agreed that interventions intended to reduce carbon emissions should focus on medium and longer trips.[320] **We recommend that the DfT should prioritise funding to research the most effective behaviour change interventions to reduce car use for medium and longer-length journeys and undertake pilots of those interventions as soon as possible.**

Are the Government's policies based on the evidence?

7.35. The Government's approach to changing travel behaviour was outlined in the *Creating Growth, Cutting Carbon* white paper published in January 2011. Key elements are:

- promoting and enabling choice rather than restricting choice;
- integrated policy packages;
- promoting alternatives to travel (see paragraph 7.28); and
- the localism agenda (the Sustainable Transport Fund).

Promoting and enabling choice

7.36. The DfT focus on promoting and enabling choice is consistent with the Government's more general approach in favour of non-regulatory and non-fiscal measures (see paragraphs 5.2–5.15 above). As a result, the Government's sustainable transport policy is marked by an absence of significant fiscal and regulatory disincentives to change behaviour. But, as we have said (in paragraph 7.29), the evidence indicates that strong disincentives, many of which are likely to be financial, are a key element in changing travel-mode choices. **Bearing in mind our concern (see paragraph 5.14 above) that the Government's preference for non-regulatory interventions may lead officials to give insufficient consideration to regulatory and fiscal interventions, we urge the DfT to ensure that evidence for both non-regulatory and regulatory measures is taken into account when formulating policies to reduce car use.**

7.37. An emphasis on promoting and enabling choice also confirms the importance of having an infrastructure which provides a broader range of cheap and

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[318] BC 139.

[319] BC 126, BC 127, BC 140.

[320] BC 127.

efficient public transport services. We were told that European cities with low levels of car use have consistently spent far more per person on infrastructure. Cycling England said in relation to cycling, for example: "levels of expenditure on cycling in successful European towns and cities ... were at least £10 per head of population per year. By contrast, analysis of Local Transport Plan outturn expenditure data for English local authorities, carried out at our request by the Department for Transport, demonstrated that the average level of spend by English local authorities was less than £1 per head of population per year".[321] In our seminar on reducing car use, it was noted that spend per person in Copenhagen was around £40 per head of population per year.[322]

7.38. The Sustainable Transport Fund (see paragraphs 7.44–7.46) will provide for improvements to infrastructure in a local context, though, we were told, it would "not support major rail, passenger transport or road infrastructure enhancements, which would be more appropriately funded from other sources".[323] Ms Sloman of Transport for Quality of Life highlighted concerns that:

> "... at a time when Local Authorities are facing severe cutbacks, they will be in a position where they are cutting money for Sunday bus services, socially supported bus services, all sorts of other local transport services and yet getting funding to promote bus use. We certainly know from the Sustainable Travel Town evaluation that if you have a worsening service, promotion of it isn't going to get more people using it."[324]

But in response, Mr Dowie said that the DfT "still have ... a very substantial local capital programme".[325] **As the evidence suggests that good infrastructure is a prerequisite for, and greatly enhances, the effectiveness of other "smarter choices" measures, we strongly encourage the DfT to ensure that, wherever possible in a time of financial stringency, a sufficient proportion of funds is maintained to make effective improvements and changes to infrastructure.**

Integrated policy packages

7.39. The DfT has embraced the use of integrated policy packages as part of its promoting and enabling choice agenda. The Sustainable Travel Towns (STT) initiative (see Box 18, page 64) and the Cycling Cities and Towns programme (see Box 19, page 65) are evidence of the department's commitment to using a whole range of "smarter choices" (see Box 17, page 63) initiatives together with small-scale infrastructure change.

7.40. A number of witnesses welcomed this emphasis on encouraging "smarter choices" within a package of interventions that included other harder measures and the provision of infrastructure, noting that packages are more cost-effective. Ms Sloman said, for example, that "it is by combining the better infrastructure, the better services and the encouragement for people to use those that you get more bang for your buck. You achieve more change

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321 BC 163.

322 Appendix 5.

323 *Local sustainable transport fund—guidance on the application process*, DfT (January 2011).

324 Q 641.

325 Q 642.

for each pound you spend because you are not just improving the service, you are telling people about it".[326] Simon Houldsworth, Transport Policy Manager for Darlington, agreed that "without the package you will not get the benefits or the value for money that travel behaviour delivers".[327]

7.41. **Whilst we welcome the DfT's emphasis on the use of policy packages, we note they do not include regulatory and fiscal measures and so do not wholly reflect the evidence about how to change transport mode choice. This suggests that their effectiveness and, in turn, their cost-effectiveness could well be limited.**

BOX 17

"Smarter Choices"

The term "smarter choices" was used by most witnesses in relation to interventions to change travel behaviour. This term originated with the 2004 DfT report, *Smarter choices: changing the way we travel.*[328]

There was disparity across the evidence we received about what sorts of interventions should be classified as "smarter choices". Some witnesses told us that "smarter choices" interventions comprise both "soft" measures, such as personal travel planning and local transport marketing, and "hard" measures, such as improvements to infrastructure and pedestrianisation.[329] Others excluded "hard" measures from their descriptions, equating "smarter choices" only with "soft measures".[330] The 2004 report on smarter choices suggests the latter definition—"soft measures"—is more accurate. The 2004 report describes itself as exploring the impact of soft factor interventions and does not address improvements to infrastructure or pedestrianisation. The DfT appear to use this term to describe any intervention that does not make use of regulation or fiscal policy.

Dr Anable, Centre for Transport Research, University of Aberdeen, was clear that "smarter choices" should not be understood as synonymous with "nudges". She noted that "smarter choices" could include nudges but were also about changing social practices and a new approach to policy formulation.[331]

Localism and the sustainable transport fund

7.42. Several witnesses agreed that local authorities were well placed to implement effective interventions to change travel behaviour because they were responsible for local transport infrastructure.[332] Some, however, sounded a note of caution, on the ground that not all local authorities had the necessary range of professional skills and resources to research and interpret the evidence about how to change behaviour (see paragraph 5.31 above).[333] Transport for Quality of Life, for example, said that it was common for "smarter choices" or other behaviour change teams to be employed on short-

326 Q 647.

327 *Ibid.*

328 Professor Goodwin told us that the report was originally entitled "soft measures" (Q 588).

329 BC 125, BC 173.

330 BC 121.

331 Q 585.

332 BC 116, BC 121, BC 127, BC 136, BC 141.

333 BC 121, BC 127, BC 136.

term contracts in local authorities. This has prevented local authorities from building up the necessary expertise.[334]

7.43. A similar point was made in relation to a lack of skills within local authorities to evaluate interventions properly.[335] Mr Dowie told us that the DfT was not expecting local authorities to have these skills and that the department had a responsibility to ensure that an evaluation framework was in place. To that end they have published evaluation guidance for sustainable transport interventions (see paragraph 5.33 above).[336] We note however that the Sustainable Transport white paper states that local authorities themselves will be responsible for sharing what works and developing a framework to improve capability at the local level (see paragraph 5.34 above).

BOX 18

The Sustainable Travel Towns initiative

The STT initiative ran between 2004 and 2009 in Darlington, Peterborough and Worcester. The pilots were designed to explore the effectiveness of "smarter choices" measures, therefore excluding fiscal or regulatory measures. Each of the towns employed multi-faceted packages of interventions incorporating a range of non-regulatory and non-fiscal measures, such as:

- The provision of infrastructure: on a modest scale and with a focus on cycling and pedestrians.
- The provision of new services, such as car sharing schemes, car clubs and community transport services.
- The provision of education and propaganda.
- Emphasis on community involvement.
- The engagement of individuals through consultation exercises, competitions, newsletters and feedback.[337]

This package of measures achieved a reduction in the number of car driver trips by 9% and car driver distance by 5–7%,[338] though witnesses raised some concerns about its evaluation (see paragraph 6.5 above).

7.44. The local sustainable transport fund is the successor to the STT pilots (see Box 18, page 64). The fund will make £560 million available over four years for "smarter choices" local sustainable travel interventions. The DfT describes the purpose of the fund as giving "local transport authorities the opportunity, working in partnership with their communities, to identify the right solutions that meet the particular challenges faced in their areas and deliver the greatest benefits for their communities".[339]

7.45. The department has developed an Enabling Behaviour Change Information Pack for bidders to the Sustainable Transport Fund. The Pack sets out the

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[334] BC 127.

[335] BC 121, BC 127, BC 136.

[336] QQ 663, 666.

[337] BC 125, BC 141.

[338] BC 138.

[339] *Ibid*.

evidence about effective interventions from Cycling Cities and Towns and the STT pilots. It is intended to help those who bid for funding to base their bids on the available evidence about what works.[340] Whilst we acknowledge that this is a useful development, we note that the guidance simply lists the interventions and does not provide analysis of their effectiveness or contain very much about the use of fiscal measures and other disincentives to car use. Though we recognise that some disincentives to reduce car use would need to be implemented centrally (such as changes to fuel pricing policy), there are still others that are available to local authorities (such as increased parking charges, pedestrianisation and road user charges) and it will be particularly important that central government provides direction in relation to such disincentives in the light of the suggestion from some witnesses that local authorities are reluctant to implement these measures for fear of competition from other cities and lost revenue.[341]

BOX 19

Cycling Cities and Towns

The Cycling Cities and Towns programme has built on the first six cycling demonstration towns. The demonstration towns used multi-faceted packages of interventions to increase cycling, including "new cycle infrastructure; Bikeability cycle training; intensive programmes targeted at schools and workplaces; initiatives to remove barriers to cycling by providing equipment, building skills and increasing confidence; and awareness-raising campaigns under strong brands".[342] These towns saw an average increase in cycling of 27%. The Cycling Cities and Towns programme is based on the evidence of effectiveness of interventions in the demonstration towns.

7.46. **Although we welcome the principle of DfT's Local Sustainable Transport Fund, the initiative is based on a pilot project which was incompletely evaluated and so did not provide evidence about the long-term effectiveness of interventions. Furthermore, as we have noted in paragraph 7.41, the Sustainable Travel Towns pilot did not wholly reflect the evidence about how to change transport mode choice.**

7.47. **We commend DfT's recognition that, if responsibility for interventions is to be devolved to local agents, guidance to commissioners on the evidence and an evaluation framework are necessary. We note, however, that current guidance does not take into account the evidence about the need for strong disincentives to car use needed to achieve significant changes in behaviour and fails to provide any analysis of the evidence associated with effective interventions.**

7.48. We are not clear about the extent to which Government intend to reduce carbon emissions by reducing car use but, if they hope to achieve a significant reduction, the evidence suggests that regulatory and fiscal disincentives to car use will be required. **We recommend that the**

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340 http://www.DepartmentforTransport.gov.uk/adobepdf/165252/enablingbehaviourchangeinfopack.pdf.

341 BC 125, BC 135.

342 BC 131.

Government (a) establish and publish targets for a reduction in carbon emissions as a result of a reduction in car use; (b) publish an estimate of the percentage reduction in emissions which will be achieved through reducing car use and the timescale for its achievement; and (c) set out details of the steps they will take if this percentage reduction is not achieved by this time.

CHAPTER 8: CONCLUSIONS AND RECOMMENDATIONS

Definitions, categorisation and the ethics of behaviour change interventions (Chapter 2)

Interventions and ethical acceptability

8.1. The idea of the Government intervening to change people's behaviour will often be controversial, and so it is important that ministers are always able to explain the evidence-base of any proposed behaviour change intervention, and why it is a necessary and proportionate means of addressing a well-defined problem (paragraph 2.20).

Understanding what influences behaviour (Chapter 3)

Applied research at a population level

8.2. There is a lack of applied research at a population level to support specific interventions to change the behaviour of large groups of people (including a lack of evidence on cost-effectiveness and long-term impact). This is a barrier to the formulation of evidence-based policies to change behaviour. To address this problem, the Government will need both to evaluate their own behaviour change interventions rigorously and establish new evidence by commissioning and funding more applied behavioural research on this scale (paragraph 3.10).

Evidence-based policy (Chapter 4)

Are Government policies evidence-based?

8.3. We acknowledge that there will be occasions when it is legitimate for a government not to implement behaviour change interventions for which there is good evidence of effectiveness. In these circumstances, however, we believe that ministers have a responsibility to explain why they have decided not to do so (paragraph 4.7).

8.4. We agree with the principle, stated in the Government's *Principles of Scientific Advice*, that ministers should explain publicly their reasons for policy decisions, particularly when a decision is not consistent with scientific advice and, in doing so, should accurately represent the evidence. This places a responsibility on scientists and social scientists within government to ensure that ministers are provided with accurate and up-to-date advice on the available evidence about how to change behaviour so that they can identify where and why they are not basing a policy on the evidence (paragraph 4.8).

Addressing the barriers to evidence-based policy

8.5. We urge ministers to consult their departmental Chief Scientific Advisers about whether the amount of money spent on applied behaviour change research at a population level is sufficient to meet their policy needs (paragraph 4.16).

Translation of research

Role of Government scientists

8.6. We recommend that, at the earliest opportunity, the Government appoint a Chief Social Scientist who reports to the Government Chief Scientific Adviser and is an independent expert in social science research to ensure the provision of robust and independent social scientific advice (paragraph 4.23).

8.7. We further recommend that the Government consider whether existing mechanisms for the provision of social scientific advice, in particular advice on behavioural science, are fit for purpose. This should include consideration of how departmental Chief Scientific Advisers and social scientists within departments can best work together to provide up to date social scientific advice to support evidence-based behaviour change interventions (paragraph 4.24).

Better links between the academic and policy making communities

8.8. Departmental Chief Scientific Advisers, whether or not they have experience of the sciences of human behaviour, should be responsible for establishing and maintaining contacts with leading behavioural scientists with expertise relevant to their policy areas and for consulting them as necessary (paragraph 4.30).

Behavioural insights for policy makers

8.9. We recommend that the Cabinet Secretary, in consultation with the Government Chief Scientific Adviser and Chief Social Scientist, once appointed, should take steps to ensure that civil servants with responsibility for policy making have the necessary understanding of the importance of changing behaviour and can identify the most appropriate people to consult in their own departments about the development of behaviour change interventions (paragraph 4.32).

Guidance to policy makers

8.10. We recommend that the Cabinet Office, in consultation with the Chief Social Scientist, once appointed, consider how to consolidate the available guidance in a form which is evidence-based and accessible to policy makers (paragraph 4.35).

8.11. We further recommend that the National Institute for Clinical Excellence updates its 2007 Behaviour Change Guidance and considers whether accessible, multi-disciplinary guidance could be provided in relation to health-related behaviour change policies, particularly to offer more explicit advice on how behaviour change techniques could be applied to reduce obesity, alcohol abuse and smoking (paragraph 4.36).

Sharing knowledge across Government

8.12. We recommend that the Cabinet Office, together with the Government Chief Scientific Adviser and Chief Social Scientist, once appointed, review the current mechanisms for sharing knowledge about behaviour change among government departments with a view to introducing a more streamlined structure (paragraph 4.41).

8.13. We recommend further that this revised structure should involve the continuation of work begun on the "inventory of behaviours" in order to establish an archive of behaviour change interventions. This archive should provide accounts of the evaluation of the interventions and include unsuccessful as well as successful interventions (paragraph 4.42).

The Government approach to changing behaviour (Chapter 5)

The need for a range of interventions

8.14. In general, the evidence supports the conclusion that non-regulatory or regulatory measures used in isolation are often not likely to be effective and that usually the most effective means of changing behaviour at a population level is to use a range of policy tools, both regulatory and non-regulatory. Given that many factors may influence behaviour, this conclusion is perhaps unsurprising (paragraph 5.13).

8.15. We welcome efforts by the Government to raise awareness within departments of the importance of understanding behaviour, and the potential this has for the development of more effective and efficient policies. We are concerned, however, that emphasising non-regulatory interventions will lead to policy decisions where the evidence for the effectiveness of other interventions in changing behaviour has not been considered. This would jeopardise the development of evidence-based, effective and cost-effective policies (paragraph 5.14).

8.16. We therefore urge ministers to ensure that policy makers are made aware of the evidence that non-regulatory measures are often not likely to be effective if used in isolation and that evidence regarding the whole range of policy interventions should be considered before they commit to using non-regulatory measures alone (paragraph 5.15).

Partnership working and voluntary agreements

8.17. The involvement of other organisations to support the Government's behaviour change initiatives may provide valuable opportunities to improve the effectiveness of behaviour change interventions, in particular by allowing a range of messengers to be used to deliver them. We welcome the Government's intention to use such collaborations (paragraph 5.25).

8.18. However, we have major doubts about the effectiveness of voluntary agreements with commercial organisations, in particular where there are potential conflicts of interest. Where voluntary agreements are made, we recommend that the following principles should be applied in order to ensure that they achieve their purpose:

- The Government should specify clearly what they want businesses to do based on the evidence about how to change behaviour, and what steps they will take to achieve the same result if voluntary agreements are not forthcoming, or prove ineffective.
- Voluntary agreements should be rigorously and independently evaluated against measurable and time-limited outcomes (paragraph 5.26).

8.19. Given that these principles do not appear to have been applied consistently to the Public Health Responsibility Deal Network, we urge the Department of Health, in particular, to ensure that these principles are followed when

negotiating further voluntary agreements. In relation to the current agreements, we recommend that the Department of Health should state for each pledge what outcomes are expected and when, and provide details of what steps they will take if the agreements are not effective at the end of the stated period (paragraph 5.27).

The role of local authorities

8.20. Although decentralising responsibility may provide a useful opportunity to tailor local behaviour change initiatives and to help build the evidence-base for applied behaviour change research at the population level, steps should be taken to ensure that interventions are evidence-based and properly evaluated. To this end, we recommend that the Government:

- produce guidance for local authorities on how to use evidence effectively to design, commission and evaluate interventions and on the need to involve experts in the design and evaluation process, and provide advice on how to best use the tendering process to ensure value for money;
- take steps to ensure that evaluation of interventions, including data collection and reporting of behaviour change outcomes, across local areas is of sufficiently high quality to allow comparisons and analysis;
- takes steps to ensure that what is learnt by a local government in one place can be readily transmitted to other local governments; and
- provide funding only for those schemes which are based on sound evidence. Demonstration of rigorous evaluation and contribution to the evidence-base should be a requirement for future funding for behaviour change interventions (paragraph 5.30).

Evaluation of behaviour change interventions (Chapter 6)

Ensuring effective evaluation

8.21. Effective evaluation requires that:

- evaluation should be considered at the beginning of the policy design process. External evaluation expertise should be sought, where necessary, from the policy's inception;
- relevant outcome measures—as distinct from outputs—should be established at the beginning of the policy development process;
- the duration of the evaluation process should be sufficiently long-term to demonstrate that an intervention has resulted in maintained behaviour change;
- pilot studies, using population-representative samples, followed by controlled trials assessing objective outcomes should be used whenever practicable; and
- sufficient funds should be allocated for evaluation, recognising that establishing what works, and why, is likely to result in better value for money in the long-term (paragraph 6.14).

8.22. We find however that, at present, evaluations of Government behaviour change interventions often lack one or more of these necessary elements. While we welcome the Government's revision of the Magenta Book, the

evaluation guidance for policy makers and analysts, we believe that it could be further improved. We recommend that the Government consult external evaluation experts on the creation of a concise document for policy makers, containing only the most important principles of evaluation. We further recommend that they make clear what steps they will take to ensure that the revised guidance leads to a change in evaluation culture across Whitehall (paragraph 6.15).

Case studies (Chapter 7)

Case study 1: tackling obesity

Change4Life

8.23. It appears that the Change4Life programme has, on the whole, been evidence-based and appropriately targeted. We note the Government's commitment to continue using the brand and urge the Department of Health to ensure that future evaluations are robust and establish whether or not the programme is likely to be successful in the longer term (paragraph 7.12).

Population wide interventions: advertising, marketing and food labelling

8.24. We invite the Government to explain why their policy on food labelling and marketing of unhealthy products to children is not in accordance with the available evidence about changing behaviour. Given the evidence, we recommend that the Government take steps to implement a traffic light system of nutritional labelling on all food packaging. We further recommend that the Government reconsider current regulation of advertising and marketing of food products to children, taking a more realistic view of the range of programmes that children watch (paragraph 7.17).

Voluntary agreements

8.25. We draw attention to our recommendation about the failures of all current pledges made by the Public Health Responsibility Deal (see paragraph 8.19). Moreover, obesity is a significant and urgent societal problem and the current Public Health Responsibility Deal pledge on obesity is not a proportionate response to the scale of the problem. If the Government intend to continue to use agreements with businesses as a way of changing the population's behaviour, we urge them to ensure that these are based on the best available evidence about the most effective measures to tackle obesity at a population level. In particular, they should consider the ways in which businesses themselves influence the behaviour of the population in unhealthy ways. If effective measures cannot be achieved through agreement, the Government must pursue them through other means (paragraph 7.20).

Weight management interventions

8.26. We recommend that the Department of Health should commission a review of the provision of weight management services, including the Health Trainers programme, across the country. We recommend further that the National Institute for Clinical Excellence should compile a list of approved weight management services which adhere to their best practice guidance. If the Health Trainers programme is included in this list, we recommend that the Government should continue the programme, particularly in the light of its focus on tackling health inequalities (paragraph 7.25).

Case study 2: reducing car use

Weaknesses of the evidence-base

8.27. We recommend that the Department for Transport should prioritise funding to research the most effective behaviour change interventions to reduce car use for medium and longer-length journeys and undertake pilots of those interventions as soon as possible (paragraph 7.34).

Promoting and enabling choice: the role of regulation and infrastructure

8.28. Bearing in mind our concern that the Government's preference for non-regulatory interventions may lead officials to give insufficient consideration to regulatory and fiscal interventions (see paragraph 8.15), we urge the Department for Transport to ensure that evidence for both non-regulatory and regulatory measures is taken into account when formulating policies to reduce car use (paragraph 7.36).

8.29. As the evidence suggests that good infrastructure is a prerequisite for, and greatly enhances, the effectiveness of other "smarter choices" measures, we strongly encourage the Department for Transport to ensure that, wherever possible in a time of financial stringency, a sufficient proportion of funds is maintained to make effective improvements and changes to infrastructure (paragraph 7.38).

Integrated policy packages

8.30. Whilst we welcome the Department for Transport's emphasis on the use of policy packages, we note they do not include regulatory and fiscal measures and so do not wholly reflect the evidence about how to change transport mode choice. This suggests that their effectiveness and, in turn, their cost-effectiveness could well be limited (paragraph 7.41).

Localism and the Sustainable Transport Fund

8.31. Although we welcome the principle of the Department for Transport's Local Sustainable Transport Fund, the initiative is based on a pilot project which was incompletely evaluated and so did not provide evidence about the long-term effectiveness of interventions. Furthermore, (see paragraph 8.30), the Sustainable Travel Towns pilot did not wholly reflect the evidence about how to change transport mode choice (paragraph 7.46).

8.32. We commend the Department for Transport's recognition that, if responsibility for interventions is to be devolved to local agents, guidance to commissioners on the evidence and an evaluation framework are necessary. We note, however, that current guidance does not take into account the evidence about the need for strong disincentives to car use needed to achieve significant changes in behaviour and fails to provide any analysis of the evidence associated with effective interventions (paragraph 7.47).

8.33. We recommend that the Government (a) establish and publish targets for a reduction in carbon emissions as a result of a reduction in car use; (b) publish an estimate of the percentage reduction in emissions which will be achieved through reducing car use and the timescale for its achievement; and (c) details of the steps they will take if this percentage reduction is not achieved by this time (paragraph 7.48).

APPENDIX 1: MEMBERS AND DECLARATIONS OF INTEREST

Members:

† Lord Alderdice
Lord Crickhowell
Baroness Hilton of Eggardon
Lord Krebs
† Lord May of Oxford
Baroness Neuberger (Chairman)
† Baroness O'Neill of Bengarve
Lord Patel
Baroness Perry of Southwark
Earl of Selborne
† Lord Sutherland of Houndwood
Lord Warner

† Co-opted Members

Specialist Adviser:

Professor Charles Abraham, Professor of Behaviour Change, Peninsula College of Medicine and Dentistry, Universities of Exeter and Plymouth

Declared Interests

Lord Alderdice
Retired consultant psychiatrist
President of ARTIS (Europe) Ltd

Lord Crickhowell
Daughter, Sophie Edwards and her company Interaction CTHT Ltd have submitted written evidence

Baroness Hilton of Eggardon
None

Lord Krebs
Principal, Jesus College Oxford
Chairman, Oxford Risk Ltd
President, Campden BRI
Trustee, Nuffield Foundation
Chairman, Nuffield Council on Bioethics enquiry into the Ethics of Public Health (2007)
Chairman, Royal Society Science Policy Advisory Group
Member, Committee on Climate Change, Chairman of Adaptation sub Committee

Lord May of Oxford
Member of Climate Change Committee
Adviser to Tesco "Sustainable Consumption Institute" at Manchester University

Baroness Neuberger
Chair, Responsible Gambling Strategy Board
Chair, the Responsible Gambling Fund

Baroness O'Neill of Bengarve

Member of Advisory Board, Centre for Health Incentives
Trustee, Sense About Science
Member Council, Foundation for Science & Technology
Chair of the Nuffield Foundation
Societal Issue Panel EPSRC (member)
Fellow, Academy of Medical Science

Lord Patel
None

Baroness Perry of Southwark
Chair, Research Governance Committee, Addenbrooke's NHS Trust/Cambridge University Clinical School

Earl of Selborne
Chair of the Partners Board of the Living With Environmental Change Programme

Lord Sutherland of Houndwood
None

Lord Warner
None

A full list of Members' interests can be found in the Register of Lords Interests: http://www.parliament.uk/mps-lords-and-offices/standards-and-interests/register-of-lords-interests

Professor Charles Abraham
Honorary professorial positions University of Sussex, University of Nottingham and University of Maastricht
Health Professionals Council Certified Health Psychologist
Member of the Programme Development Group which developed the 2007 National Institute of Clinical and Public Health Excellence Guidance on "Behaviour change at population, community and individual levels"
Previous part-time Research Consultant, Division of Public Health, Department of Health
Previous research consultant for Unilever
Fellow of the British Psychological Society
Fellow of the European Health Psychology Society
Fellow of the International Association of Applied Psychology
Member of the International Society of Behavioral Nutrition and Physical Activity
Previous recipient of research funding from Shell
In receipt of research funding from the UK Medical Research Council

APPENDIX 2: LIST OF WITNESSES

Evidence

Evidence is published online at www.parliament.uk/hlsciencesub1 and available for inspection at the Parliamentary Archives (020 7219 5314).

Evidence received by the Committee is listed below in order of receipt and in alphabetic order. Witnesses without a * gave written evidence only. Witnesses marked with a * gave both oral and written evidence. Witnesses marked with ** gave oral evidence and did not submit any written evidence.

Oral evidence in chronological order

*	(QQ 1–50)	Dr David Halpern, Head of the Behavioural Insights Team, Cabinet Office, and the Government Economic and Social Research Team
*	(QQ 51–85)	Dr Sunjai Gupta, Head of Public Health Strategy and Social Marketing, Department of Health, Ms Sian Jarvis, Director-General of Communications, Department of Health, Dr Gemma Harper, Chief Social Scientist, Department for Environment, Food and Rural Affairs and Central Office of Information
*	(QQ 86–138)	Professor Susan Michie, Professor of Health Psychology, University College London, Professor Elizabeth Shove, Professor of Sociology, Lancaster University, Professor Imran Rasul, Professor of Economics, University College London, Dr Wendy Ewart, Director of Strategy, Medical Research Council (MRC), and Dr Dawn Woodgate, Economic and Social Research Council
*	(QQ 139–184)	Professor Mike Kelly, National Institute for Clinical Excellence, Professor John Britton, University of Nottingham and Director of the UK Centre for Tobacco Control Studies, and Dr Tim Chatterton, University of the West of England
*	(QQ 185–225)	Professor Lyndal Bond, Leader of the MRC programme "Evaluating the Health Effects of Social Interventions", Professor Ray Pawson, Professor of Social Research Methodology, University of Leeds, Professor David Gunnell, Professor of Epidemiology in the School of Social and Community Medicine, University of Bristol, Dr Siobhan Campbell, Head of Policy Evaluation, Department of Energy and Climate Change, and Mr Mike Daly, Department for Work and Pensions
*	(QQ 226–261)	Institute of Practitioners in Advertising, M&C Saatchi, and Unilever
*	(QQ 262–282)	Drinkaware, Groundwork, and Swanswell
**	(QQ 283–329)	Department of Energy and Climate Change, Department for Environment, Food and Rural Affairs, and Growing Against Gangs Foundation

*	(QQ 330–349)	Dr Melvyn Hillsdon, University of Exeter, Dr Ian Campbell, Medical Director of Weight Concern, and Professor Theresa Marteau, King's College London and University of Cambridge
*	(QQ 350–386)	Department of Health and Professor Erik Millstone, Professor of Science Policy, University of Sussex
*	(QQ 387–430)	Living Well West Midlands, Great Yarmouth Community Trust, Yorkshire and Humber Health Trainer Team and Central YMCA
*	(QQ 431–455)	Ms Katherine Kerswell, Group Managing Director of Kent County Council, and former president of the Society of Local Authority Chief Executives (SOLACE), Association of Public Health Directors, Weight Watchers, and MEND Central
*	(QQ 456–475)	Sainsbury's
*	(QQ 476–502)	Diageo
*	(QQ 503–554)	Asda, and the Fitness Industry Association
*	(QQ 555–574)	UK Faculty of Public Health, British Medical Association, and Dr Susan Jebb, Head of Nutrition and Research, MRC, and Chair, Cross-Government Expert Advisory Group on Obesity and the Responsibility Deal Food Network
*	(QQ 575–594)	Dr Stephen Skippon, Principal Scientist, Shell Global Solutions, Dr Jillian Anable, Centre for Transport Research, University of Aberdeen, and Professor Phillip Goodwin, Centre for Transport and Society, University of the West of England
*	(QQ 595–628)	Dr Lorraine Whitmarsh, Environmental Psychologist, Cardiff University, Professor Peter Bonsall, Professor of Transport Planning, University of Leeds, Sustainable Development Commission, and Professor David Banister, Director, Transport Studies Unit, University of Oxford
*	(QQ 629–675)	Department for Transport, Darlington Council, Worcestershire Council, and Transport for Quality of Life
*	(QQ 676–701)	Sustrans, RAC Foundation, Cycling England, and Stagecoach UK Bus
*	(QQ 702–740)	Mr Oliver Letwin MP, Minister of State, Cabinet Office, Ms Anne Milton MP, Parliamentary Under Secretary of State for Public Health, and Mr Norman Baker MP, Parliamentary Under Secretary of State for Transport

Written evidence in order of receipt

*	(BC 1)	Sustrans

	(BC 2)	Professor Gregory Maio, Professor Geoff Haddock, Cardiff University and Dr Katy Tapper, Swansea University
	(BC 3)	Joan Costa-Font, London School of Economics
	(BC 4)	Health and Well-Being Alliance
	(BC 5)	National Social Marketing Centre
*	(BC 6)	Professor Ray Pawson, University of Leeds
	(BC 7)	Max-Planck Institute for Evolutionary Biology
	(BC 8)	Professor Peter John, University of Manchester
	(BC 9)	Dr Diane Dixon and Professor Marie Johnston, Chartered Health Psychologists
	(BC 10)	Carolyn Lester, Public Health Wales
	(BC 11)	Dr Karen Lucas, Transport Studies Unit, University of Oxford
	(BC 12)	Gateway Family Services
	(BC 13)	Professor Robert Cialdini, Arizona State University and Steve Martin, Influence at Work
	(BC 14)	Dr Peter Mathews, Pedagogic Consultant
	(BC 15)	Foteini Papdopoulou, PhD Candidate, University of Loughborough
	(BC 16)	Food Standards Agency (FSA)
*	(BC 17)	UK Centre for Tobacco Control Studies
	(BC 18)	Do Something Different Behaviour Change Programme
	(BC 19)	Professor Martin Caraher, City University London
	(BC 20)	Lifestyle service, South Staffordshire PCT
	(BC 21)	Workplace Cycle Challenge
	(BC 22)	British Association for Applied Nutrition and Nutritional Therapy (BANT)
	(BC 23)	Professor Erik Bichard, University of Salford
*	(BC 24)	Government Economics Service (GES) and the Government Social Research Service (GSR)
*	(BC 25)	Yorkshire and Humber Health Trainer Team
	(BC 26)	Halton and St Helens—NHS Health Improvement Team
	(BC 27)	NHS Stop-Smoking Services and the NHS Centre for Smoking Cessation and Training (NCSCT)
*	(BC 28)	Professor Erik Millstone, SPRU, University of Sussex
*	(BC 29)	Dr Alison Bish and Professor Susan Michie, University College London
*	(BC 30)	Weight Watchers UK

	(BC 31)	Dr Adam Corner, Dr Lorraine Whitmarsh, Professor Nick Pidgeon and Professor Greg Maio, Cardiff University
*	(BC 32)	Great Yarmouth Community Trust
	(BC 33)	Slimming World
	(BC 34)	Professor Frances Griffiths, University of Warwick
	(BC 35)	Mr Robert Langford, Telford and Wrekin Community Health Services
	(BC 36)	UK Society for Behavioural Medicine (UKSBM)
	(BC 37)	Professor Mary Rudolf, Leeds General Infirmary
	(BC 38)	Wellcome Trust
	(BC 39)	Countryside and Community Research Institute (CCRI)
	(BC 40)	Interaction
	(BC 41)	Plunkett Foundation
	(BC 42)	National Obesity Observatory (NOO)
*	(BC 43)	Dr Benjamin Gardner, Professor Susan Michie, University College London and Professor Nichola Rumsey, University of the West of England
	(BC 44)	Camden Weight Loss Research Team (CAMWEL)
*	(BC 45)	Professor Elizabeth Shove, Lancaster University
*	(BC 46)	ESRC Centre for Business Relationships, Accountability, Sustainability and Society (BRASS)
	(BC 47)	British Retail Consortium (BRC)
	(BC 48)	British Heart Foundation
	(BC 49)	Cambridge Weight Plan
	(BC 50)	LighterLife
	(BC 51)	Global Action Plan
*	(BC 52)	National Institute for Health and Clinical Excellence (NICE)
*	(BC 53)	British Medical Association (BMA)
	(BC 54)	University of Bath, Faculties of Humanities and Social Sciences
	(BC 55)	Mr Kelvin Chan, University of Cambridge
	(BC 56)	Dr Bennett Foddy and Dr Eric Mandelbaum, Oxford University
	(BC 57)	West Midlands NHS Maternal and Early Years Services
	(BC 58)	Association for the Study of Obesity (ASO)
	(BC 59)	Brighton and Hove Food Partnership
	(BC 60)	Claradan and ClaradanMetrics

	(BC 61)	Harpreet Sohal, Health Trainer Services Manager, Solihull
	(BC 62)	Health, Exercise, Nutrition for the Really Young (HENRY)
	(BC 63)	Development Education Association (DEA)
*	(BC 64)	Living Well West Midlands
	(BC 65)	Dr Rhys Jones, Dr Jessica Pykett and Dr Mark Whitehead, Aberystwyth University
	(BC 66)	Professor Thomas Baldwin, University of York
	(BC 67)	University of Aberdeen, Institute of Applied Sciences
	(BC 68)	Dr Benjamin Gardner and Dr Phillippa Lally, University College London
	(BC 69)	Sandy Evans, ProHealthClinical
	(BC 70)	Keep Britain Tidy
	(BC 71)	Switchover Help Scheme
*	(BC 72)	Professor Robert West and Professor Susan Michie, University College London
	(BC 73)	Food and Drink Federation (FDF)
	(BC 74)	Rights to Warmth
	(BC 75)	Nuffield Council on Bioethics
*	(BC 76)	Central Office of Information (COI)
	(BC 77)	British Trust for Conservation Volunteers (BTCV)
	(BC 78)	British Academy
	(BC 79)	Leeds Metropolitan University, Centre for Food Nutrition and Health
	(BC 80)	West Midlands NHS Maternal and Early Years Project
	(BC 81)	Wine and Spirit Trade Association
	(BC 82)	Action on Smoking and Health
*	(BC 83)	Sustainable Development Commission (SDC)
	(BC 84)	National Trust and we will if you will
*	(BC 85)	Central YMCA
	(BC 86)	Mr Andrew Darnton, AD Research & Analysis Ltd
	(BC 87)	Health and Safety Laboratory (HSL)
	(BC 88)	WRAP (the Waste & Resources Action Programme)
	(BC 89)	The Campaign Company (TCC)
	(BC 90)	NHS Leeds
	(BC 91)	International Association for the Study of Obesity (IASO)
	(BC 92)	Astarte Programme
	(BC 93)	Dr John Coggon LLB, PhD, University of Manchester

*	(BC 94)	MEND Central
	(BC 95)	Matrix Evidence
*	(BC 96)	Professor Imran Rasul and Myra Mohnen, University College London
	(BC 97)	Harald Schmidt, London School of Economics
*	(BC 98)	Drinkaware
	(BC 99)	Ajinomoto
	(BC 100)	Institute for Government
*	(BC 101)	Institute for Practitioners in Advertising (IPA)
	(BC 102)	Advertising Association
	(BC 103)	Professor Paul Dolan, Dr Dominic King, Dr Robert Metcalfe, Dr Ivo Vlaev, Imperial College London
	(BC 104)	HERD Consulting, Mark Earls and Dr Alex Bentley, Durham University
	(BC 105)	British Psychological Society
	(BC 106)	Mark Watson, Bikesh Dongol, Mathew Calcasola, Sally Simpson, Oscar Nolan, Hany Hashesh, 4th Year Medical Students, University of Leicester
	(BC 107)	The Green Alliance
*	(BC 108)	Research Councils UK (RCUK)
	(BC 109)	Professor Alan Maynard, University of York
*	(BC 110)	Professor Theresa Marteau and Laura Haynes, King's College London
*	(BC 111)	Swanswell
	(BC 112)	Andrew Dapaah, Tinashe Chirenje, Ann Paraiso, Vivienne Richards, Lucy Reynolds and Kazira von Selmont, Leicester University Medical Students
	(BC 113)	Dr Mike Esbester, Oxford Brookes University
*	(BC 114)	Government (joint departmental submission)
*	(BC 115)	Diageo
*	(BC 116)	Stagecoach Group plc
	(BC 117)	Professor John Urry, Lancaster University
*	(BC 118)	National Institute for Health and Clinical Excellence (NICE) (supplementary)
*	(BC 119)	Professor David Banister, University of Oxford
	(BC 120)	Mr Donald Bowler
*	(BC 121)	RAC Foundation
	(BC 122)	Dr David Metz, visiting professor, Centre for Transport Studies, University College London, formerly Chief Scientist, Department for Transport

	(BC 123)	Professor Colin Pooley, Dr David Horton, Dr Griet Scheldeman, Lancaster University
	(BC 124)	Professor Roger Mackett, University College London
*	(BC 125)	Professor Peter Bonsall, University of Leeds
	(BC 126)	Dr Alan Lewis MA, PhD: Director, Transport & Travel Research Ltd and Mr John Porter MSc: Director, Interactions Ltd
*	(BC 127)	Transport for Quality of Life
	(BC 128)	Living Streets
	(BC 129)	Greener Journeys'
	(BC 130)	Cyclists' Touring Club (CTC)
*	(BC 131)	Cycling England
*	(BC 132)	Research Councils UK (RCUK) (supplementary)
*	(BC 133)	Professor Phil Goodwin, University of the West of England
	(BC 134)	British Academy (supplementary)
*	(BC 135)	ESRC Centre for Business Relationships, Accountability, Sustainability and Society (BRASS) and the School of City and Regional Planning, Cardiff University (supplementary)
	(BC 136)	Tavistock Institute of Human Relations
	(BC 137)	Centro
*	(BC 138)	Department for Transport (DfT)
	(BC 139)	UKCRC Centre for Diet and Activity Research (CEDAR) and the Behaviour and Health Research Unit (BHRU), Institute of Public Health, University of Cambridge
	(BC 140)	Professor Kevin Anderson, Mr Dan Calverley and Dr Alice Bows, University of Manchester
*	(BC 141)	Sustrans (supplementary)
	(BC 142)	Mr Eric Britton, New Mobility Agenda and World Streets
	(BC 143)	Cycle to Work Alliance
	(BC 144)	Home Office
	(BC 145)	Friends of the Earth and Campaign for Better Transport
	(BC 146)	Royal Academy of Engineering
*	(BC 147)	Professor Robert West and Professor Susan Michie, University College London (supplementary)
*	(BC 148)	Professor Ray Pawson, University of Leeds (supplementary)
*	(BC 149)	UK Centre for Tobacco Control Studies (supplementary)

*	(BC 150)	Professor Lyndal Bond, Programme Leader of the MRC Programme: "Evaluating the Health Effects of Social Interventions" (supplementary)
*	(BC 151)	Department of Health (DH) (supplementary)
	(BC 152)	Peterborough City Council
*	(BC 153)	Professor Elizabeth Shove, Lancaster University (supplementary)
*	(BC 154)	Drinkaware (supplementary)
*	(BC 155)	Professor Peter Bonsall, University of Leeds (supplementary)
*	(BC 156)	Institute for Practitioners in Advertising (IPA) (supplementary)
*	(BC 157)	Mr Justin King, Group Chief Executive, Sainsbury's (supplementary)
*	(BC 158)	Mr Paul Kelly, External Affairs and Corporate responsibility Director, Asda (supplementary)
*	(BC 159)	Fitness Industry Association (supplementary)
*	(BC 160)	Transport for Quality of Life (supplementary)
*	(BC 161)	Department of Health (further supplementary)
*	(BC 162)	Oliver Letwin MP, Minister of State, Cabinet Office (supplementary)
*	(BC 163)	Cycling England (supplementary)
*	(BC 164)	Dr Steve Skippon, Shell Global Solutions (supplementary)

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Action on Smoking and Health (BC 82)

Advertising Association (BC 102)

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** Dr Jillian Anabel, University of Aberdeen

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Association for the Study of Obesity (ASO) (BC 58)

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** Dr Frank Atherton, President of the Association of Public Health Directors

Professor Thomas Baldwin, University of York (BC 66)

* Professor David Banister, University of Oxford (BC 119)

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Dr Alison Bish and Professor Susan Michie, University College London (BC 29)

** Dr Peter Blake, Head of Integrated Transport, Worcestershire Council

* Professor Lyndal Bond, Programme Leader of the MRC Programme: "Evaluating the Health Effects of Social Interventions" (BC 150)

* Professor Peter Bonsall, University of Leeds (BC 125, 155)

Mr Donald Bowler (BC 120)

* ESRC Centre for Business Relationships, Accountability, Sustainability and Society (BRASS) (BC 46)

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* British Medical Association (BMA) (BC 53)

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** Dr Tim Chatterton, University of the West of England, Bristol

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** Professor Lindsey Davies, President, UK Faculty of Public Health

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* Diageo (BC 115)

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* Drinkaware (BC 98, 154)

** Mr Tim Duffy, Chief Executive, M&C Saatchi

Dr Mike Esbester, Oxford Brookes University (BC 113)

Sandy Evans, ProHealthClinical (BC 69)

** Dr Wendy Ewart, Director of Strategy, Medical Research Council

* Fitness Industry Association (BC 159)

Dr Bennett Foddy and Dr Eric Mandelbaum, Oxford University (BC 56)

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Dr Benjamin Gardner and Dr Phillippa Lally, University College London (BC 68)

* Dr Benjamin Gardner, Professor Susan Michie, University College London and Professor Nichola Rumsey, University of the West of England (BC 43)

Gateway Family Services (BC 12)

Global Action Plan (BC 51)

* Professor Phil Goodwin, University of the West of England (BC 133)

* Government Economics Service (GES) and the Government Social Research Service (GSR) (BC 24)

* Government (BC 114) (joint departmental submission)

* Great Yarmouth Community Trust (BC 32)

The Green Alliance (BC 107)

Greener Journeys' (BC 129)

Professor Frances Griffiths, University of Warwick (BC 34)

** Professor David Gunnell, University of Bristol

Halton and St Helens—NHS Health Improvement Team (BC 26)

** Mr Tony Hawkhead, Chief Executive, Groundwork

Health and Safety Laboratory (HSL) (BC 87)

Health and Well-Being Alliance (BC 4)

Health, Exercise, Nutrition for the Really Young (HENRY) (BC 62)

HERD Consulting, Mark Earls and Dr Alex Bentley, Durham University (BC 104)

** Dr Melvyn Hillsdon, University of Exeter

Home Office (BC 144)

** Mr Simon Houldsworth, Transport Policy Manager, Darlington Council

Institute for Government (BC 100)

* Institute for Practitioners in Advertising (IPA) (BC 101, 156)

Interaction (BC 40)

International Association for the Study of Obesity (IASO) (BC 91)

** Dr Susan Jebb, Head of Nutrition and Research, Medical Research Council, and Chair, Cross-Government Expert Advisory Group on Obesity and the Responsibility Deal Food Network

Professor Peter John, University of Manchester (BC 8)

Dr Rhys Jones, Dr Jessica Pykett and Dr Mark Whitehead, Aberystwyth University (BC 65)

Keep Britain Tidy (BC 70)

* Mr Paul Kelly, External Affairs and Corporate responsibility Director, Asda (BC 158)

** Ms Katherine Kerswell, Group Managing Director of Kent County Council, and former president of the Society of Local Authority Chief Executives (SOLACE)

* Mr Justin King, Group Chief Executive, Sainsbury's (BC 157)

Mr Robert Langford, Telford and Wrekin Community Health Services (BC 35)

Leeds Metropolitan University, Centre for Food Nutrition and Health (BC 79)

Carolyn Lester, Public Health Wales (BC 10)

* Oliver Letwin MP, Minister of State, Cabinet Office (BC 162)

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Lifestyle service, South Staffordshire PCT (BC 20)

LighterLife (BC 50)

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* Living Well West Midlands (BC 64)

Dr Karen Lucas, Transport Studies Unit, University of Oxford (BC 11)

Professor Roger Mackett, University College London (BC 124)

Professor Gregory Maio, Professor Geoff Haddock, Cardiff University and Dr Katy Tapper, Swansea University (BC 2)

* Professor Theresa Marteau and Laura Haynes, King's College London (BC 110)

** Mr Nick Mason, Chair of the Growing Against Gangs Foundation

Matrix Evidence (BC 95)

Dr Peter Mathews, Pedagogic Consultant (BC 14)

Max-Planck Institute for Evolutionary Biology (BC 7)

Professor Alan Maynard, University of York (BC 109)

* MEND Central (BC 94)

Dr David Metz, visiting professor, Centre for Transport Studies, University College London, formerly Chief Scientist, Department for Transport (BC 122)

* Professor Erik Millstone, SPRU, University of Sussex (BC 28)

* National Institute for Health and Clinical Excellence (NICE) (BC 52, 118)

National Obesity Observatory (NOO) (BC 42)

National Social Marketing Centre (BC 5)

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Nuffield Council on Bioethics (BC 75)

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* Professor Ray Pawson, University of Leeds (BC 6, 148)

Peterborough City Council (BC 152)

Plunkett Foundation (BC 41)

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* RAC Foundation (BC 121)

* Professor Imran Rasul and Myra Mohnen, University College London (BC 96)

* Research Councils UK (RCUK) (BC 108, 132)

Rights to Warmth (BC 74)

Royal Academy of Engineering (BC 146)

Professor Mary Rudolf, Leeds General Infirmary (BC 37)

Harald Schmidt, London School of Economics (BC 97)

* Professor Elizabeth Shove, Lancaster University (BC 45, 153)

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Harpreet Sohal, Health Trainer Services Manager, Solihull (BC 61)

* Stagecoach Group plc (BC 116)

* Sustainable Development Commission (SDC) (BC 83)

* Sustrans (BC 1, 141)

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Tavistock Institute of Human Relations (BC 136)

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University of Bath, Faculties of Humanities and Social Sciences (BC 54)

Professor John Urry, Lancaster University (BC 117)

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* Weight Watchers UK (BC 30)

Wellcome Trust (BC 38)

West Midlands NHS Maternal and Early Years Project (BC 80)

West Midlands NHS Maternal and Early Years Services (BC 57)

* Professor Robert West and Professor Susan Michie, University College London (BC 72, 147)

Wine and Spirit Trade Association (BC 81)

Workplace Cycle Challenge (BC 21)

WRAP (the Waste & Resources Action Programme) (BC 88)

** Dr Richard Wright, Director of Sensation, Perception and Behaviour, Unilever

* Yorkshire and Humber Health Trainer Team (BC 25)

APPENDIX 3: CALLS FOR EVIDENCE

The House of Lords Science and Technology Select Committee has appointed a sub-committee, chaired by Baroness Neuberger, to investigate the use of behaviour change interventions to achieve policy goals.

Introduction

To meet many of the societal challenges we are currently facing—such as achieving an 80% reduction in carbon emissions by 2050 or reducing the burden on the health service as a result of smoking, drinking or the rise in obesity—individual and collective behaviour will need to change significantly. Governments, therefore, are becoming increasingly interested in understanding how they can influence the way we behave using a range of different types of behaviour change policy interventions that rely on measures other than prohibition or the elimination of choice. Recent reports, such as the Cabinet Office issue paper *Personal Responsibility and Behaviour Change* (2003), the Government Social Research Unit's *Behaviour Change Knowledge Review* (2008) and the Cabinet Office and Institute for Government report *MINDSPACE: Influencing behaviour through public policy* (2010), are indicative of this growing interest.

The subject is complex. Choosing a behaviour change intervention or a mix of interventions to achieve particular policy goals in particular contexts draws on understanding developed in a large variety of research disciplines, including health psychology, social psychology, behavioural economics, neuroscience and sociology. The insights provided by the development and application of social marketing techniques also make a valuable contribution.

Some behaviour change interventions are recognised as having been very successful. A recent review of more than 1,000 evaluations of health behaviour change interventions has shown that theory- and evidence-based behaviour change interventions can be effective across a range of behaviour change domains. In relation to smoking, for example, the simultaneous application of a number of different types of interventions, including a ban on smoking in public, marketing campaigns to highlight the dangers of smoking and improved and better advertised smoking cessation services within the National health Service is said to have led to a significant reduction in the number of smokers over the last few years. Other interventions, such as efforts to reduce alcohol misuse, have been less successful. We shall be examining, amongst other things, what appears to make one intervention more effective than another.

Scope of the inquiry

The inquiry will examine our current state of knowledge about what interventions can effectively influence behaviour, how behaviour change interventions which have been designed on the basis of that knowledge can be used to achieve policy goals, and what factors should be taken into account by government in determining whether a particular behaviour change intervention is appropriate. It will look at the evidence-base that supports current behaviour change interventions and at the effectiveness of those interventions.

In particular, the inquiry seeks to examine:

- the policy implications of recent developments in research on behaviour change;

- whether current government behaviour change interventions are evidence-based, whether such interventions are appropriately evaluated, and if lessons have been learnt from the process and then applied to further interventions;
- whether there is sufficient expertise within public services (for example, local authorities and the NHS) to ensure that interventions are evidence-based, and implemented and evaluated effectively;
- the extent to which behaviour change interventions require a mixture of different tools to succeed;
- how behaviour change interventions and activities are coordinated across government and beyond;
- the extent to which, and ways in which, government should be accountable to, or engage with, the wider public about the use of behaviour change policy interventions;
- the role of industry and the voluntary sector in shaping behaviour patterns;
- the relationship between government, industry and the voluntary sector in promoting behaviour change to achieve policy goals; finally,
- the social and ethical issues surrounding the use of behaviour change interventions by government.

Case study 1: Tackling obesity

The Committee will conduct two case studies as part of the wider inquiry. The first case study will look at the use of behaviour change policy interventions to tackle obesity. Obesity remains a major challenge for society. In 2008, almost a quarter of adults in England were classified as obese; and 16.8% of boys aged 2 to 15 and 15.2% of girls were also classified as obese, an increase from 11.1% and 12.2% respectively in 1995.[343]

A 2007 Foresight report on obesity, *Tackling Obesities: Future Choices*, called for a systems approach to behaviour change interventions to tackle obesity and, in 2008, the Government launched *Healthy weight: healthy lives*, a cross-government strategy for England which introduced a number of interventions. Nonetheless, prevalence rates amongst some childhood and adolescent groups and adults continue to rise. These trends predict worsening public health, increased pressure on the health service and a very large cost to the national economy.

Questions

Research and Development

1. What is known about how behaviour can be influenced? What special considerations apply to addictive behaviour?

2. What are the policy implications of recent developments in research on behaviour change?

[343] *Statistics on obesity, physical activity and diet: England 2010*, The Information Centre for Health and Social Care, NHS.

3. Is there adequate research capability within the United Kingdom to support the current pace of developments in behaviour change policy interventions? Is there sufficient funding for the evaluation of behaviour change interventions?

Translation

4. Are there adequate structures and expertise across government and the public services more generally to support the translation of research developments in behaviour change into policy interventions?

Policy design and evaluation

General

5. What should be classified as a behaviour change intervention?

6. How should different levels of intervention (individual, organisational, community and national) and different types of intervention (legislative, fiscal, educative) interact in order to achieve policy goals more effectively?

7. Should behaviour change interventions be used in isolation or in combination with other policy interventions?

Practical application

8. Have publicly funded behaviour change interventions been both evidence-based and subject to effective evaluation? How successful have such interventions been?

9. Within government, how are the lessons learnt from the success or lack of success of behaviour change interventions fed back into the design of future interventions? Are lessons learned from industry and voluntary sector behaviour change activities also taken into account?

10. What mechanisms exist, at national and local government level, to provide advice and support during the design, piloting, implementation and evaluation of behaviour change interventions in order to ensure that they achieve intended policy goals and also cultural changes within government and public services more generally?

Cross-government coordination

11. What mechanisms exist within government to coordinate and implement cross-departmental behaviour change policy interventions?

12. What mechanisms exist within government to cascade learning and best practice on behaviour change policy interventions?

Ethical considerations

13. When is it appropriate for the state to intervene to influence the behaviour of members of the public and how does this differ from when it is appropriate for the commercial or voluntary sector to intervene? In particular, when should this be done by outright prohibition and when by measures to encourage behaviour change? Are some methods of producing behaviour change unacceptable? Which and why?

14. Should the public be involved in the design and implementation of behaviour change policy interventions and, if so, how? Should proposed measures for

securing behaviour change be subject to public engagement exercises or consultation? Should they be piloted? Do considerations differ in the case of interventions aimed at changing addictive behaviour?

International comparisons

15. What lessons can be learnt from previous successful or unsuccessful behaviour change interventions in other countries? Which countries provide the most helpful examples of best practice? Are behavioural change interventions generally transferable between different societies?

Tackling Obesity

16. The Committee would particularly welcome submissions on behaviour change interventions, whether in the public sector, the private sector or by voluntary organisations, designed to tackle obesity, in the United Kingdom or internationally, in order to examine:

(a) the latest developments in the evidence-base in relation to changing eating and physical activity behaviour;

(b) who are the most effective agents for the delivery of behaviour interventions to tackle obesity;

(c) how current behaviour change interventions tackle obesity and what use is made of available scientific evidence;

(d) whether such interventions are appropriately designed and evaluated; and

(e) what lessons have been learnt and applied as a result of the evaluation process.

The Committee would also be interested to hear about any other issues not already covered by this call for evidence that are relevant to the scope of the inquiry.

Case study 2: Travel-Mode choice interventions to reduce car use in towns and cities

Greenhouse gas emissions from transport represent 21% of the total United Kingdom domestic emissions. Emissions from private car use constitute 78% of that figure, representing 17% of total emissions or 91.5 million tonnes of CO_2 in 2008. Although technological measures are important in reducing emissions and may be effective in the long-term they are not sufficient to achieve the necessary reduction in carbon emissions in the short-term. Getting individuals to reduce the amount that they use their cars is necessary if the UK's carbon reduction targets are to be met successfully.

Behaviour change interventions to encourage people to travel more sustainably have become an integral part of transport policies in recent years, featuring in the previous Government's *Low Carbon Transport Strategy* of 2009. To date, however, such interventions do not appear to have led to a major change in transport mode choice, or a significant reduction in CO_2 emissions from transport.

The Committee invites evidence on the following questions

Questions

17. The Committee would welcome submissions on behaviour change interventions, whether in the public sector, the private sector or by voluntary organisations, designed to change travel-mode choice in order to reduce car use in towns and cities, in the United Kingdom or internationally, in order to examine:

(a) what are the most influential drivers of behaviour affecting an individual's choice of mode of travel;

(b) what is the role of infrastructure in encouraging and facilitating changes in travel-mode choice;

(c) what are the latest developments in the evidence-base in relation to changing travel-mode choice and the implications of those developments for policy;

(d) what are the most appropriate type and level of interventions to change travel-mode choice;

(e) who are the most effective agents for the delivery of behaviour interventions to change travel-mode choice;

(f) how do current behaviour change interventions seek to change travel-mode choice and what use is made of available scientific evidence;

(g) are current policy interventions addressing both psychological and environmental barriers to change;

(h) are policy interventions appropriately designed and evaluated;

(i) what lessons have been learnt and applied as a result of the evaluation of policy; and

(j) what lessons can be learnt from interventions employed in other countries.

The Committee would also be interested to receive evidence on the broader scope and questions outlined in the first call for evidence, where it is of relevance to this case study.

APPENDIX 4: SEMINAR ON BEHAVIOUR CHANGE INTERVENTIONS TO PREVENT AND TACKLE OBESITY HELD AT THE HOUSE OF LORDS

19 October 2010

Members of the Sub-Committee present were Lord Alderdice, Lord Crickhowell, Baroness Hilton of Eggardon, Lord Krebs, Baroness Neuberger (Chairman), Baroness O'Neill of Bengarve, Lord Patel, Baroness Perry of Southwark, the Earl of Selborne and Lord Warner. In attendance were Daisy Ricketts (Clerk) and Rachel Newton (Policy analyst).

The speakers were: Richard Cienciala (Obesity Team, Department of Health); Professor Ken Fox (Centre for Exercise, Nutrition and Health Sciences, University of Bristol); Dr Susan Jebb (Chair of the Cross Government Expert Advisory Group on Obesity and Head of Population Nutrition and Health, Medical Research Council Human Nutrition Research); Professor Mike Kelly (Director, Public Health Excellence Centre, National Institute for Clinical Excellence); Professor Susan Michie (Professor of Health Psychology, University College London).

Other participants were: Dr Mike Rayner (Director of the University of Oxford's Public Health and Primary Health Care Division); Dr Julie Waumsley (Chair of the Obesity Working Group, British Psychological Society).

An introduction to the causes of obesity and the role of behaviour change interventions to prevent and tackle obesity (Dr Susan Jebb)

Dr Jebb outlined the changes in the prevalence of obesity among children and adults since 1993; the rate of obesity had continued to increase in adults but had slowed and arguably begun to plateau in children. A number of serious health risks had been shown to arise from obesity.

The factors which cause obesity were numerous and interlinking; some related to the individual directly, and some arose from the environment. Physical activity and levels of food consumption were argued to be the two most important factors in causing obesity but were in part determined by biological factors and also impacted by an individual's psychology and environmental factors.

Evidence about treating obesity through individual level behaviour change interventions had been shown to be strong. Effective treatment options for obesity included bariatric surgery, pharmacotherapy, or diet and exercise interventions. Key elements of successful interventions included awareness and motivation to change, realistic goal-setting, confidence to succeed, improved dietary habits, increased physical activity and self-monitoring of behaviours. The major challenge however was to move beyond individual level interventions and drive behaviour change on a public health scale.

In relation to preventing obesity, there had been few examples of controlled interventions with detailed evaluation, and few were successful in attenuating weight gain. There was greater evidence about how to influence positively diet and activity behaviours but little data on the sustainability or cost-effectiveness of these interventions. Better evaluation of public health interventions was identified as a key area for improvement.

The theoretical base for obesity prevention suggested that changing dietary behaviour required initiatives to make products and the environment healthier alongside initiatives to change people's attitudes and motivation.

The Nuffield Ladder set out the range of public health interventions in increasing order of intrusiveness.[344] Specific evidence about effectiveness was lacking in relation to incentives and disincentives, including marketing practices.

An introduction to the National Institute for Clinical Excellence guidance on behaviour change and obesity (Professor Mike Kelly)

Professor Kelly summarised the key difficulties faced in creating the National Institute for health and Clinical Excellence's (NICE) obesity and behaviour change guidance. Causal relations between interventions and their outcome were distal, and trying to show cause and effect from complex interventions in complex settings was difficult. Data about interventions was compromised as a result of poor planning of the interventions and the lack of specificity about intended outcomes. Behavioural models were selectively applied without reference to the evidence, and causal links between interventions and outcomes were often not articulated. There was confusion about the level at which interventions and outcomes operated, and an absence of systematic evaluation of interventions.

The guidance noted that an intervention plan should be developed on knowledge of the target audience and take account of the socioeconomic and cultural context. The plan should be as specific as possible about the content of the behaviour to be changed and clarify which underlying theories made explicit the causal links between actions and outcomes.

Training should focus on generic competencies, such as critical evaluation of the evidence and the use of clear outcome measures. At an individual level people should be helped to develop accurate knowledge about the health consequences of their behaviour in order promote positive feelings toward the outcome of behaviour change. Interventions should enhance people's belief in their ability to change, help them to form plans and goals for changing behaviour over time, and enable them to develop skills to cope with difficult situations and conflicting goals. Social approval was an important element of successful interventions. Population level interventions should be consistent with those delivered to individuals and communities.

Better evaluation was an important part of the guidance. Where possible, the effectiveness, acceptability, feasibility, equity and safety of interventions should be evaluated using appropriate outcome measures. Funding applications and project plans for new interventions should include specific provision for their evaluation and monitoring.

Changing behaviour in relation to obesity: eating and physical activity (Professor Susan Michie)

Professor Michie outlined the factors which needed to be understood before behaviour could be successfully changed: the context, the nature of the behaviour, the range of interventions available, evidence-based techniques, and the identity of those who need to take action.

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[344] *Public health: ethical issues*, Nuffield Council on Bioethics (2007)

Behaviour change had been shown to require simultaneous and consistent intervention at the individual, community and population level. Behaviour resulted from interactions between a person's psychological and physical capability, motivation, and physical and social opportunities. Interventions should address all three of these factors: capability, motivation and opportunity. Motivation encompassed the reflective (deliberative, systematic decision-making) and the automatic (emotion and habit-based) systems.

Arguably current Government proposals emphasised personal responsibility and choice over state regulation of commercial interests. This was based on the premise that behaviours that led to obesity were the result of the reflective rather than the automatic system, and underplayed the role of context, stimulus and emotion in driving people's behaviour. It was argued that this approach did not acknowledge the role of industry in influencing the automatic drivers of food consumption by a variety of subtle persuasive techniques. It was argued that, given the serious harm caused by obesity, the Government had a responsibility to counteract the methods of behavioural control employed by industry.

Evidence from systematic reviews and randomised controlled trials from a range of population groups, showed that weight loss was consistently associated with behaviour change techniques of self-monitoring, goal-setting and review, action planning, information provision, barrier identification and relapse prevention. The NHS Health Trainers Programme was identified as an example of an effective intervention which was based on good evidence. The programme was delivered by trained behaviour change specialists

Discussion

The role of the food industry in causing obesity, and the extent to which they would help tackle the problem, was discussed. The reduction in salt levels in food was given as an example of a successful voluntary change by industry. It was argued that encouraging industry to get their profits from healthy products would be a big challenge but that collaboration with industry would be necessary to achieve population level changes in dietary habits.

The need to improve evaluation was then discussed. Those who funded research should not provide money to projects unless evaluation was built in from the beginning. Involving people in evaluation was viewed as key; the Health Trainers programme was a good example of where this had been done well. It was proposed that extrapolating from other fields would make a broader range of evidence available; more studies should be done into the effectiveness of interventions rather than the aetiology of obesity, and there should be a greater focus on using logic to extrapolate conclusions rather than straightforward empiricism. Lessons learnt from unintended consequences of interventions should not be ignored.

It was noted that it could be difficult to learn lessons from interventions in other countries. For example, the government of Finland had done much to change eating and activity behaviour. The population of Finland however was small and homogenous; findings could therefore not easily be transferred to large culturally and individualistic populations, such as the United Kingdom's.

The question of whether genetic factors may have led to a plateau in prevalence of obesity was discussed. Against this conclusion was the fact that there were different levels of plateau in high and low-income groups, and in United Kingdom and the United States. Furthermore, studies have shown that if adults were

exposed to an environment in which they overate, they all gained weight; no individuals were resistant to weight gain.

The extent to which change achieved by programmes at an individual level could be seen to impact the behaviour of a population, in comparison to that achieved by changes to the macro context, was questioned. Road safety was identified as an area in which the changes to the macro environment successfully changed behaviour. Coronary heart diseases were reduced by individual and population level interventions. Interventions at both levels should be used and could be complementary.

Finally, the relationship between reflective cognitive and automatic processes was discussed. Cognition should be seen as important in treating obesity because the decision to eat less must be a conscious one to overcome the biological drive to eat to meet energy needs. It was argued that cognitive processes were less important in preventing obesity; many interventions at an associative non-cognitive, or automatic, level were effective in changing behaviour. The Government should seek to change behaviour at both a cognitive and an automatic level. It was argued that the Government has particular responsibility for the environment in which people make choices; there would be no point motivating somebody to exercise more if there was no safe space for them to do so.

Applications of behaviour change theory to physical activity interventions (Professor Ken Fox)

Professor Fox outlined the background and purpose of exercise psychology. Physical behaviour was closely related to an individual's self-esteem and self-perception; understanding the meaning and value of a behaviour to an individual enabled an understanding of their motivation. Self-perception and self-determination theories provided useful frameworks for strategies for physical activity interventions. The theories should be tailored for different target groups using pre-intervention qualitative research and social marketing principles.

The challenges in applying behaviour change theory to physical activity interventions included developing a menu of strategies derived from several theories; no one theory covered everything. Randomised controlled trials could be difficult to establish and did not always identify which parts of an intervention produce change. In many interventions robust measurement of outcomes was not achieved. A key element of physical activity interventions was the quality of the leader and good training of leaders was essential.

Examples of successfully delivered, evidence-based interventions included a randomised controlled trial to evaluate physical activity as a treatment for depression by the Universities of Bristol and Exeter, and a project to increase physical activity in older people.

Changes to the environment had been very difficult to get funded and had taken a long time to complete. This should however be viewed as a very important element in making it easier for people to increase their levels of physical activity.

An introduction to obesity policy for England (Mr Richard Cienciala)

Mr Cienciala noted that the new public health white paper would be published later in the year (December 2010),[345] and would provide more information on the

[345] *Healthy Lives, Healthy People*, DH (November 2010)

Government's approach; he outlined what was already known about that approach. It would be proposed that a new Public Health Service would be created, which would protect public health spending through ring-fenced budgets and weight allocations toward the most disadvantaged areas. It would be proposed that much action on public health would shift to a local level.

Business would have a key role to play alongside communities and local Government, as they could have a huge influence on people's diets and activity levels. The Government would create a new public health responsibility deal with businesses. A number of networks had already been set up on topics including food, physical activity, alcohol and behaviour change, through which businesses could develop and deliver a set of commitments.

The role of central government would be to lead on initiatives which were best done once and at a national level, such as national campaigns. Central government would also lead cross-Government effort and collaborations with businesses. They would ensure a strong focus on data and evaluation; the Government would continue to draw on expert analysis, NICE guidance and other academic literature, including considering the cost-effectiveness of existing interventions and initiatives. On obesity specifically, thinking in these areas was supported by an Expert Group which considered the strengths and weaknesses of the evidence-base, and emerging evidence for policy implications. The National Obesity Observatory had published a standard evaluation framework to support high quality, consistent evaluation of weight management interventions to increase the evidence-base.

Approaches to obesity were summarised as being likely to reflect four key areas: informing, educating and 'norming' behaviour; creating an enabling environment; supporting the provisions of effective services; and facilitating the sharing of best practice, data and evidence. There would be a strong interest on exploring how the latest in behavioural science could be applied and building on lessons learnt from current initiatives, such as Change4Life, the National Child Measurement Programme, the Convenience Stores Programme and Walk Once a Week.

Discussion

The relationship between public health and public goods was discussed. Reducing obesity should be seen as a public good but was argued to be a matter of health promotion rather than health protection.

The role of businesses was further discussed and scepticism was expressed about the willingness of the food industry to self regulate. The Government had been clear that the responsibility deal networks were an opportunity for businesses to collaborate with Government and make voluntary changes, but if they do not take this opportunity other means of achieving the same end would be considered. It was noted that the Government should be very specific about the changes that they would like industry to make.

The role of the environment in causing obesity was then discussed. Obesity could be considered the logical consequence of the environment; individuals have to make an effort not to be obese. This demonstrated the importance of infrastructure to support healthy behaviours, particularly in relation to physical activity. This was related to the fact that individuals tended to be more motivated to take the easy option; changing the environment could make healthy choices less difficult.

The connection between social norms and self-esteem was noted. An individual's understanding of their self should be understood partly as a reflection of society; where obesity was normal, people would be less motivated to lose weight. People should therefore be educated about the damaging effects of obesity.

The evidence for "nudges" was discussed. Scepticism was expressed about the evidence for "nudges" and the extent to which the concept was promoted for ideological reasons, rather than its practical usefulness. It was noted that piloting and evaluation of nudge techniques was very important to the Government. Nudges were not the only tool available to Government but should be seen as complementary to other approaches.

APPENDIX 5: SEMINAR ON BEHAVIOUR CHANGE AND TRAVEL BEHAVIOUR HELD AT THE HOUSE OF LORDS

26 January 2011

Members of the Sub-Committee present were Baroness Hilton of Eggardon, Lord Krebs, Lord May of Oxford, Baroness Neuberger (Chairman), Baroness O'Neill of Bengarve, Baroness Perry of Southwark and the Earl of Selborne. In attendance were Daisy Ricketts (Clerk) and Rachel Newton (Policy analyst).

The speakers were: Dr Jillian Anable, University of Aberdeen, Centre for Transport Research); Dr Sally Cairns (University College London and Senior Research Fellow of the Transport Research Laboratory); John Dowie (Director of the Regional and Local Transport Directorate, Department for Transport); Dr David Ogilvie (Medical Research Council Epidemiology Unit and UKCRC Centre for Diet and Activity Research, Cambridge); Dr Steve Skippon (Principle Scientist, Shell Global Solutions).

Other participants were: Professor Philip Goodwin (University of the West of England); Ms Carey Newson (Behaviour Change Specialist, Transport for Quality of Life).

An overview of current policies to change travel behaviours to reduce car use (Mr John Dowie)

Mr Dowie noted that available measures for changing travel behaviour included creating modal choices through improvements to public transport services and infrastructure, fiscal and regulatory measures, information provision and marketing. Historically, transport policy had been focused on infrastructure but there had been an increasing recognition that alternative persuasive techniques to change behaviour were also required. He noted that changes to infrastructure were not as effective in isolation as when combined with these sorts of techniques.

Past initiatives with the Department for Transport (DfT) had included small scale demonstration projects but the future policy direction was towards large scale, integrated policy packages. The Sustainable Travel Towns programme was introduced to test the potential of an integrated approach. It ran between 2004 and 2009 and was funded by £10 million of DfT funding together with £5 million of local funding. The towns of Darlington, Peterborough and Worcester were chosen after a competition; the three towns had varying socioeconomic contexts. The towns employed a range of measures, including personal travel planning, public transport information and marketing, travel awareness campaigns, cycling and walking promotions and car clubs. The results across all three towns showed a 9% reduction in car trips; a 10 to 22% increase in bus trips; a 26 to 30% increase in cycle trips; and a 10 to 13% increase in walking trips. The Cycle Demonstration Towns programme was conducted on the same basis; results demonstrated a 27% increase in cycling levels across the participating towns.

The Local Transport White Paper, *Creating Growth, Cutting Carbon*, published in January 2011,[346] placed localism at the heart of the transport agenda. The Paper recognised the need for behavioural change and used the Nuffield Ladder of Interventions to argue that the starting point should not be to restrict choice but to enable and encourage more healthy and sustainable choices. The Local

[346] *Public health: ethical issues*, *op. cit.*

Sustainable Travel Fund would provide £560 million to local authorities over four years to build on the previous successful Sustainable Travel Towns and Cycling Towns programmes.

The DfT was also developing policies on alternatives to travel to help reduce car use. These included promoting information and communications technology to reduce the need for travel and working across the public sector to promote alternatives to travel. Eco driving was also an area of policy interest.

Embedding learning from behavioural science within Government was an important concern. An in-house toolkit had been developed for policy makers in the DfT and knowledge about behaviour change was being shared with local authorities.

Discussion

The results from the Sustainable Travel Towns were discussed further. The percentage increase in cycling was from a low base. The evaluation was completed at a time when the programmes were still running and it was not yet clear whether the improvements would persist. For an investment of only £10 million however it was considered by some to be a successful programme and to have provided good value for money.

The meaning of the word "nudge", in the context of "nudging not nannying", was discussed. It was suggested that "nudge" ought to be interpreted narrowly to include only soft or light touch measures. It was suggested that ministers faced a dilemma because there was a broadly held view that harder measures were necessary in transport to lock in traffic reduction. Nudges would not be sufficient alone but needed to form part of a package of interventions. It was argued that the Sustainable Travel Towns demonstration showed that light touch interventions targeted to individuals were complementary to infrastructure changes.

The discrepancies between the levels of car use in the United Kingdom and in Continental Europe were discussed. Different levels of investment in interventions were identified as a key reason for this.

The role of behaviour change in delivering emissions reductions (Dr Steve Skippon)

Dr Skippon argued that the effects of carbon emissions were cumulative and that even modest delays in reducing emissions would result in a much higher likelihood of a global temperature rise. The projected trend across Europe was continued growth in light duty (cars, vans and motorbikes) kilometres travelled. Shell's transport emissions modelling suggested that, for the EU light duty sector, the best achievable reduction in carbon emissions as a result of technology alone could mean that by 2050 annual emissions would be reduced by 80%. However such reductions would not happen quickly enough to limit the accumulation of carbon in the atmosphere and so global temperature rises. Changes to travel behaviour would therefore be necessary in addition to technology change because they could be implemented early and so have an impact on cumulative emissions.

A number of ways in which to change behaviour to reduce emissions from car use were identified, including a reduction in journeys undertaken, travel mode choice, downsizing of vehicles, and adoption of fuel-efficient driving styles. Modelling showed that the changes in behaviour that could be achieved through voluntary measures, such as public awareness and information campaigns and travel planning, would have some impact on cumulative emissions, but not enough. Changes could also be brought about by strong measures, including measures to

encourage modal shift like parking restrictions, and higher taxes on larger vehicles. Modelling suggested that these strong measures would be more effective in limiting cumulative emissions than the voluntary measures. Behaviour change would not be sufficient in isolation however. The full range of technological options would also be required if transport's contribution to global targets was to be approached.

Dr Skippon provided examples of the potential impact of behaviour change interventions in the road transport sector in the United States. He stressed that it was hard to translate conclusions from interventions in the United States, as the opportunities for behaviour change were very different there. For example, many more people drove large cars and so vehicle downsizing could have more of an impact than in Europe.

An introduction to the factors that influence travel behaviours and the possible mechanisms and interventions to affect those behaviours (Dr Jillian Anable)

Dr Anable noted that the separation of behaviour and technology was not a useful polarisation. Travel behaviour was not just about mode choice but encompassed the sort of cars that were purchased, how they were driven and how much they were used. Carbon pathways analysis conducted by the DfT showed that distance of trips was an important consideration. Short trips (under 5 miles) accounted for 20% of carbon emission. The Sustainable Travel Towns project demonstrated that the largest proportion of total reduction in car use (in terms of distance driven) came from small changes to the longest trips, although the most significant changes in behaviour as a result of the programme was seen in short trips.

Recent studies suggested that car use had peaked and that the downward trend in the uptake of sustainable travel modes was starting to reverse. There was also a drop in the number of people who held a driving licence. The reasons for these patterns were not known, although it was noted that a recent survey by the RAC identified changing attitudes toward travel.

Behaviour change was identified as a two way process, which was more flexible and volatile than was usually understood: some people gave up driving and started to use public transport, and others stopped using transport and started to drive on a continuous basis. Each decision-making process needed to be targeted differently to achieve net movement in a sustainable direction.

There had been examples of successful behaviour change, including the Sustainable Travel Towns project, the London congestion charge, pedestrianisation and public transport investment. Behaviour change was shown to result from a combination of many different determinants, encompassing factors subjective and objective to the individual, and subjective and objective to the collective.

Interventions had traditionally been classified either as structural, or collective and motivational. Examples of structural interventions included fiscal measures, provisions of alternative modes of transport, regulatory interventions and land use planning. Examples of collective and motivational interventions included information provision and social marketing. All of these interventions should be considered to be behavioural.

Dr Anable explained the language of "smarter choices" which was used often in relation to travel interventions. It was commonly understood to include psychological techniques to influence behaviour through engaging with individuals, rather than infrastructure. Some of the policy lessons that had been

learnt through the use of smarter choices, including in the Sustainable Travel Towns programme, were: behaviour change was greater where service improvements were combined with marketing and promotion; marketing and information was rarely sufficient on its own; medium length and commuter trips offered the best opportunity in terms of car mileage savings; local context and partnerships were important; behaviour change needed to be locked-in to prevent rebound; and individual behaviour changes would be diluted by a lack of regional and national policy consistency.

The strengths of the evidence-base were identified as case studies, behavioural and psychological studies and econometric studies. The weaknesses were longitudinal studies, controlled design, action research, and understanding social practices and interpersonal influences.

Optimism about technology and pessimism about behaviour amongst policy makers was not based on good evidence. Policymakers were not using the evidence when they focused on the individual and the rational and when they emphasised the evaluation of the impacts of separate policy instruments.

Discussion

The availability of systematic reviews of the evidence about how to reduce car use was discussed. It was suggested that there was a large volume of material but few high quality methodological studies, such as randomised controlled trials. The necessity of randomised controlled trials was discussed. Some suggested that, while it is not always possible to use them, wherever possible controlled trials or other high quality methodologies should be employed. It was noted that it was not always appropriate to attempt to evaluate the different components of packages of interventions separately, since a range of measures was often necessary in order for any change in behaviour to be achieved.

The financial cost of car use was discussed. Perceived cost was considered to be more important than actual cost, and initiatives to shift the cost of car use so that it was less fixed and more directly correlated to distance travelled were discussed. It was noted that such initiatives would be difficult to introduce and that the losses to certain groups would be large.

The potential proportion of achievable change was discussed. Some suggested that change could only be sought on the margins, in around 5% of the population. Others disagreed, arguing that there was potential to change the behaviour of 30% of the population over a period of two to five years.

The impact of age on travel behaviour was discussed. It was noted that there was a real decline in car use amongst the elderly and young adults. Amongst the elderly, responses to stopping using cars varied widely depending on their expectations and capabilities. Young urban professionals were identified as a group who tended not to use cars, and this was considered to be a new trend. There was a high proportion of cycling among this group, particularly in London. Bicycle brands were becoming more expensive, which suggested that some people saw a bike as a status symbol in the same way that many people saw cars. It was not clear however how the behaviour of young urban professionals would change as they grew older.

An overview of the challenges of conducting effective evaluations for interventions designed to change travel behaviours (Dr Sally Cairns)

Dr Cairns outlined the key questions for an evaluation to consider: what has happened to travel behaviour; why have the changes occurred and to what extent

can they be attributed to the interventions; and, what are the wider implications of those changes. The example of the Sustainable Travel Towns programme was used to illustrate this.

Evaluating what happened in the Sustainable Travel Towns was achieved by comparing data from the towns with national trends. Town data included household travel surveys, surveys in schools and workplaces, and counts of vehicles, cyclists, pedestrians and bus passengers. National data used included the National Travel Survey (specific data for medium sized urban areas) and the National Road Estimates (urban roads data). The value of triangulation of data sources was emphasized.

The evaluation of why changes occurred in the Sustainable Travel Towns was informed by in-depth interviews with those delivering initiatives, local authority officials, bus companies, those responsible for data collection and other relevant organisations. Contextual data was also gathered on the towns, such as population changes and levels of employment in order to understand what else might have caused change. Some of this information in relation to bus use in Worcester was demonstrated in graphical form; the graph showed the changes in bus patronage relative to the implementation of different initiatives. It was noted that change had been achieved through a combination of improvements in services, discounted fares and promotional campaigns, and it was not possible to assess the effect that any one of those measures would have had in isolation. It was noted that no long term follow-up was being conducted in the Sustainable Travel Towns following the initial evaluation, but that this could be insightful.

The key lessons identified for future evaluation were that good practice usually included controls or benchmarking; triangulation of data sources; and understanding not only what had happened but the context in which it had happened. Full evaluation could give invaluable results but was likely to be complex, time consuming, expensive and not a precise science.

Travel behaviour interventions from a public health perspective (Dr David Ogilvie)

Dr Ogilvie provided an overview of the evidence for travel behaviour interventions from a public health perspective. It was often unrealistic to expect to be able to test the whole causal chain, from intervention to ultimate health improvement, within a single study. The benefits of physical activity for health were clearly established; the greater current challenge was evaluating the impact of interventions to change travel behaviour on overall levels of physical activity.

Outcome measures for travel behaviour and physical activity were not synonymous. Questionnaires were widely used for estimating physical activity and energy expenditure from the time or distance travelled, but the precision of these estimates could be improved by measuring behaviour more objectively using devices such as accelerometers, heart-rate monitors and Global Positioning System receivers.

It was suggested that randomised controlled trials could be applied to some interventions but not all. They were underused in travel interventions; personalised travel planning provided a good opportunity for controlled trials but they had not been used. Sometimes a ‘natural experiment’ approach was more appropriate, particularly for interventions such as charging schemes and infrastructure changes. The Medical Research Council was developing guidance on the evaluation of natural experimental studies.

The 2009 report from the House of Commons Health Committee on health inequalities was cited as providing a list of desirable qualities of a robust evaluation.[347] Among the most important of these was adjustment for the counterfactual; even if there were no external control group, other methods were available for estimating what might have happened without the intervention. Social distribution of effects was also identified as an important measure. Behaviours and their impacts were socially patterned and evaluations should seek to identify which groups in the population had experienced the benefits and harms of a given intervention.

Discussion

The impact of investment in infrastructure was discussed. It was noted that the Sustainable Travel Towns programme cost £10 per person per year. In Copenhagen £40 per person per year was invested in infrastructure and they had far lower rates of car use. It was suggested that investment was related to impact. Following the evaluation of the Sustainable Travel Towns, one estimate suggested an investment of £20 per person per year in "smarter choice" measures was needed. It was noted that road user charging does not cost money but rather creates revenue, though this is only one form of intervention, which may not be effective in isolation.

It was noted that not only do other European countries spend more but that they have been spending more consistently for longer. That had not happened in the United Kingdom; when something had been shown to work, it had often been stopped. It was suggested that there was a danger in comparing the United Kingdom to Europe, as levels of car use in Europe would not be matched quickly. There was considered to be large potential for change in the United Kingdom but change would take time.

[347] Health Committee, 3rd report (2008–09): *Health Inequalities* (HC Paper 286)

APPENDIX 6: ETHICS AND BEHAVIOUR CHANGE SEMINAR HELD AT THE HOUSE OF LORDS

10 February 2011

Members of the Sub-Committee present were Baroness Neuberger (Chairman), Baroness O'Neill of Bengarve, Lord Patel and the Earl of Selborne. In attendance were Daisy Ricketts (Clerk) and Rachel Newton (Policy analyst).

The speakers were: Professor Thomas Baldwin (Department of Philosophy, University of York); Professor Luc Bovens (Department of Philosophy, Logic and Scientific Method, London School of Economics); Professor Theresa Marteau (Professor of Health Psychology, Kings College London).

Other participants were: Professor Richard Ashcroft (School of Law, Queen Mary, University of London); Dr Bennett Foddy (Institute for Science and Ethics, University of Oxford); Dr Jessica Pykett (Institute of Geography and Earth Sciences Aberystwyth University).

An introduction to ethics in policy making (Professor Thomas Baldwin)

Professor Baldwin argued that it was a core value of liberal societies that citizens should be treated as rational agents, capable of taking responsibility for constructing their own lives. He outlined JS Mill's 'harm principle': the only reason that governments can exercise power against the will of an individual is to prevent harm to others. This principle would however limit the role of Government in public health to health protection and health promotion through the provision of advice (except where others might be harmed, as by smoking or failing to take steps to prevent the transmission of infectious or contagious diseases).

Professor Baldwin suggested that the example of obesity demonstrated that the 'harm principle' would not provide an adequate approach for Government intervention. He noted that obesity was not an infectious disease and that, although there had been much advice about healthy eating and exercise, rates of obesity continued to rise. He argued that the rise in obesity had not been caused by a collapse in personal responsibility but rather by changes in physical and social environment (as claimed in the Foresight report).[348] Tackling obesity was nevertheless a matter for Government because of its implications for the health of the population and the financial burden on public funds. Professor Baldwin suggested therefore that Government had a broad responsibility for the welfare of citizens that went beyond protecting them from harm from others. He further noted that the example of obesity highlighted the significance of equality; child obesity was correlated very closely with social deprivation.

The example of obesity linked three core aims for public policy: protecting personal responsibility, dealing with major challenges to public welfare, and promoting equality (at least equality of opportunity for health). The stewardship model proposed by the Nuffield Council on Bioethics (NCOB) illustrated how these values could work together: the Government's role was to act as 'steward' of the public environment in which individuals can exercise responsibility for their own choices. The NCOB proposed, in the light of this, that public policies should be seen as rungs of a ladder, with the bottom rungs representing minimal and less

348 *Tackling obesity: future choices*, *op. cit.*

controversial interventions, and higher rungs representing more intrusive intervention that require stronger justification.[349]

The NCOB recommended that governments should start at the bottom of the ladder and only move to policies higher up the ladder when a lower rung policy was not working; there was reason to think that a higher rung policy would be more effective; and when the goal of the policy was important enough to warrant more intrusive intervention. Professor Baldwin noted that the NCOB ladder had found its way into current Government policy, including the Public Health White Paper *Healthy Lives, Healthy People*.[350] It was used in this White Paper to justify avoiding the regulation of businesses, although the Nuffield Ladder was only intended to apply to policies directed at individuals.[351]

Intervening to change behaviour: factors influencing acceptability to members of the public (Professor Theresa Marteau)

As a psychologist, Professor Marteau outlined how what was known about human behaviour and evidence for the effectiveness of interventions, might bear on the judgments about the ethical acceptability of behaviour change.

Professor Marteau said that behaviour could be explained by dual process models of human behaviour, which distinguished between the reflective system and the impulsive system. The model represented the reflective system as driven by conscious decisions, taking into account considerations of the future and requiring a high cognitive capacity. It represented the impulsive system as driven by immediate perceptual input, giving no consideration to the future, operating quickly and requiring little or no conscious cognitive capacity. Professor Marteau said it was widely agreed that much behaviour was driven primarily by the automatic system, and was therefore closely linked to our environment, both physical and social. Professor Marteau outlined some experiments which demonstrated the impact of the physical environment on behaviour.

Professor Marteau argued that those who thought that behaviour was as driven primarily by the reflective system often took a negative attitude towards changing the physical environment to produce behaviour change. Conversely, those who thought that behaviour was primarily driven by the automatic system took a positive attitude towards intervening to change the environment, sometimes claiming that such interventions enabled individuals to behave as they really want to behave. Professor Marteau noted that most people mistakenly thought that the reflective system was most influential in causing behaviour. Psychologists referred to this misunderstanding as the 'fundamental misattribution error'.

Professor Marteau then discussed how evidence of effectiveness of interventions could affect public acceptability. She used the example of financial incentives for stopping smoking to demonstrate that though an intervention might initially be conceived negatively, public levels of acceptability might improve with evidence of effectiveness. Professor Marteau offered two examples of current policies to demonstrate that government's trade off the effectiveness of an intervention against other considerations. First, it was estimated that the current Government policy of placing a very low cost price minimum on alcohol would save 27 lives per year, whereas imposing a minimum cost of 40p per unit was estimated to save

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[349] *Public health: ethical issues*, *op. cit.*

[350] *Healthy Lives, Healthy People*, *op. cit.*

[351] *Public health: ethical issues*, *op. cit.*

almost ten times as many lives. Secondly, a voluntary agreement on salt reduction in the United Kingdom achieved a reduction in average daily intake of 1g, saving 6000 lives per year by reducing cardio-vascular diseases, whereas regulation that reduced the average daily intake by 4g would, it was estimated, save 20000 lives per annum. Professor Marteau noted that these examples raised ethical question about the other factors which governments might consider more important than effectiveness, and the extent to which this affected the acceptability of an intervention.

Discussion: when, and how, is it appropriate for the Government to intervene to change people's behaviour?

The discussion began with consideration of whether governments could only restrict choice to prevent harm to others, or whether they could justifiably also intervene to prevent individuals harming themselves. It was noted that it was considered appropriate for government to intervene to restrict children's choices because they weren't considered to have full ability to make rational choices.

The implications of knowledge about the automatic and reflective system of behaviour for measures to restrict choice were discussed. First, it was noted that understanding behaviour demonstrated that people sometimes behave in ways which they do not really want (for example, 77% of smokers wanted to stop smoking and 70% of people who were obese wanted to lose weight). It was suggested that this might explain why some policies which were at first unpopular and considered unacceptably restrictive of choice, became accepted, indeed welcomed when effective. This could justify implementing unpopular policies; though a policy might initially restrict choice, it might then allow individuals to behave in the way they want to behave. Others noted that if governments assumed that they knew what people 'really' wanted better than the individuals themselves, this might be the start of a slippery slope and could be used to justify interventions which were not acceptable.

Secondly, some policies which restricted choice for some enabled choice for others. For example, restricting alcohol consumption through fiscal measures could restrict choice for some by making it more expensive to drink, but might enable choice for others who could walk home safely at night (assuming a reduction in crime and anti-social behaviour as a result of reduced alcohol consumption). Certain restrictions on individual choice limit population harm and could be justified on Millian and many other grounds. Alcohol, smoking and obesity also harm the population by their cost to the NHS and, in the case of alcohol, increased rates of crime. It could therefore be argued that tackling these problems did prevent harm to others, so fell within the meaning of the 'harm principle'.

The role of social norms was then discussed. It was suggested that understanding the impact of social norms entailed understanding automatic and reflective processes which determined behaviour. Science had not been able to explain how and why social norms were produced but they reflected views of what was acceptable. For example, socials norms of alcohol consumption made interventions in this policy area difficult. If it was understood how to create a culture in which nobody would boast of having been "legless" this would support, or provide an alternative to, health promotion measures restricting access to alcohol.

Discussion: what makes a policy intervention coercive and how is this related to the restriction of choice?

A problem found during the course of the inquiry was outlined: those opposed to the use of legislation and fiscal policies to change behaviour had often defended their position by arguing that such measures were coercive. They had moreover cited the Nuffield Ladder in support of this claim. It was noted that in the text of the Nuffield report there was no claim that the top of the ladder represented forms of coercion, only that it represented more powerful or intrusive interventions. They were however characterised as coercive in a box within the report.[352]

It was argued that a distinction should be drawn between policies which were coercive and those which required coercive backing. Even interventions at the bottom of the Nuffield Ladder might require coercive backing if introduced as a matter of public policy, for example if businesses were legally required to provide certain information on food packaging. It was noted that coercion was felt by many to be intrinsically bad but that legislation was not in and of itself coercive. If legislation was seen as coercive, then the rule of law was itself a form of coercion. The link between coercion and financial incentives to change health behaviour was also discussed. It was noted that though the media sometimes described incentives as a form of coercion or bribery, it was very difficult to "pin the coercive tail to the incentive donkey".

The Ladder was intended as a mechanism for thinking about issues of acceptability in the first instance; it was not meant to be the last word on policy justification. It was suggested that the Ladder was being asked to do more than it was capable of doing by policy makers, particularly in the Public Health White Paper *Healthy People, Healthy Lives*.[353] Though the Ladder was useful, it only had one dimension, and so did not reflect the complexity of policy interventions. For example, providing information was at the bottom of the Ladder but the provision of information could be legally required, and the requirement would have the same coercive backing as other legislation.

Freedom of choice was discussed. It was suggested that the Nuffield Ladder had been used by policy makers because it fitted in with a politically "popular choice agenda". It was noted that there was a wide range of understandings about what sorts of choice should be protected. These included: freedom to make equal choices, freedom to choose as we like, equal freedom to choose as we like, or freedom as non-domination by others. There were problems with all of these understandings of freedom, but the conception of freedom as non-domination by others should be given particular consideration.

Ethics and "Nudge" (Professor Luc Bovens)

Professor Bovens first defined the concept of nudging, citing four criteria that made an intervention a nudge: the intervention must not restrict choice; it must be in the interests of the person being nudged; it should involve a change in the architecture or environment of the choice; it should exploit a mechanism of less than fully deliberative choice. These were relevant to judging what make a nudge permissible.

Professor Bovens noted that most people's immediate reaction to nudging was to think that they were being manipulated. He discussed the differences between

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[352] *Ibid.*

[353] *Healthy Lives, Healthy People, op. cit.*

subliminal advertising and nudging. He noted that there were two sorts of transparency; transparency could mean that people were told about an intervention or it could mean that people were able to discern for themselves that an intervention had been implemented. In the case of subliminal messaging, the first sort of transparency makes no difference to whether the messaging is manipulative. Similarly, for some interventions, such as placing health food first in a cafeteria, the first sort of transparency might prevent it from working as well. The second sort of transparency, that a perceptive person should be able to discern the intervention, was considered the most important sort.

Professor Bovens highlighted four other facts which should be considered when thinking about the ethics of nudging: the urgency of the problem to be solved; the cost of the intervention for responsible agents (not only financial cost but the cost, for example, of restriction of choice or intrusiveness); the extent to which the nudge is in the interests of the person being nudged; the identity of the organisation doing the nudging.

Discussion: are nudges ethically acceptable?

The extent to which businesses nudge people was considered. It was noted that experiments showed that food adverts influenced people's behaviour in ways that they were not aware of. Adverts exploited the same mechanisms but advertising was not generally considered unethical, unless it was deceptive or inappropriately targeted, for example, at children.

The justifiability of governments intervening to change social norms was discussed. It was suggested that many people would not be happy for government to seek to change the culture of society. Others argued that it was legitimate for the government to look at social norms which were already changing, as in the case of binge drinking.

In conclusion, it was agreed that thinking about choice was very difficult and there was a tendency to fall back on the 'harm principle'. The problem however was that governments would not be able to protect all choices and so they must decide which were most important. Thinking about choice was complicated by different conceptions of autonomy, particularly given the distinction between automatic and reflective choices. The extent to which autonomy should include both automatic and reflective choices was considered. How autonomy was conceived would have a direct impact on the acceptability of nudging, which sought to influence automatic choices. The concepts of informed and fully informed choices were then discussed. It was argued that there was often hypocrisy in public policy, particularly medical ethics, about whether only informed choices should be protected. It was agreed that governments should think very carefully about what they what they meant if they said that an intervention would restrict choice.

APPENDIX 7: ACRONYMS

BIT	Behavioural Insights Team (Cabinet Office)
BPS	British Psychological Society
CSA	Chief Scientific Adviser (within a Government department)
CSS	Chief Social Scientist
DECC	Department of Energy and Climate Change
Defra	Department for the Environment, Food and Rural Affairs
DH	Department of Health
DfT	Department for Transport
ESRC	Economic and Social Research Council
GCSA	Government Chief Scientific Adviser
CSS	Chief Social Scientist
GDA	Guideline Daily Amount
GES	Government Economic Service
GSR	Government Social Research service
HoA	Heads of Analysis group
HMRC	Her Majesty's Revenue and Customs
MRC	Medical Research Council
NCSCT	NHS Centre for Smoking Cessation and Training
NGO	Non-Governmental Organisation
NHS	National Health Service
NICE	National Institute for Clinical Excellence
NPRI	National Prevention Research Initiative
OECD	Organisation for Economic Co-operation and Development
QALY	Quality Adjusted Life Year
RCT	Randomised Controlled Trial
RCUK	Research Councils UK
STT	Sustainable Travel Towns programme

APPENDIX 8: RECENT REPORTS FROM THE HOUSE OF LORDS SCIENCE AND TECHNOLOGY COMMITTEE

Session 2006–07

1st Report Ageing: Scientific Aspects—Second Follow-up
2nd Report Water Management: Follow-up
3rd Report Annual Report for 2006
4th Report Radioactive Waste Management: an Update
5th Report Personal Internet Security
6th Report Allergy
7th Report Science Teaching in Schools: Follow-up
8th Report Science and Heritage: an Update

Session 2007–08

1st Report Air Travel and Health: an Update
2nd Report Radioactive Waste Management Update: Government Response
3rd Report Air Travel and Health Update: Government Response
4th Report Personal Internet Security: Follow-up
5th Report Systematics and Taxonomy: Follow-up
6th Report Waste Reduction
7th Report Waste Reduction: Government Response

Session 2008–09

1st Report Systematics and Taxonomy Follow-up: Government Response
2nd Report Genomic Medicine
3rd Report Pandemic Influenza: Follow-up

Session 2009–10

1st Report Nanotechnologies and Food
2nd Report Radioactive Waste Management: a further update
3rd Report Setting priorities for publicly funded research

Session 2010–12

1st Report Public procurement as a tool to stimulate innovation