Habits, Routines and Sustainable Lifestyles

Summary Report

A research report completed for the Department for Environment, Food and Rural Affairs by AD Research & Analysis

November 2011

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Department for Environment, Food and Rural Affairs
Nobel House
17 Smith Square
London SW1P 3JR
Tel: 020 7238 6000
Website: www.defra.gov.uk

Information about this publication is available from:
Centre of Expertise on Influencing Behaviour
Defra
Area C, 5th Floor, Ergon House
c/o Nobel House, 17 Smith Square
London SW1P 3JR

Email: CEIB@defra.gsi.gov.uk

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The project team was led by Andrew Darnton (AD Research & Analysis) with Bas Verplanken (University of Bath), Paul White (The Social Marketing Practice) and Lorraine Whitmarsh (Cardiff University).

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TABLE OF CONTENTS

Executive Summary

Background

This report provides a summary of findings from a literature review on the role of habit in relation to sustainable behaviours. It sets out the theory on habit from two different perspectives, identifies effective techniques for bringing about habit change, and draws out implications for policy makers and practitioners. The review has highlighted the importance of understanding habit when designing interventions to influence behaviour.

The review adopts an interdisciplinary approach, looking at the theory on habits from first a social psychological, and then a sociological, perspective. The aim is to understand and draw out the differences between the two ways of thinking about habits, in order to help policy makers and practitioners identify different ways of intervening to change habits. Because the two approaches (particularly when taken at their more extreme ends) are based on fundamentally different ways of understanding behaviours and practices, the theories are kept distinct in this review. In doing this, the intention is not to present opposing views, but rather to establish the two distinct approaches as offering different opportunities for interventions designed to change habits. When the implications of these two perspectives are drawn out, we arrive at an integrated set of potential interventions, which together can address habits on multiple levels.

The methodology for the study involved a literature review, guided by an expert advisory panel, and included a systematic search of academic databases. A practical workshop with the advisory group was also convened, to draw out implications from the theory on habits, and begin to shape practical interventions for habit change in the context of sustainable behaviours.

Why Habits?

Habits matter. Some, most or even all of our behaviour can be considered habitual. For instance, work in psychology has found that 45% of our behaviours are undertaken in the same place almost every day[1]. Meanwhile, work in neuroscience has found that 95% of our behaviour is governed by the 'automatic mind' – that part of the brain which oversees our biological functioning and most of our daily behaviours[2].

Habit is especially important in the context of advancing sustainability, as many behaviours with the biggest environmental impacts are habits. Everyday behaviours in and around the home are clear examples, and many of these are resource-intensive, including energy and water behaviours, but also behaviour which produce waste (which in turn is handled through habitual behaviours). Food choices are also obvious habits, which evolve over time with our preferences. Travel behaviours are also habits: most obviously when frequently recurring, like the daily commute, but also potentially when less frequent but still part of a familiar pattern, like the summer holiday or Christmas break (this partly depends which definition of a habit is being applied).

In each of these examples, we might say that the habitual aspect of the behaviour is in competition with the rational aspect. As habits are 'less rational' behaviours, it follows that interventions which run along rational lines (eg. relying on information or incentives) may not be able to influence these behaviours effectively. If most or even all of behaviour is habitual, practitioners will need to understand habit if they are to influence behaviour toward sustainable lifestyles.

Understanding Habit

The literature provides two distinct perspectives on habit, coming from two different academic disciplines: psychology, and sociology. In the former, habit appears as a psychological construct, and a factor influencing behaviour. In the latter, habits appear as routine practices. These differences in describing habits go to the root of the differences between how the two disciplines think about human conduct. Social

[1] eg. Quinn and Wood 2005, in Neal et al 2006
[2] eg. Lakoff and Johnson 1999, in Martin 2008

psychologists talk about ‘behaviour’, which originates in the individual, and is the product of their beliefs, attitudes and other motivational factors. Sociologists on the other hand talk about ‘practices’, which exist as entities out there in the social world, and are reproduced by the individuals who perform them.

- **Habit as a Factor in Behaviour**

  Many social psychological models do not feature habit at all. However, those that do, like Triandis’ Theory of Interpersonal Behaviour, show habit to be one factor among several which interact to determine behavioural outcomes[3]. Most importantly, Triandis’ is a ‘dual-path’ model: it shows how our behaviour can result either from a rational path involving careful deliberation, or from a habitual path, based simply on how often we have undertaken the behaviour before. Because our behaviour can sometimes flow solely down the habitual path, Triandis’ model allows for completely habitual, and completely unintentional, behaviour.

  However, Triandis’ definition of habit simply as the frequency of past behaviour proved insufficient for further work to model habits. More recent work in psychology enables us to propose a three part definition:

  Habit requires frequency, automaticity and a stable context.

  This definition highlights that in habitual behaviours, our intentional control is effectively passed over to the environment in which the behaviour occurs[4]. Hence, encountering contextual ‘cues’ (be they places, times, people, other behaviours and so forth) will trigger the enacting of the habitual behaviour.

  For this reason, habit change techniques from the psychological perspective tend to focus on causing disruption to the environment in which the behaviour occurs, and to people’s routines: making the context unstable, and making people deliberate afresh over their behaviour.

[3] Triandis 1977
[4] eg. Aarts et al 1999

- **Habit as a Routine Practice**

Sociology holds that all practices are routine: in order that people can reproduce them, practices need to be recognisable, and relatively stable entities. One implication for those engaged in habit change is that a practice needs to be addressed as a whole.

Practice theory (an emerging branch of sociology) holds that practices are made of three elements[5]:

Materials *(objects, hard infrastructure)*

Competences *(skills and know-how)*

Images *(meanings, ideas and interpretations)*

These three elements are not factors, determining behavioural outcomes; rather the practice is emergent, and represents the coming together of those elements in the moment at which the individual reproduces the practice. The individual in turn is not the originator of the behaviour, but the carrier of the practice – which will go on after s/he has finished carrying it out.

Practice theory can be particularly helpful for understanding everyday behaviours which are often resource-intensive. Take the example of the routine practice of daily showering: the materials include piped hot water, the competences include being able to run the boiler to get hot water at the right times, and the images include the importance of daily freshness (in order to fit in with everyday society). Seen from a practice perspective, behaviours such as this become increasingly less a question of individual motivation, and conscious deliberation.

Intervening in habits as routines thus involves reconfiguring the elements in a practice, substituting new meanings for old, or making links between different combinations of elements so that new practices can be supported, or old ones fall apart. Instead of focusing on the motivational factors driving behaviour, practice-based approaches put the practice itself at the centre of the enquiry. Critically, they may not involve targeting individuals at all.

[5] Shove 2008

Psychology and sociology offer two distinct and sometimes conflicting accounts of habit. Yet to take full advantage of the insights from these two perspectives, it is imperative that practitioners understand both, and do not privilege one over the other. This is because different behaviours will suit different approaches, and different audience groups will respond better to different kinds of intervention. For instance, those who are already motivated to change may need individualised help with 'getting started', while the unmotivated may be best addressed through practice-based programmes that do not target individuals directly. Such an interdisciplinary approach is also in keeping with best practice in behaviour change guidance, which observes that *"there is no one winning model"*[6] – an adage particularly appropriate when tackling complex problems like environmental sustainability.

Implications for Interventions

Across the two disciplinary perspectives set out in the review, three different approaches to habit change intervention are identified, which work in different dimensions:

i) Targeting Individuals

A range of intervention techniques targeting individuals are identified, grounded in the psychological principle of breaking habits through disruption. Some of these involve using a group setting to lift habits up to conscious scrutiny, before agreeing to change the behaviour, and then letting it fall back into the flow of daily activity, to become a new habit[7]. Other techniques involve individuals being alert to the habitual responses which are 'cued' automatically when they encounter particular situations and circumstances[8]. An alternative technique, called Implementation Intentions, involves helping people form new habits by linking their existing goals to specific contexts (using simple 'if-then plans': 'if situation y occurs, then I will do z')[9]. This easy technique has been proven effective for forming positive health habits, like taking medicine or performing

[6] Darnton 2008
[7] Hobson 2003, 2001; Nye & Burgess 2009
[8] Quinn et al 2010
[9] Gollwitzer 1999

self examination. However, it only works for those with existing intentions to undertake the behaviour, and where strong conflicting habits are not in place[10].

All of these individual-level techniques show potential for application to sustainable behaviours. However, they all rely on individuals being pre-motivated to change: both to get them in the room to undergo the intervention, and to make sure they stay the course. Because of the one-to-one or small group format of these methods, and because of the conscious control they require from participants, they can also be called intensive interventions. However, many of these techniques could also be easily incorporated into existing change programmes, in order to increase their effectiveness in tackling habits.

ii) Targeting Events in the Lifecourse

It has been found that particular life events represent moments of disruption to people's routines, which in turn can serve as 'windows of opportunity' in which to deliver interventions when people may be more able or willing to do things differently [11]. Moments such as moving house, changing jobs, becoming pregnant or retiring from work all represent transitions when people's daily routines are disrupted, and need to be reconsidered before new routines emerge. There is increasing evidence that habit change interventions delivered at these 'Moments of Change' can be more effective than if delivered at another time[12]. For example, evidence of changes to travel behaviour when people move home seems to provide an opportunity to encourage people to review the way they travel, while they are investigating their new journeys.

The theoretical basis for such interventions is summed up in the 'Habit Discontinuity Hypothesis'; this theory is already being applied in action research projects by Defra, for instance those targeting first year students as they move into halls of residence[13]. The theory could equally well be applied to other life events, and benefits could be gained by practitioners simply from timing their existing interventions to coincide with these 'moments of change'.

[10] see eg. Gollwitzer & Sheeran 2008
[11] Verplanken, Walker, Davis & Jurasek 2008
[12] Thompson et al 2011; Bamberg 2006

[13] Whitmarsh et al 2011 (forthcoming)

iii) Targeting Routine Practices

One of the key outputs from this review is the development of a tool for applying recent theory on 'transitions in practice' to policy making for habit change. In essence, this method involves convening interested parties around the practice in question, and using a simple model of the 3 Elements as a tool to identify those specific elements which hold the practice together – individuals and their motivations are deliberately left off the model. Developed from its origins in theory, the 3 Elements tool has already been applied to diverse behaviour 'problems' in policy settings including transport and justice, as well as in the environment.

The outcome of the mapping exercise is the identification of elements of the social world which hold particular practices in place. These elements can be described as the 'hard infrastructure' – how the world is physically constructed – and the 'soft infrastructure' – for instance, institutions, arrangements (including timetables), and discourses and ideas which circulate in daily life. These elements which sustain particular practices are generally not picked up by the usual economic or psychological analyses.

The 3 Elements tool is used to map the elements in a specific practice; effectively this is a brainstorming session involving multiple stakeholders with an interest in the practice in question. It is anticipated that this session could be the first step in a programme of 'transitions in practice' activity, in which stakeholders tweak and tune those elements for which they are responsible, to bring about change in the practice as a whole.

These three types of intervention come from different theoretical backgrounds, and have different strengths and weaknesses. But together they offer an integrated programme for habit change, including approaches that will work for some audiences better than others. But whether people are pre-motivated to make changes in their habits or not, it is important to recognise the potential for 'lock in' present in everyday behaviours[14]. Intervention is not a matter of removing external factors, or simply working upstream of the consumer (eg. by changing aspects of the supply chain). It becomes a matter of rearranging the parts, the rules and resources which make up

[14] eg. Sanne 2002

the habit as routine. This strategy could at first glance seem similar to that arising from a psychological understanding of habit – change the environment around the person in order to disrupt the contextual cueing of the habit. However, in this practice-based approach, the environment is more than a trigger for the habitual behaviour, it is a strand intertwining with other strands which together create the habit. As so often, these differences may be worked out on the ground; both perspectives suggest that changing the environment will be required to bring about sustained habit change. However, a practice-based approach stresses that unless the change in the environment is also accompanied by a change in the underlying rules and resources then the habit may well live on.

Some of the methods suggested here for habit change may represent additional activities, but most can easily be built into the programmes of existing practitioners (for instance projects led by civil society). Implementation Intentions is a clear example. Meanwhile, targeting interventions at Moments of Change does not necessarily require additional spend, but rather suggests that the effectiveness of current programmes could be improved by timing them to fall at moments where they are most likely to succeed. Finally, with practice-based programmes based on the 3 Elements tool, the emphasis is on helping a range of practitioners and stakeholders identify ways in which the things that they do already can be done differently, in order to address a problematic practice. Applied in the right setting, this is likely to be a very resource efficient way of working.

Implications for Policy, Communications, Research and Strategy

The summary report concludes by drawing out implications from this review on habit for practitioners involved in influencing behaviours. A few key points are outlined here, arranged under the different policy functions for which they are most relevant.

i) Implications for Policy

- Think about a behaviour change problem as a habit change task. For instance, understand the strength of the habit among the target audience and the likely intensity of intervention required to break it, and allow for the time required by individuals to make the changed behaviour habitual. Moreover, thinking of habits

as routine practices means that in some cases individuals may not need to be targetted directly at all.

- Explore the potential for building habit-change techniques such as Implementation Intentions or Moments of Change into existing programmes.
- Adopt a 'habits as routines' perspective by using the 3 Elements model as a mapping tool early in the policy development process. Draw together resources and skills from different specialisms around those routine practices, essentially using habit change as a means of joining up within and across departments.
- Continue to work with leading stakeholders across the prevailing system, and position policy in a convenor role in the middle of this constellation.

ii) Implications for Communications

- When developing campaigns around habit changes, think about the different roles that communications could play from a 'habit as a factor in behaviour' perspective, including to motivate individuals to participate in self-change programmes, and to support those already engaged in self-change programmes, eg. by providing physical prompts and reminders.
- Tie interventions to life events; work with Research to identify the best fits, and conduct further research to devise effective means of delivering messages around key life events.
- Experiment with the 3 Elements model in campaign development, as a means of identifying different messages, and different strategies for the role of messaging.
- Capitalise upon the ability of communications to shift discourses and generate collective meanings around habits as practices – rather than just to target specific behaviour changes through information or persuasion.

iii) Implications for Research and Strategy

- Continue to investigate the potential of life events ('Moments of Change') for increasing the effectiveness of interventions designed to bring about pro-environmental habits.

- Build habit strength scoring (using the Self Reporting Habit Index) into existing action-based research and pilot programmes. Explore how habit strength correlates with, or cuts across, segmentation models.
- Develop further action-based research projects incorporating Implementation Intentions, in order to refine understandings of their potential for pro-environmental behaviour change.
- Adopting the 'habits as routines' perspective, undertake desk research to map the influences of current policies on particular environmentally significant behaviours: what hard and soft infrastructures do the policies put in place, and in turn what routine practices do they contribute to?

Conclusions

The focus of the review has been on two different ways of thinking about behaviour, to help improve understanding of where there are opportunities for interventions to address habits, and how interventions based on different perspectives can work together as part of an approach designed to deliver change. Together these approaches provide practitioners with an integrated suite of tools which can address habit on a number of levels. But above all, they provide practitioners with the capacity to think differently about habits, in order to meet the needs of different policy problems and audiences. In short, it is a both/and, not an either/or, approach to habit change that is required.

1. Background and Methodology

This report summarises the main findings, practical opportunities and implications for strategy, policy and communications arising from an extensive literature review exploring the role of habit in the context of sustainable behaviour. The report is designed to help policy makers think about the role of habit in behaviour, to help them identify why habit is important when designing interventions to influence behaviour, and to provide ideas for how interventions could be developed to address habitual behaviours.

The objectives of the literature review included:

- What is 'habit'? How is it conceptualised, where does it come from, and how does it influence behaviour?
- How is the habitual component of behaviours measured? What pro-environmental behaviours might be considered habitual?
- What practical approaches are known to change habits, and what evidence exists of effective interventions? What other factors might also need addressing to encourage specific habitual behaviours?

In order to answer these questions the review adopted two different perspectives, reflecting two different traditions in the academic disciplines of social psychology and sociology. Habit is increasingly prominent in recent research and strategies designed to influence behaviour – for instance in behavioural economics[15] - but habit can often appear there as an outcome, or desirable end state. By contrast psychology and sociology go back to the roots of behaviour, and offer fuller explorations of habits and routines per se, both ‘good’ and ‘bad’. Each of these two disciplines also says distinctively different things from the other (particularly if we look at the more extreme aspects within the disciplines). In psychology, habit appears as a psychological construct, and a factor influencing behaviour. In sociology, habits appear as routine practices. The review began from a social psychological approach but expanded (and was extended) in order to draw in more of the sociological literature. The result is an interdisciplinary study.

[15] see eg. Mindspace – Dolan et al 2010

As well as exploring the theoretical evidence on habits, the review looked at techniques for tackling habits, to inform ideas for practical interventions to address habits. Alongside the literature review, an expert workshop was convened in order to generate proposals for practical projects which could be undertaken to bring about habit change, and build further understanding on the workings of habits. Taken as a whole, the project can be seen as exploratory in nature, looking into a topic which has often been overlooked in behaviour change activity, and especially so in the environmental sphere. In turn, the evidence provided in the review is more theoretical than empirical. It is hoped above all that the review helps readers to think differently about habits, and the pursuit of behaviour change.

The project involved a desk-based review of literature (including both systematic and non-systematic review), which largely focused on academic theoretical literature on habit. A three stage approach was adopted to the methodology for the literature review, as follows:

i) Data Gathering

A call for information was sent out to 30 selected academics and practitioners, asking them to identify relevant literature against the defined scope of the review. The academics were drawn from a range of specialisms within psychology and sociology; they worked in policy areas including health and transport, as well as environment. At the same time, lists of relevant sources were drawn up by each member of the project team, and by Defra. Finally, a systematic search of relevant databases of academic papers was under taken. Through this process, a long list of over 700 papers and reports was drawn up. All the sources identified by the academic and practitioner advisors and the project team were read, along with the top 100 sources from the systematic search (as ranked by the project team, against an agreed criteria (including quality assessment) and the objectives for the review – with papers addressing pro-environmental behaviours taking particular priority).

In terms of the kinds of sources identified, it can be briefly remarked that habit is a widely used term in relation to behaviour, but that many references do not go on to define (or conceptualise) habit per se. Instead habit is a term used simply to mean a frequent behaviour (as is discussed below), or something which obstructs rational behaviour. Having said that, there is a growing body

of work in social psychology which focuses solely on habit, and has established ways of conceptualising and measuring habit as a factor in behaviour. This area of the literature is well-supported with empirical evidence from practical research, both in the laboratory and in the real world – although the majority of this work relates to health rather than environmental concerns. Turning to the alternative perspective on habits provided in sociology, here habit is a much less widely used term; however, because (as will be explained below) habits are understood as the whole routine practice in itself, effectively the entire literature on social practices is potentially relevant to this review. However, this review particularly concentrated on that growing part of the practices literature which addresses consumption practices, especially in the context of advancing sustainability. In contrast to the psychological literature, this body of sociological literature tends not to include experiments and empirical proof. Instead it draws its evidence from analyses of current and past practices, and of the aspects of everyday life which contribute to them. Data sources here include time use studies, sales data, and survey data on reported behaviours (not individuals' perceptions).

ii) Advisors' Workshop

Of the 30 advisors who were approached with the initial call for information, 20 attended a practical workshop (these were split evenly between 10 academics and 10 practitioners – see full list in Annex A). The workshop was designed to engage the advisory group in the creative task of developing practical project designs for future interventions based on habit theory.

The workshop was conducted at an interim stage in the project, when findings from the literature review were emerging. The translation of the theoretical evidence into practical tools was negotiated by means of a '*Habits Journey Planner', a bespoke workbook which advisors used to guide them through a set of tasks on the day (including identifying different kinds of habit at work in pro-environmental behaviours, and discussing measurement techniques)*.

The final part of the workshop involved pairs of advisors presenting 'project pitches': their short ideas for practical projects to bring about habit change. The most popular of these ideas were worked up into template project proposals.

iii) Reporting

Following the advisors workshop, additional sources were added to the literature review, such that in the end 192 sources were included in the final review (a list of the selected sources cited in this summary report is given in Annex B).

2. Introduction – Why Habits

Habits matter: some, most or even all of our behaviour can be considered habitual.

"Most of the time, what we do is what we do most of the time."[16]

By using this phrase, social psychologist Wendy Wood, draws attention to something that appears mundane, and well-known to us all, yet turns out to be extraordinarily slippery: habit.

The phrase also raises the question of how much of our behaviour is habitual. To explore this, Wood and colleagues have conducted 'experience-sampling' studies in which people were supplied with a diary and a pager, and every hour each day for a week or more they were paged and asked to record where they were, what they were doing, and what they were thinking[17]. The studies found that roughly 45% of behaviours were undertaken in the same place almost every day.

A further answer to the question could be 95%, this being the proportion of our behaviours which are controlled (at least in part) by the subconscious mind, according to some neuroscientists[18]. Recent work in neuroscience has explored 'dual process' models of cognition, resulting in the identification of our two minds: the 'reflective mind' and the 'automatic mind'[19]. This work has been taken up in behavioural economics; for instance, the idea of the two minds will be familiar to readers of Nudge[20]. The fact that much of our thought takes place in the automatic mind is one explanation given by behavioural economists for why people so often settle for sub-optimal outcomes. Likewise in psychology, the automatic mind can explain why our behaviours so often do not match our intentions. In turn, this has stark implications for policy makers; if we design our interventions along rational lines, we are likely to overlook the evidence that most of our behaviour is less than rational, and is only in passing a matter of individual choice.

[16] Townsend and Bever 2001, in Martin 2008
[17] eg. Quinn and Wood 2005, in Neal et al 2006
[18] eg. Lakoff and Johnson 1999, in Martin 2008
[19] see eg. Stanovich & West 2000
[20] Thaler & Sunstein 2008

Habits matter then, but they are only problematic if they are working counter to our intentions, or are leading us into taking actions which we might, on reflection, disapprove of. In many other instances, where our habits are in line with our intentions, habits serve the beneficial function of ensuring our day to day behaviour rolls out smoothly and consistently. It is only when it is contrary to our behavioural goals that this kind of habitual behaviour can be termed as a 'bad' habit. The same point can be applied at the level of policy – habits can be useful for policy purposes, if they are supporting patterns of behaviour which are in line with policy goals. At this level, embedding 'good' habits can be as vital as breaking 'bad' ones. How habits are formed, what holds them together, and what can make them fall apart again are thus critical questions for those involved in understanding and influencing behaviour.

For all that habit is an everyday term, it is very difficult to define, and covers a wide spectrum of applications. In answering the question 'what is habit?', two particular approaches appear in the academic literature; it is important to understand the differences between these approaches in order fully to recognise possible opportunities for developing interventions:

i) Putting the emphasis on the individual:

   In this approach, habits are loosely taken to be a certain type of behaviour in themselves. More precisely, habit is also identified as a factor in those behaviours, interacting with other key factors such as attitudes, norms and intentions, to determine behavioural outcomes.

ii) Putting the emphasis on the social world:

   Here, habits are understood as routine practices, taken as a whole, and arising from the ongoing interactions between individuals and social structures, institutions, or rules and resources.

These two different approaches arise from different academic traditions, and enable us to think differently about how interventions should be designed if they are to address habitual behaviours[21]. If habit is a factor driving individual behaviour, one

[21] This review focuses on two approaches as, particularly when taken at their more extreme ends, they are based on fundamentally different ways of understanding behaviours and practices. We chose to keep these two theories distinct in this review. In doing this, the intention is not to present opposing views, but rather to

implication would be that interventions should go in tight and intensively, working with individuals alone or in small groups to break and embed habits over time. If habits are socially-negotiated routines, then by contrast the interventions should go wide and work on the infrastructures, institutions and discourses which pattern society and contribute to the prevailing routines. If we adopt the latter perspective - for some habits, there may be no need to target individuals with interventions at all.

Given the habitual nature of many environmentally-significant behaviours, which are both regularly repeating, and resistant to change, interventions based on one perspective or the other may not suffice. An interdisciplinary approach is required; based on these two different ways of thinking about habits, the review has developed proposals for an integrated suite of tools which can address habit on a number of levels to meet the needs of different policy problems and audiences.

establish the two distinct approaches as offering different opportunities for interventions designed to change habits.

3. A Theoretical Overview of Habits

3.1 Behaviour and Practice

This section briefly outlines two different conceptualisations of habit in the academic literature. First, it introduces habit as a factor in behaviour, then it explores the concept of habits as routine practices. These two conceptualisations are treated separately, in order to provide clarity, and retain their distinctive characteristics – which in turn should help policy makers think about habits in different ways. In doing this, the intention is not to present opposing views, but rather to establish the two distinct approaches as offering different opportunities for interventions designed to change habits. While coming from distinct theoretical directions, the resulting approaches should be considered complementary as together they provide an integrated suite of tools which can address habit on a number of levels to meet the needs of different policy problems and audiences.

These two different conceptualisations of habit arise from two different academic traditions, within social psychology on the one hand and sociology on the other. Both disciplines are of course broad, branching out and touching in many places – habit being one of those places. But in essence (particularly when taken at their more extreme ends) they present different understandings of human conduct, and their different approaches to habit follow on from these foundations. Sociology talks of 'practice', and psychology, 'behaviour'. Increasingly, academic work in sustainability aims to weave together both approaches (see for instance, the work of the Defra, ESRC and Scottish Government funded Sustainable Lifestyles and Sustainable Practices Research Groups[22]).

Worked out on the ground, 'practices' and 'behaviours' are hard to distinguish. A simple definition of a practice is, if you ask someone what they're doing, the answer they give you is probably a practice: playing football, drinking tea, driving to work, doing the ironing, and so forth. In our everyday language, these activities could just as well be called behaviours, but 'behaviours' and 'practices' are not synonyms. The distinction is critical so that effective interventions can be designed to address problematic habits. If we work with only one definition, policies and interventions

[22] see http://www.esrc.ac.uk/about-esrc/what-we-do/our-research/SBRC.aspx for further information.

may miss the salient factors and influences which are holding the habit in place. Accordingly, practitioners need to work with both definitions of habit at once – but keeping them distinct in their minds. In order to help them do so, a few of the key differences between behaviour and practice are set out in the table below.

Behaviour	Practice
Individual as Origin	Individual as Carrier
Caused by Drivers	Co-evolving
Consequentialist	Recursive
Individual Choice	Shared, Social
As if for the First Time	Within a Continuous Flow of Activity
Contextual Cues	Emergent Rules and Resources
Values/Beliefs as Underlying Foundations	Needs/Desires as Outcomes

The table is deceptively simple, and would need a good deal of unpacking to provide a full account of these far-reaching distinctions between the two approaches. Many of the distinctions are discussed later on in this section on Theory. The first area listed in the table is perhaps the most fundamental: behaviour is taken to be the product of individuals' motivations and capabilities, expressed through interaction in social groups and the wider world. Behaviour is thus the property of the individual, and hard to separate from them[23]. By contrast, practices are relatively stable entities which are inherently repetitious and recognisable; they seem to have some independent existence of their own, such that individuals reproduce them when they act[24].

[23] see eg. Jackson 2005; Graybiel 2008
[24] see eg. Ropke 2009

Moving on to the second distinction, and one which will be familiar to many readers working on behaviour change: behaviour is taken to be the product of an array of factors – commonly called 'barriers and drivers' – which combine in sequence, determine behavioural intentions, and which in turn trigger the end behaviour. By contrast, practices are not the result of a series of factors, but the emergent outcome of elements (such as infrastructure and institutions) which already exist in the social world. Particular combinations of elements are drawn together in particular practices, but a given element can also support a range of other practices. Again, this distinction is quite subtle (and is discussed in more detail in Section 3.3 below), but has fundamental implications, both for how we understand behaviour, and how we think about intervening in it. For instance, in the behaviourist perspective, if we lift barriers, the assumption is the behaviour we require will ensue; however, from a practice perspective, the right elements need to be in place, but those conditions will not necessarily lead to the required practice being performed.

By way of illustration, we may take the example of playing football. From the football-as-behaviour perspective, we would mostly be interested in me: questions like my decision to play in the first place, how well I play, how hard I play, who I play with, and who wins. My attitudes towards football, and my skill at playing it could be labelled as barriers and drivers. By contrast, a practice perspective would explore how I take up certain materials (a football, and jumpers – for goalposts), abide by certain conventions (the rules of the game, the objective – scoring goals, and the emotional content that makes it engaging – being elated or 'gutted'), use my know how (skills and tactics) and follow particular spatial (Hackney Marshes) and temporal procedures (Sunday 10am). All these elements of the recognisable practice of football exist before I start to play, and persist after I have packed up and gone home: so long as someone somewhere keeps playing, the practice lives on.

As discussed above in the context of habit as a factor in behaviour and habits as routine practices, such conceptual differences suggest two distinct but overlapping strategies to intervening for the purposes of encouraging sustainable lifestyles. One would focus on individuals' motivations and resources, and work intensively with them to break or embed habits. The other would involve looking at the wider social world, and the aspects of 'hard' and 'soft' infrastructure which hold particular routine practices in place. (This new terminology has been developed for this review, to underline how practice theory addresses the way the social world is constructed, both physically - as hard infrastructure – and in terms of institutions, timetables and

other frameworks, and the prevailing discourses and ideas which are in circulation in daily life – the soft infrastructure.) While the two approaches to habit are conceptually distinct, this review concludes that both are needed to respond to the complex and often embedded everyday behaviours which have negative environmental impacts.

3.2 Habits as Behaviours

This section explains more fully the way in which habit is understood in social psychology. This follows from the conceptualisation of behaviour, as introduced above: habit appears as a factor within behaviour, acting as a barrier or driver to determine behavioural outcomes.

The key points in this section include that:

- Habit can be used to explain why our behaviours are often not in line with our intentions: in fact, some behaviours can be entirely driven by habits, and are not at all intentional.
- Habits are not simply defined by their frequency; as well as frequency, the other aspects of habit involve automaticity (the absence of deliberation, or conscious thought), and a stable context (for a habit to be formed, the immediate environment in which the behaviour occurs needs to remain constant).
- Habit strength – the extent to which a behaviour has become an established habit and is not driven by intentions – can be measured, using a set of survey questions which assess the frequency, automaticity and context stability of a behaviour for a particular person at a given point in time. In turn, this measure can suggest the type and force of intervention needed to break (or further embed) the habit.
- From this perspective, practical techniques proven to change habits can be described as individualistic interventions (some of which may be more intensive), based on working with individuals to bring their habitual behaviour under conscious scrutiny. In particular, ‘Implementation Intentions’ techniques involve helping people to develop behavioural ‘scripts’ that enable them to put new habit cueing processes in place.

- An element of disruption to the flow of daily life is also required; targeting interventions to coincide with key events and other transitions in the lifecourse (such as leaving home, having a baby, or moving job) could also increase the effectiveness of habit-based interventions[25].

Habit as a Factor in Behaviour

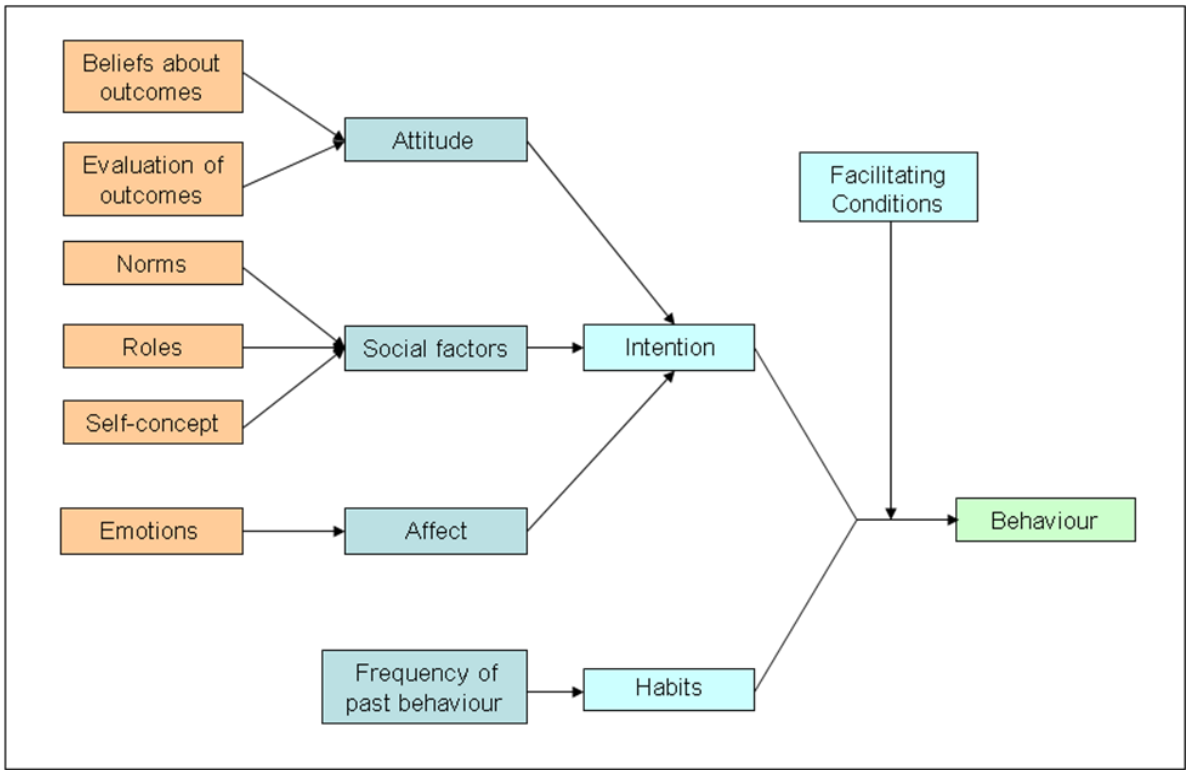
In common with standard economic theory, social psychology works on the assumption that our behaviour is intentional, and is consistent with our goals. These assumptions result in linear models of behaviour, such as those in which beliefs lead to attitudes, which inform intentions, which result in behaviours[26]. This way of thinking often lies behind information-based interventions, which aim to change attitudes, on the assumption that atttiude change will lead to a change in behaviour.

However, there are possibly more examples where this is not the case than where it holds true; the 'value-action gap' has been applied by psychologists in the context of sustainable behaviour as a device for explaining why our behaviour all too often does not align with our beliefs[27]. Habit can be taken as one answer to the question of what's in the gap.

In 1977 Harry Triandis presented his Theory of Interpersonal Behaviour (TIB), to account for individuals' less rational behaviour (see Figure 1 below)[28]. The model is a perfect example of the 'habit as a factor in behaviour' perspective: habit appears as a causal factor in the model, alongside attitudes, norms and such like. However the model is out of the usual run of social psychological models not only in that habit is explicitly shown by Triandis – most social psychological models before the TIB, and many of the most well-known since the TIB have not included habit - but also in that it is given its own path, running parallel to intentions in determining the end behaviour. The two paths counterbalance one another, such that when intention is strong, habit is weak (and can be zero), or vice versa. In this way, Triandis recognises that our behaviour can sometimes be utterly unplanned, and unconscious.

[25] NEF 'Moments of Change', 2011 forthcoming; Verplanken, Walker, Davis & Jurasek 2008; Bamberg 2006
[26] see eg. Blake 1999, discussed in Darnton 2008
[27] Kolmuss & Agyeman 2002
[28] Triandis 1977

Figure 1: Triandis' Theory of Interpersonal Behaviour (TIB), (1977)



The TIB has been used less than its more celebrated equivalents, such as the Theory of Planned Behaviour (TPB), but it has been shown to be a better predictor of behavioural outcomes than other models (including the TPB) in behaviours where there is a significant habitual component – such as daily commuting by car[29]. The implications of the TIB for policy makers and practitioners are numerous, stemming from that clear vision that our behaviour can be simply habitual (ie. completely unintentional). The most obvious lesson is that rational appeals to individuals, based on persuasion or social norms, with the expressed aim of changing our intentions, may have no impact on behavioural outcomes, if the behaviour in question is following the habitual path. In many instances, the best predictor of our future behaviour is how we have behaved in the past.

Dual Path Models and Dual Process Cognition

Embodied in Triandis' model is the psycholgical thesis that our behaviour can follow two diffferent paths: a deliberative path (via intentions) and an automatic path (via

[29] Bamberg & Schmidt 2003

habits). This thesis has a long pedigree back to the beginnings of psychology[30], and can be followed through to current work in neuroscience which identifies two distinct mental process, known as 'dual process models of cognition'. In 2000 the cognitive psychologists Stanovich and West undertook a synthesis of the available models, and encapsulated the idea of dual process approaches in their concept of System 1 and System 2 cognition[31]. Put simply, System 1 cognition is fast and automatic, while System 2 is slow and effortful. The two Systems run in parallel: much of our behaviour is automatic and directed by System 1, but on occasions we perform careful deliberation, and that occurs in System 2. At other times, the two systems combine, and our judgements (in System 2) are not based on a careful evaluation of the object or behaviour in question, but on the impressions generated (quickly) by System 1.

The idea of a dual process model of cognition has become increasingly mainstream, and may now be familiar to readers from the recent work based in behavioural economics, such as 'Nudge', whose authors write about the Automatic System and the Reflective System[32], while Neale Martin's 'Habit…' describes the 'habitual mind' and the 'executive mind'[33]. Following 'Nudge' the 'Mindspace' guidance on behaviour change from the Cabinet Office / Institute for Government describes a range of influencing tachniques which are designed to work with 'the Automatic system'[34].

Habits are bound up in this thinking on behavioural economics, although their presence is often not made explicit (for instance, they do not feature in the 'Mindspace' mnemonic, although 'good' habits are assumed to be the desired endpoint of effective policy interventions). Indeed Triandis' 'dual path' model of behaviour can be read as a social psychological archetype of 'dual process' models of cognition. As we have seen, in both examples the two paths or processes run in parallel, moderating the influence of the other: we are rarely purely deliberative or purely habitual in our behaviour, just as the automatic mind is always running underneath and informing the reflective mind.

[30] James 1890
[31] Stanovich & West 2000
[32] Thaler & Sunstein 2008
[33] Martin 2008
[34] Dolan et al 2010

Towards Automaticity

However, what Triandis did not explicitly include in his model was 'automaticity', the quality we now associate with habitual behaviour. Instead he chose to measure habits simply through frequency of past behaviour: the more we had done something in the past, the stronger the habit. A moment's consideration can show this is not the case; take the example of the consultant surgeon, who has frequently sent patients to the operating theatre – the patients would hope that in none of these cases was his behaviour simply automatic.

From a psychological perspective, habits are formed through repetition, but habit as a construct is more than the frequency of past behaviour. Through repetition, our behaviour acquires 'automaticity', which is defined as: lacking awareness of our action; lacking conscious intent; being difficult to control; and having efficiency[35]. However, for our behaviour to become automatic, the repetition must take place in a stable context – be that the place, the time, the people we are with, the mood we are in, and so forth. In the end, it is the immediate context around us that triggers the automatic behaviour; hence social psychologists talk of habits as situations in which the control of our behaviour has been passed to the environment[36]. In this way, we can undertake behaviours that do not reflect our conscious intentions.

The 3 Pillars of Habit

The three aspects discussed above can be defined as the three 'pillars' of habit, as seen from a social psychological perspective. This in turn allows us to create the following definition:

Habit requires frequency, automaticity and a stable context.

This three-part definition of habit has practical value for the development of effective interventions, as it can be used to help identify when a behaviour is a habit, and thus is likely to require specific approaches (as discussed below). In the context of sustainable behaviours, most of the things with environmental impacts which individuals do in and around the home are likely to be habits by this definition: they occur frequently (daily or more often), with little thought or intent, and in the same place. In this category come many of the resource intensive behaviours relating to energy and water use, food choice, and also waste behaviours. Regular travel

[35] Bargh 1994
[36] eg. Aarts et al 1999

patterns are also obvious habits; some purchasing behaviours are less so, while leisure and holiday behaviours are rich areas for debate.

Measuring Habit Strength

The three-part definition also has implications for measuring habit as a construct. Measuring habit strength is important for designing interventions, as it can help to determine the type of intervention that is required, how much effort needs to be put into the intervention (both by the intervention agent and particularly the individual), and at what point the intervention can be stopped – either when the 'good' habit has become fully established, or the 'bad' one fully broken.

However, it is only relatively recently that social psychologists have developed ways of measuring habit, rather than just frequency of past behaviour. For instance, the Self Reported Habit Index (SRHI), originated by Bas Verplanken, measures habit using 12 items across a number of dimensions, including frequency and automaticity, and results in a single measure of habit strength[37]. This measure enables researchers to calculate the extent to which a particular behaviour is habitual for a particular person at a given point in time. In turn, this means the habituation process can be monitored over time, and also that differences between behaviours, and between individuals (in the extent to which they are prone to habituation) can be explored.

Such a conceptual tool brings myriad practical applications, some of which are discussed in the opportunities section below. Meanwhile academic work on the processes of habit formation is now well underway, as shown in the real-world experiments of Philippa Lally and colleagues, whose results are plotted as curves showing increasing habit strength over time. Where the curve peaks and then flattens out, the habit has become established, and the habit forming intervention can cease[38].

[37] Verplanken & Orbell 2003
[38] Lally et al 2010

Changing Habits

The three-part definition of habit provides an important foundation on which to base intervention techniques that will be appropriate in breaking and embedding habits. In essence, habit-breaking techniques are based on disruption: interrupting the flow of our automatic actions, and making us deliberate anew over our less conscious behaviour. Broadly there are two ways to do this: disrupting the person's automatic response, or disrupting the environment around them which cues that response. Three examples of effective intervention techniques grounded in psychological theory are briefly outlined below:

i) Unfreezing/Refreezing

The influential social psychologist Kurt Lewin worked on group dynamics in the 1940s and 50s; he defined habit not by its frequency, but by its level of "*resistance to change*". Lewin saw habits' quality of resistance as useful: habit ensured that our behaviour remained consistent, and thus was in line with group standards. If our behaviour deviated, then there would be the danger that we would be ousted from the group.

For Lewin, changing habits required first revealing, and then adjusting, the group standards which underpinned them. What has come to be called his 'Change Theory' is based on an unfreezing/refreezing dynamic during which underlying assumptions are lifted up to scrutiny, altered and left to fall back into everyday behaviour, to become new habits[39]. The unfreezing element can also be seen as a jolt, or "*emotional stir-up*" in Lewin's phrase, which "*breaks the shell of complacency*". This kind of dramatic disruption is required to kick habitual behaviours over from the automatic to the deliberative track. Naturally, for Lewin, given that group standards are what give habits their resistance, the unfreezing/refreezing process must take place in the context of a group (hence his adage "*a group decision*" is better than "*a good lecture*").

Many change programmes have been based on Lewin's Theory; in essence, this involves gathering a group of people together to discuss an issue they hold in common, before making commitments in front of the group to try adopting a new behaviour. In the pro-environmental sphere, it has been used most prominently

[39] Lewin 1951

as a framework to evaluate Global Action Plan's (GAP's) EcoTeams programme[40]. GAP's method is centred on using group discussion to change habits in and around the home. A recent evaluation report analysed focus group findings using Lewin's Change Theory in relation to behaviours including taking the bus (not the car), installing energy-saving lightbulbs, and avoiding excessive packaging[41]. The study found that the group dynamic helped to instill a range of new behaviours which quickly became habits (as one respondent said: "…*it just becomes your behaviour pattern then and you just sort of do it").*

ii) Vigilant Monitoring

Given habits are dependent on a stable context, then (as Wendy Wood puts it): "*shifts in the supporting environment can derail the automatic cueing and execution of old habits*"[42]. Psychologists explain the process by which a habitual behaviour occurs automatically using the concept of cueing. There is some debate among them over precisely how cueing occurs, but in essence a familiar situation or context is encountered, and that 'cue' triggers a mental representation of the associated behaviour[43]. Based on that mental representation, the habitual behaviour rolls out automatically – with no need for deliberate thought.

Changing the context in which a behaviour occurs disrupts the cueing process; as a result, greater deliberative effort is needed to undertake the behaviour in question, until new cues have been put in place. Hence avoiding places where unwanted habits have been learnt can be an effective technique, as can avoiding certain friends with whom the habitual behaviour has been learnt. However, given virtually anything can be a contextual cue, knowing what to avoid has its logistical difficulties. For that reason, interventions designed to interrupt the cueing process may work better by helping people to manage their cue-based responses when they occur, rather than trying to help people avoid the potential cues in the first place ('stimulus control').

[40] Hobson 2003, 2001; Nye & Burgess 2009
[41] Nye & Burgess 2009
[42] Ouellette & Wood 1998
[43] see eg. Aarts, Verplanken & van Knippenberg 1998

Wendy Wood and her colleague Jeff Quinn have recently undertaken experimental research based on the technique of 'vigilant monitoring', in which an individual pays heightened attention to his/her cue-based responses, with the aim of blocking the automatic process soon after the cue is encountered[44]. The technique involves training and practice; participants are encouraged to focus on the possibility of performing the unwanted habit, to think 'don't do it', and then to monitor their behaviour carefully to ensure that if the unwanted response is activated, the behaviour is not then performed. In Jeff Quinn's original research study, this vigilant monitoring technique was successfully applied to a range of everyday habitual behaviours which participants have selected (from snacking to feeling anxious); the results were then confirmed in a laboratory experiment based on learning automatic associations between words, and then using vigilant monitoring techniques to obstruct the new habits.

While vigilant monitoring was shown to be effective in both the real-world diary study and in the lab test, the researchers found that individuals could only keep it up for a limited amount of time. They point to other evidence that self-control is a finite resource and needs replenishing once expended (and different individuals also possess different levels of this resource[45]). These limits to conscious control argue for the prompt pairing of breaking and embedding techniques, in order to overwrite a new response onto the old cue, and thereby put in place a new habit. They give the example of dietary change, in which the habit of eating unhealthy snacks can be most easily broken if a new, healthy, snack is used to replace the old one – although the context around the snacking behaviour remains unchanged. Without a new response being grafted on to the old cue, there is a greater danger that the old habitual response will resurface sometime in the future. These findings suggest that practitioners should think about pairing breaking and embedding activities in the same intervention; habit breaking alone is less likely to be effective.

iii) Implementation Intentions

Implementation Intentions follow a similar process to vigilant monitoring, but instead of identifying old cue-based responses, individuals deliberately create

[44] Quinn et al 2010
[45] Muraven & Baumeister 2000 in ibid.

new ones. Implementation Intentions are simple 'if-then plans' which individuals adopt and rehearse, until new behavioural responses become habitual[46]. Individuals write their own plans, based on a deliberate response to a specific contextual cue (eg. taking the form 'if situation y occurs, then I will do z'). As such, the plans are designed to mimic the process of habituation, by linking the desired behaviour to a particular contextual cue.

Implementation Intentions have been shown to be particularly useful in overcoming the problem of 'getting started' with new behaviours, where good intentions are often insufficient. This is because Implementation Intentions are purposely designed to bridge the gap between intentions and behaviour. Psychologists recognise that there are two sorts of intentions: what we commonly think of simply as intentions are labelled 'goal intentions ('to do x'), and these can be distinguished from Implementation Intentions, which are intentions tied to a specific context ('if y occurs, then I will do z'). By focussing on the implementation intention, a more specific behavioural plan can be devised; because that plan links the desired behaviour to the context in which it occurs, it is much easier for the desired behaviour to become a habit. However, for the implementation intention to be effective, the more general goal intention must already be in place[47]. In other words, the effectiveness of this technique depends on the person already wanting to undertake the behaviour in question – they must be 'pre-motivated', so to speak.

Implementation Intentions have been proven to be effective for learning new behaviours which are to be undertaken regularly, such as taking medication, or performing health self-examinations[48]. They have also been found effective for developing habits in a range of environmentally-significant behaviours, such as using a new bus route, shopping at ethical shops, or recycling in the workplace[49]. However, recent research by Tom Webb has illustrated that Implementation Intentions may be less effective if the individual has stronger habits[50]. In that experiment, Webb chose to work with smokers who were trying to quit: Implementation Intentions were only found to be effective for those with weaker smoking habits.

[46] see eg. Gollwitzer 1999
[47] see eg. Gollwitzer & Sheeran 2008
[48] Orbell 2004
[49] Bamberg, 2002; Holland, Aarts, & Langendam, 2006
[50] Webb et al 2009

It is also notable that the participants in that experiment were pre-motivated, in that they were recruited through existing quitting programmes. This is in line with the theory, outlined above, that goal intentions must already be in place before Implementation Intentions can be introduced. Finally, while smoking is a particularly stubborn kind of habit (and physiological addictions are a specific class of habits[51]), it is possible to conclude from this recent work that, even when people can be encouraged to undertake intensive interventions to tackle their unwanted habits, the interventions themselves need to be dramatically disruptive if they are to help break strong habits. Further research on implementation intentions is underway, much of it in the form of action-based research monitoring the outcomes of pilot interventions[52]. This work will help us to understand better exactly how to deliver interventions of this kind, to whom, and for which behaviours they work best.

The three techniques above all have good evidence to support their effectiveness, gathered through work in real-life settings (or in lab-based experiments, in the case of the newest techniques). However, we should note that in many cases, that evidence does not relate to habitual behaviours with sustainability impacts (much of this work has been pursued in the health domain). All three techniques can be described as intensive interventions, in that they involve engaging the individual in a programme of self-change, and keeping them engaged in that programme. That is not to say all these techniques require additional resources; where individual or community-level programmes are already in place, each of these techniques could be introduced into the existing interventions relatively simply. For instance, the unfreezing/refreezing dynamic is familiar from well-known change programmes such as WeightWatchers (indeed, a respondent in the EcoTeams research commented "*It's a bit like people who go to Weight Watchers…"*[53]*).* Similarly, one of the main advantages of Implementation Intentions is that people need only make their 'if-then plan' once for the effects to be apparent for a long period into the future[54]*.*

[51] West 2006
[52] eg. Martin et al 2011; Varley, Webb & Sheeran 2011
[53] Nye & Burgess 2009
[54] see eg. Higgins & Conner 2003

However, there are theoretical limitations to attempting to change habits through the use of intensive interventions such as these. First, individuals need to be pre-motivated in order to get them in the room - that is to say they have to want to change. Second, they need to be kept in the room for the shortest time possible in order for the course to be effective. This because, as noted above, these intensive techniques tend to require people to exert heightened conscious control over their behaviour, at least for as long as the intervention is running. As it is known that individuals only have so much self-control available, keeping these intensive interventions short is likely to be critical to their effectiveness. However, where these conditions are met, the techniques have been shown to be effective, and if they are integrated into existing change activities, then additional costs for these interventions should be minimised.

It is also worth noting some potential downsides to these intensive interventions, from a policy perspective. First, scaleability: can these programmes be rolled out to enable habit change across the population, and how much resource (in time and money) would that take? This is perhaps a greater challenge for some techniques (eg. Lewin's group-based methods) than others (eg. Implementation Intentions). Second, inclusivity: if pre-motivation is required, what proportion of the population can be engaged in programmes of this kind? Third, breadth of spectrum: what strength of habits and types of behaviour can these self-change techniques work on (eg. good for commuting, less good for frequent flying – here Lewin's action-learning approach may have relative advantages).

A fourth avenue for intervention should be highlighted at this point; it is similarly rooted in the idea of disruption, but is not dependent on individuals' levels of pre-motivation.

iv) Moments of Change

Practitioners in health prevention have long recognised that there are key moments in the lifecourse which represent transitions from one lifestage to another, and that these key events can be sufficient to disrupt people's habits. For instance, Colleen McBride has identified a number of 'Teachable Moments' at which smoking cessation interventions achieve higher rates of success: such Moments include becoming pregnant, receiving a diagnosis of serious illness, or

hospitalisation[55]. Similarly, Jane Ogden has written about 'life crises' which are big enough to act as a trigger to change strong habits, for instance dietary change for those whose obesity has brought about critical ill health[56].

The evidence for the influence of key moments on increasing participation in sustainable behaviours is much more limited – and has recently been reviewed by a parallel Defra study to this one[57]. What evidence there is tends to have been gathered in relation to changing travel mode habits, in the context of moving house or job. One notable example is a study by Sebastian Bamberg, which was conducted among two groups of people who were relocating from a rural setting into the city; one group were subject to an intervention in the form of a free bus pass and personalised route planning information, while the other group received no intervention[58]. The study found that the intervention group were far more likely to change their travel habits – although it is notable that the study was not set up to test whether the same intervention would have more effect during a 'moment of change' than during a period of continuity. Bamberg's conclusion was that disruptive events, such as domestic relocation, lead to moments of "*conscious reflection*", in which habitual behaviours are brought under conscious scrutiny.

This finding is consistent with what Bas Verplanken and colleagues have called the 'habit discontinuity' hypothesis[59]. In this theory, the life event is presented as a *'window of opportunity'* during which individuals' sensitivity to an intervention is heightened. In a key difference from Teachable Moments in health, the discontinuity 'window' itself is not sufficient to trigger the change; instead it is the existing intervention which helps change the habit. Bamberg notably describes the relocation itself as "*the last push*" for those who were already considering changing their travel behaviour. There is then the possibility that habit discontinuities are prone to the same limitations as other intensive interventions, most obviously that individuals need to be pre-motivated to participate in the change programme. However, against that line of thinking, it should be stressed that the vast majority of individuals undergo life events, and they are forced to reconsider their habits, whether or not they are looking to change them.

[55] McBride et al 2003
[56] Ogden & Hills 2008
[57] Thompson et al 2011
[58] Bamberg 2006
[59] Verplanken, Walker, Davis & Jurasek 2008

Moments such as going to university, moving into your first home, getting married, getting pregnant and retiring all have the potential to act as 'windows' for habit change interventions. The central premise is that an intervention timed to coincide with one of these Moments will be more effective in changing habits than the same intervention delivered at another point in time.

Marketers are already experienced in delivering campaigns around key life events[60]. A striking example are the Bounty packs distributed to new mothers once they have given birth in hospital; these packs contain product samples (eg. disposable nappies), vouchers, and information – including some provided by the Department of Health. Also in the public sector, DWP have designed special mailings for people reaching 'big birthdays' (50 and 60) to encourage them to save for later life; such big birthdays are shown in research to be moments at which people review their lives to date, and the ways they would like to live going forward.

In the area of sustainability, Defra is currently undertaking experimental action research to explore the potential of such moments for supporting habit change. For instance, Defra has commissioned the National Union of Students to pilot a project which is designed to change the energy behaviours of undergraduates as they move out of family accommodation and into halls of residence for what is probably the first time in their lives[61].

'Moments of Change' is different from the three techniques outlined above in that the thinking on habits does not shape the intervention so much as inform its delivery. Here, the theory shapes the context of the intervention – its timing – not the content of the activities. From a practical perspective, the idea is that interventions may be more effective (and cost effective) if targeted at moments of change. There are some examples of existing interventions which marry both types of technique, for instance the delivery of personalised travel planning advice (an intensive intervention) to people who have recently moved into an area (as happens in some places under the TravelSmart programme[62]). Interventions based around Moments of Change highlight that context is critical; as such, while the academic work in this area has been mostly pursued by psychologists, the technique is consistent with

[60] Darnton 2009
[61] Whitmarsh et al 2011 (forthcoming)
[62] Sustrans 2008

thinking arising from practice theory. From a practice perspective, 'Moments of Change' could equally well be read as moments on people's life 'paths' at which change in routines inevitably happens, and at which such change can be accentuated.

3.3 Habits as Practices

So far, this report has provided an overview of social psychological theory on habit, in which habit appears as a factor in behaviour. To date, this is the more prevalent way of thinking about habit, and it shapes the way most interventions tackling habits are designed. Yet it is only half the story – practice theory provides another substantial body of literature which is becoming increasingly influential in current thinking about consumer behaviour[63].

This section looks at what practice theory has to say about habits, and explores the implications for practitioners. Instead of targeting individuals' motivations, practice theory calls for the rearranging of the elements that hold certain practices together. This approach does not depose that based in psychology, but provides a complementary strategy. Together, they enable us to develop an integrated suite of tools which can address habit on a number of levels (as developed in the Opportunities section below).

The key points in this section include that:

- Social practices are by their very nature routine, or habitual. They arise from the interaction between people and the structures of the social world – which are revealed in the practices themselves (hence practices are described as 'emergent'). The process of interaction between people and society involves feedback, and that looped quality means that all practice tends towards sameness, or put another way, is habitual. Instead of habit being a factor in behaviour, practice theory suggests that habit is behaviour.
- People are not the originators of behaviour, but the carriers of practices – and the practice goes on after a person has finished carrying it out. As such, people reproduce practices, which are relatively stable and recognisable entities (eg. we

[63] see eg. Ropke 2009; Gram-Hanssen 2010

all know football when we see it, and hence we can reproduce it in a relatively consistent manner).

- It follows from this that if we wish to change routine practices, we may not need to target individuals at all for some habits. Instead we should address the elements in the social world which support a particular practice. But we should remember that these elements are not causal factors ('barriers and drivers'); instead they are the emergent properties of the social world, revealed through the practice they sustain.

- Recent work in practice theory has boiled down the strands of a practice into just three elements:

  Materials *(objects, hard infrastructure)*

  Competences *(skills and know-how)*

  Images *(meanings, ideas and interpretations)*

  Take the example of the routine practice of daily showering: the materials include piped hot water, the competences include being able to run the boiler to get hot water at the right times, and the images include the importance of daily freshness (in order to fit in with everyday society).

  The implication is that changing habits involves reconfiguring the elements which make up the practice.

- While practice theory has a rich academic heritage, the drawing of that thinking together is relatively recent. This review has highlighted (and contributed to) current work in the field which is exploring how to operationalise practice theory in policy making for behaviour change. A simple tool for modelling the elements in a practice has been developed and tested during this project; it is presented in the Opportunities section below.

Putting Social Practices at the Centre

Practice Theory has already been introduced in this Review, as a school of thought sitting mostly in sociology, although based on a loose body of writing drawn from across a range of disciplines including philosophy, geography, and political

science[64]. Taking a practice theory perspective underlines that, whereas habit is a factor in behaviour – and some behaviour is not at all habitual – all practices are routine, and addressing habits means addressing whole practices, and the constellation of influences that contribute to them. This realisation is consistent with Anthony Giddens' starting position in setting out the Theory of Structuration[65]:

> *"The basic domain of study of the social sciences, according to the theory of structuration, is neither the experience of the individual actor, nor the existence of any form of societal totality, but social practices ordered across space and time."*

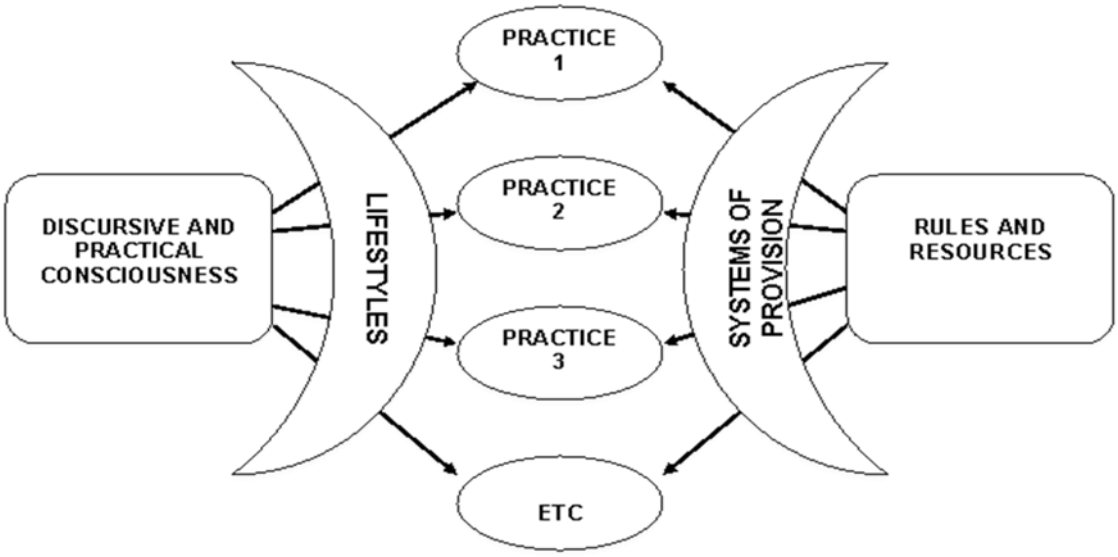
Giddens' Structuration puts practices at the centre of the field of enquiry, and shows them resulting from ongoing interaction between the individual on one side, and the rules and resources which we perceive in society on the other. The interaction between the two contrasting forces proceeds in a looped fashion (called 'recursiveness'), and this interplay becomes apparent in the practices themselves: hence practices give society structure. Giddens famously gives the example of language to illustrate this recursive process: "*When I produce a grammatical utterance I draw upon the same syntactical rules as those that utterance helps to produce*". This example shows how, unlike behaviour, practice does not originate from the individual, but emerges continually, as individuals carry on in social life.

Habits as Routines, People as their Creatures

The rather abstract Theory as set out by Giddens has subsequently been helpfully diagrammed as a 'structurationist' model by Gert Spaargaren and Bas van Vliet[66]:

[64] Reckwitz 2002
[65] Giddens 1984
[66] Spaargaren & van Vliet 2000

Figure 2: 'A Conceptual Model for Studying Consumption Practices', Spaargaren and van Vliet 2000



The looped or 'recursive' dynamic in which practices arise from interaction between people and the social world not only results in structure, but also tends to produce - or reproduce – sameness. Individuals necessarily act in the context of current social activity, and their default position is to reproduce that current order – "*developing habitual practices through recursiveness*"[67]. Put simply, we reproduce existing practices when we act, with the result that practices tend to retain a degree of sameness (hence we can also say they are recognisable). From this point of view, practices help define both ourselves and the society we live in – continually reproducing themselves, but with each rendition being ever so slightly different from that before.

From this Theory we can understand that all practices are routine, and habitual. The model above embodies Giddens' Theory in putting routine practices - or habits, for the purposes of this review - at the centre. The loopedness of the model is another fundamental difference; if we think back to Triandis' model of the Theory of Interpersonal Behaviour, we note that behaviour is pictured as being linear, going from a defined starting point to a new behavioural outcome. Furthermore, in that model habits feature as a factor, interacting with other factors to determine the end behaviour. But from the perspective of practice theory, habits are an outcome of human conduct, not a factor determining behavioural outcomes. Put another way, habit is not a barrier to behaviour – habit is behaviour. The important implication for

[67] Giddens 1984

policy makers and practitioners is that intervention strategies must seek to address the whole practice (where the individual and the social world meet), and not just that facet within individuals' motivation which makes them keep behaving the same. From this perspective, habit change is not about increasing an individual's conscious control over their behaviour.

At the same time as habits as practices move into the centre of our enquiries, so individuals move over to one side. Looking at the structurationist model above, the individual agent is shown on the left hand side. The model effectively subordinates the role of the individual relative to practices; the idea of individuals as 'carriers' of practice has already been introduced in this review, for instance in the footballing example. Writing in practice theory talks of people being 'recruited' to a practice, in which they become 'apprenticed', and subsequently develop a 'career'[68]. In this metaphor, the practice is acting like a company or institution, taking on new staff who will further its ends. This metaphorical language nicely captures the balance between people choosing their career, and people being led to take on the opportunities for meaningful work which are available to them. Ethnographic research in sociology has provided numerous examples of how individuals enter into, and become dominated by, specific practices, which go on to take up increasing amounts of their time, and claim a space in people's identities[69]. One of the clearest cases is in a paper on the practice of boating, or specifically 'loving' traditional wooden boats, in Finland[70]. The boats require so much time that one man even gives up his job in order to pursue the practice. It is examples of routinised practices such as this that enable Elizabeth Shove to write about "*the lives of habits, and us their creatures*"[71].

Getting Locked In to Routine Practices

The idea of 'lock in' – that individuals' choice not to undertake a particular behaviour is limited – has become well established in the context of sustainable consumption[72]. Practice theory shows us that individuals are not just locked in to routine practices by upstream factors (ie. features of the hard infrastructure, or how the supply chain is

[68] eg. Lave & Wenger 1991
[69] eg. Becker 1963
[70] Jalas 2006
[71] Shove 2009
[72] eg. Sanne 2002

organised), but by a combination of supply side and lifestyle influences. Looking at the structurationist model in Figure 2 again, we see practices as the result of a looped relationship mediated by lifestyles on the one hand, and systems of provision on the other. It is the interaction between the two – the looped relationship – which causes the lock-in, based on interdependence. It follows that we need to address the influences on both sides of that relationship, if we are to break the lock in and 'unlock' the habit.

In presenting the model, Gert Spaargaren stresses that we must aim for a balanced view of practices: not over-emphasising individual factors (lifestyle) or infrastructure (systems of provision) but the interaction between the two. In other words, individuals are locked in to their current practices not just by the infrastructure but by the practice itself, which at the same time they help to (re)produce. What emerges is a different explanation for habits, in which infrastructure is not regarded as a factor or barrier, constraining the individuals' choice to change, but in which the individual and the infrastructure (both hard and soft) are interacting, and the combination keeps the practice how it is. 'Bad' habits can then be seen as the product of a vicious circle, in which the rules and resources which bind the practice together keep getting remade as the individual (re)enacts it – just like Giddens' example of language.

In the sustainability sphere, we might think of commuting, in which how we make our daily journey to work goes on to constrain our chances of travelling by any other mode. For instance, the more I (and people like me) drive to work, the less space (and safe, clean space) for cyclists, and the less likely I am to cycle in future (I become 'locked in' to commuting by car). Indiviudals can also become 'locked out' of a practice through how other people reproduce it. For instance, the more that shopping at a farmers' market becomes associated with a particular lifestyle the less easy it is for people with different lifestyles to start using farmers' markets themselves. The practice of shopping at a farmers' market can become a barrier to more people using farmers' markets[73].

In order to break the lock in of routine practices, intervention is not a matter of removing external factors, or simply working upstream of the consumer (eg. by changing aspects of the supply chain). It becomes a matter of rearranging the parts, the rules and resources which make up the habit as routine. This strategy could at first glance seem similar to that arising from a psychological understanding of habit –

[73] Paddock 2009

change the environment around the person in order to disrupt the contextual cueing of the habit. However, in this practice-based approach, the environment is more than a trigger for the habitual behaviour, it is a strand intertwining with other strands which together create the habit. As so often, these differences may be worked out on the ground; both perspectives suggest that changing the environment will be required to bring about sustained habit change. However, a practice-based approach stresses that unless the change in the environment is also accompanied by a change in the underlying rules and resources then the habit may well live on.

Intervening in habits as practices is thus different from intervening in habitual behaviours, in that it involves reconfiguring the elements which come together in a practice – rather than lifting barriers and 'breaking habits', to unlock the behaviour change. In order to be able to intervene in habits as practices, we need to know what elements in a practice need to be reconfigured. Recent work in practice theory has led to increasing consensus about what those elements might be. Based on Andreas Reckwitz's work to draw together the loose body of writings on practice theory, Elizabeth Shove and colleagues have been exploring why everyday and 'inconspicuous' consumption behaviours are not only so environmentally-significant but also so entrenched. One such piece of work was undertaken with Martin Hand and colleagues in which they examined the practice of daily showering, which they describe as "*open, and fundamentally contingent*"[74]. Their analysis shows that people are 'locked in' to showering not by the material infrastructure alone (the bathroom equipment, the plumbing) but by that in combination with social conventions (about eg. bodily freshness) and temporal processes (eg. not having time to run a bath). It is the looped relationships between the elements that make the practice a habit, and hard to shift.

The 3 Elements in a Practice

Since that work, the definitions of the three elements in a practice have coallesced, such that they can be summed up as follows, and represented in the model by Elizabeth Shove below [Figure 3].

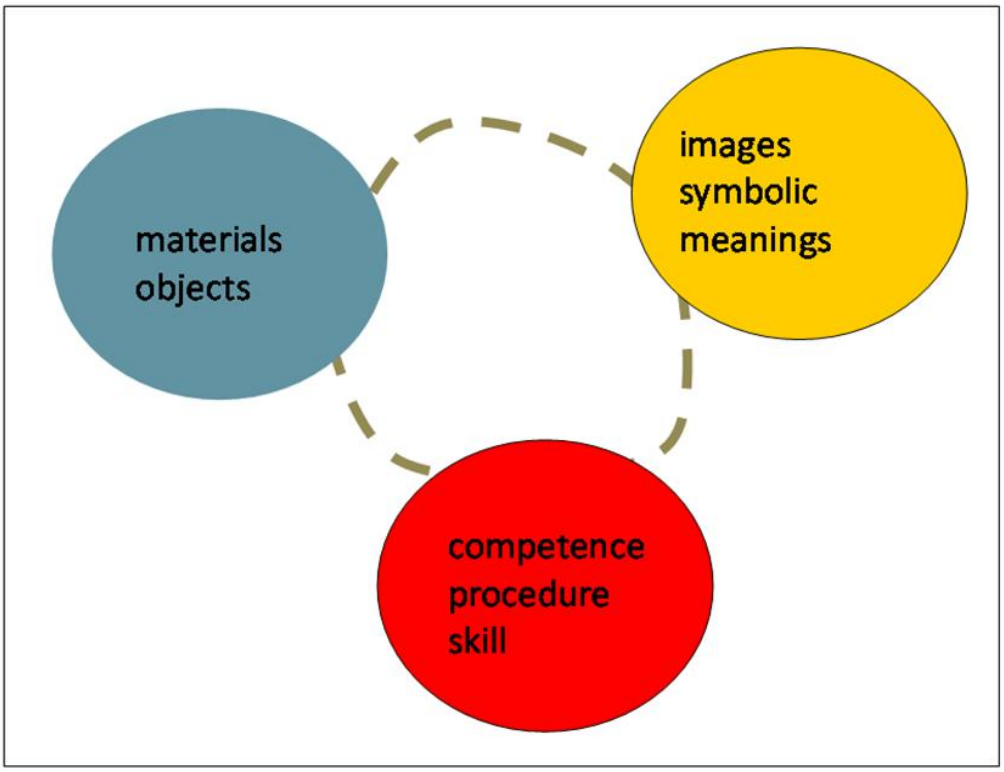
[74] Hand, Southerton & Shove 2004

Materials *(objects, necessary infrastructure)*

Competences *(skills and know-how)*

Images *(also ideas and interpretations)*

Figure 3: The integration of elements in practices as habits (Shove 2008)



Looking at the '3 Elements' model relative to the previous two models shown in this review – Triandis' linear TIB model, and the 'structurationist' model of Spaargaren and van Vliet - the circularity of the relationships between the parts is immediately apparent. The model expresses the non-causal relationship between the elements: rather than the behaviour arising as an outcome of the interaction between factors, here the practice itself holds the elements together – hence it appears as the grey circuit on the model. It is only in the doing of the practice that the elements cohere, and thus the practice can be said to be emergent: it is only revealed in the doing of it (just like Giddens' language). As such, the practice is only a provisional arrangement: the loop fixes it together, and also produces lock-in, but as discussed above, the practice is subtly different each time it is reproduced. As such change is already part of the process, although paradoxically, habits as practices are relatively enduring, being recognisable and reproducible.

From Behaviour Change to Transitions in Practice

Practices are always changing as the elements move in relation to one another; new configurations of elements bring new practices into being, and at the same time existing practices may fall apart. For this reason, it is more appropriate from this perspective to talk about 'transitions in practice' than 'behaviour change'; the formulation also includes a hint that intervening to change practices is an uncertain quest. Whereas in behaviour, a change intervention involves applying different external or internal stimuli (as 'drivers') to bring about different outcomes, in the realm of practice, where practices are emergent arrangements of elements which the actor is already implicated in sustaining, the shape of the intervention and the role of the intervenor are more ambiguous. First there is the practical problem of knowing how to catch hold of the moving elements, and with what force to work on them. Second there is the conceptual problem of the emergent nature of the practice, which means we cannot say that reconfiguring the elements will result in particular practices taking hold; we can only say that it will speed the rate of change, and bring about the conditions necessary to support particular practices[75].

Thinking about transitions in practice is recent and opens up new possiblities for policy making on behaviour change. Effectively the 3 Elements model is still on the drawing board, and the key texts to reference it against are still being written[76]. How to operationalise the 3 Elements as a device for structuring habit change interventions is still an open question, answers to which have been developed during the course of this project. Some of the suggested ways forward are identified in the next section.

[75] see eg. Shove 2008
[76] eg. Shove et al forthcoming

4. Opportunities

This review highlights a number of different opportunities for interventions designed to change habits in the context of sustainability. These opportunities arise from two different ways of understanding habit. While the theoretical basis for each perspective is distinct, the resulting intervention approaches fit together into a package which targets habit on many levels. This review argues that both perspectives are needed if we are to develop interventions which have traction with the many habits and routines which are currently hampering our progress towards sustainability.

Across the two theoretical perspectives, potential interventions can be identified in three different dimensions:

i) targeting individuals;

ii) targeting life events;

iii) targeting routine practices.

Work in these three dimensions can be seen as mutually reinforcing. In particular, provision should be made for those individuals who are already sufficiently motivated to undertake intensive habit change programmes. However, for the many people who are not pre-motivated, life events represent moments of disruption at which they must at least review their habits to some degree. Meanwhile, targeting practices similarly has the advantage of influencing the un-pre-motivated (through indirect approaches), while at the same time delivering the system change which is vital to enable and sustain habit change among all individuals.

The opportunities identified below in the three dimensions all represent emerging areas of work, building on the theory in this review. In some areas, like the transitions in practice work, this is new anywhere; in other areas, such as key life events, this work is not new anywhere, but is largely new in the pro-environmental field. As such these opportunities represent an exploratory agenda for developing interventions to change habits.

i) Develop interventions around individuals

The review has highlighted a three-fold definition of 'habit as a factor in behaviour', as follows:

Habit requires frequency, automaticity and a stable context.

From this definition, a number of practical possibilities flow: how to identify habits, how to intervene to change habits, and how to measure processes of habit change. Each of these capabilities arises directly from the theoretical perspective of habit as a factor driving behaviour, and leads to a number of practical opportunities for developing work on habit change.

- Develop pilot projects and supporting resources featuring Implementation Intentions

  The simple 'if-then plans' of Implementation Intentions have been shown to be effective in forming habits among a range of health behaviours, and also some pro-environmental behaviours. There is the potential to replicate these successes, and extend the technique to a wider range of pro-environmental behaviours. Based on research to date, these interventions are likely to be especially effective where existing 'bad' habits are not too strong.

  Further research is required to help inform the practical design and delivery of Implementation Intentions interventions, and explore issues such as:

  - Which pro-environmental habits would they be most effective at embedding?
  - How effective are they in breaking stronger pro-environmental habits?
  - What people, or methods, are best at teaching the technique to those who wish to undertake self-directed habit change?
  - How long should the Implementation Intentions intervention last, and how does that vary by behaviour and person?
  - How long do the effects of the intervention last? (longitudinal research would ultimately be needed to answer this question)

Implementation Intentions techniques could easily be built into existing change programmes. Any programme which includes intensive, face to face, activity could introduce a short task to encourage participants to write their own if-then plans. If built into existing programme in this way, Implementation Intentions require relatively light-touch inputs from programme managers: it can be sufficient for participants to form their 'if-then plans' just once, for them to have an enduring effect. Such techniques could have immediate benefits for programme managers whose participants have problems with getting started, or indeed, get easily derailed. A simple toolkit explaining the principles of Implementation Intentions, and providing a step by step guide to running such interventions, could be enough to enable practitioners to embrace this promising technique for habit change.

- Use habit strength to determine the right intervention mix

Defra's 4Es model has emphasised the need for policy interventions to comprise a 'package of measures'[77]. This package should balance the different tools at a policy maker's disposal (across each of the 4Es), until the intervention is ultimately strong enough to "break a habit and kickstart change". The Self Report Habit Index (SRHI), recently developed in social psychology, provides a tool to enable practitioners to work out how strong an existing habit is, and therefore what combination of tools to apply, and with what force, in order to bring about habit change.

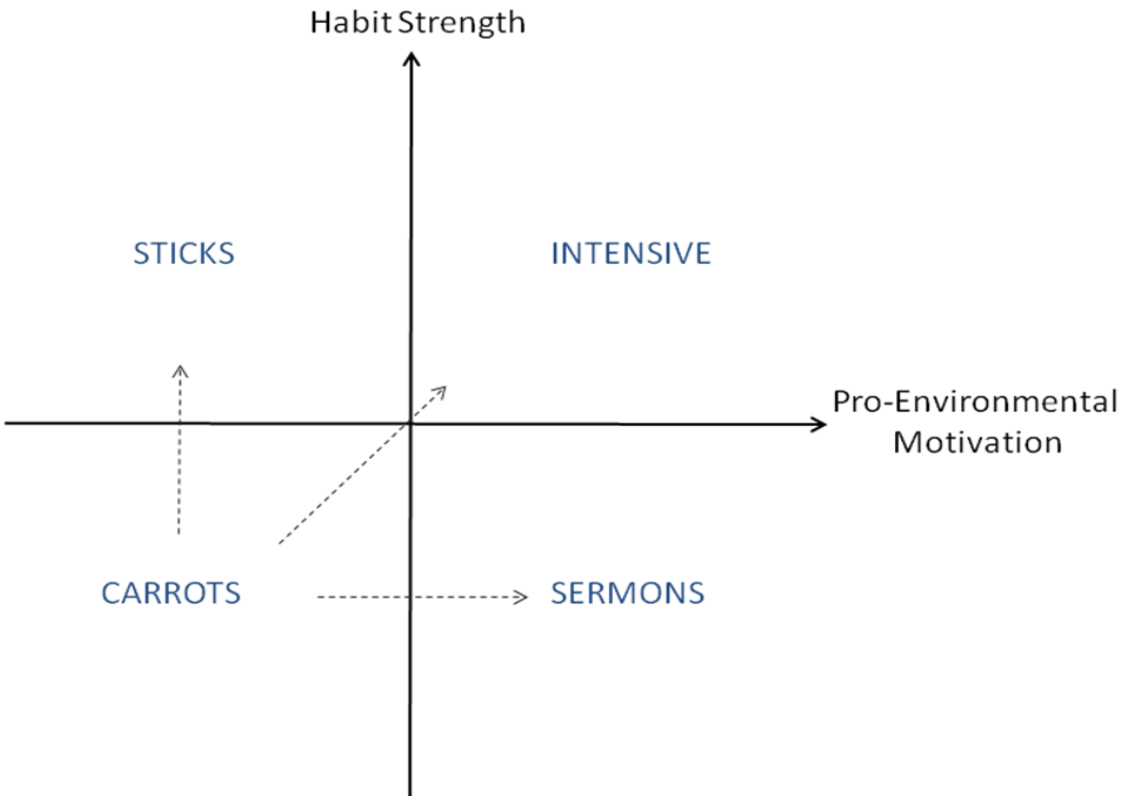
Habit strength could also be used to enhance the effectiveness of Defra's Environmental Segmentation model. The seven segments in the Defra model are often shown on a matrix which plots them against two axes of 'willingness' and 'ability' to change. Habit strength would provide an alternative measure against which to profile the segments' potential to change for specific pro-environmental behaviours. These two axes are shown in the figure below [Figure 4]. Instead of plotting the seven segments onto these axes, the figure shows the three main types of behaviour change tool (described as 'carrots, sticks and sermons' – after the early behaviour change report for Defra of the same name[78]). To these we have added the 'Intensive Interventions' of the type

[77] See eg. Defra 2008

[78] Demos/Green Alliance 2003

described above in relation to ‘Habit as a Factor in Behaviour’. This exercise demonstrates how habit strength could be a valuable addition in determining intervention design for different groups in the population.

Figure 4: Intervention Emphasis, by level of Motivation and Habit Strength



In order to create matrices of this type we would propose using the Self Report Habit Index (SRHI), to generate scores for each respondent and behaviour, and allow them to be positioned quantitatively relative to other respondents. The use of axes based on habit strength and motivation to change recognises the findings from the applications of theory-based intervention techniques, which show that individuals need to be pre-motivated in order to enrol in an intensive intervention, and in order to stay the course.

- Build habit strength into existing change programmes

  Building habit strength scores into practical projects by means of using the SRHI tool can have dual benefits. As researchers, it enables us to understand the role of habit, and how habits change, more fully. As practitioners, it allows us to monitor better how our programmes are working: by revealing how strong a habit a particular behaviour is for a given individual; and by indicating how the intervention is progressing, and ultimately when to stop (ie. when the pro-environmental habit is fully formed).

  Like Implementation Intentions, habit strength scoring would be a useful addition to a wide range of current change programmes which involve intensive face to face work with participants (for example the Global Action Plan programmes, which are already designed along Change Theory lines). Change programmes such as these would benefit from at least the initial use of the SRHI, to baseline the habit strength of their participants, and to tailor their interventions accordingly.

ii) Develop interventions around life events

The Review has found growing evidence to support the development of interventions delivered around particular life events. Most of the compelling evidence is in the health domain, although some also relates to habitual travel behaviours. Given these successes, there is strong potential for a programme of projects and research investigating the links between specific life events and pro-environmental habit change (both for breaking and embedding habits).

- Targeting projects around Moments of Change

  There is sufficient evidence available about how life events offer windows of opportunity for habit change interventions to recommend that existing interventions are redesigned so they coincide with key life events. For instance, practitioners in the community and not for profit sectors are currently delivering behaviour change programmes aimed at diverse audience groups. Timing some of these programmes to coincide with life events should maximise their effectiveness.

As well as increasing the uptake of sustainable behaviours, such projects could build further insights into the 'Habit Discontinuity Hypothesis', firstly by undertaking experimental designs with control groups to show that an intervention delivered around a key life event is more effective than the same intervention delivered at another time. Action-based research could also generate answers in context to questions around which intervention methods are best for a particular habit change, and with which groups; in addition, at precisely what points should they be delivered relative to the life event, and when should they terminate.

One challenge for any such projects would be to incorporate a sufficiently long follow-up element, to explore the extent to which the impacts of Moments of Change interventions stick. This need for longitudinal research applies to any work programme on pro-environmental habits.

Aside from the emerging evidence of their inherent effectiveness, an advantage to life events is that most people will experience most of the events at some point, and in all cases these will present 'windows of opportunity' for intervention, which do not rely on people being motivated around pro-environmental issues. Such work could extend Defra's reach into less familiar target groups, for instance across all segments of the Defra Environmental Segmentation model.

- Identifying Pro-Environmental Moments of Change

  To support the development of further projects targeting life events, additional research could be undertaken to look at evidence on which events could represent pro-environmental Moments of Change. This activity would be similar to work undertaken in the health domain, in the context of obesity[79]. Such a study could draw on the findings from current Defra projects involving Moments of Change such as leaving home for the first time, having a baby, and retiring from work[80].

[79] Darnton 2009
[80] op.cit.

iii) Develop interventions around routine practices

Of the three areas of practical opportunities proposed here, this is the most exploratory. As described earlier, the work on the practical applications of transitions in practice is still on the drawing board; what is sketched out here is a first opportunity to develop a programme of work to operationalise the emerging thinking on transitions in practice in a policy setting.

This potential way of working centres on converting the theoretical model of the elements in a practice into a practical tool for policy making. So far, this 3 Elements tool has only been used as a brainstorming device, or diagnostic to help policy audiences see behaviour 'problems' differently. However, it is also anticipated that the use of the tool could be extended into the design and delivery phases of habit change intervention. In this way the tool could introduce a new way of working on transitions in practice, as an approach to habit change.

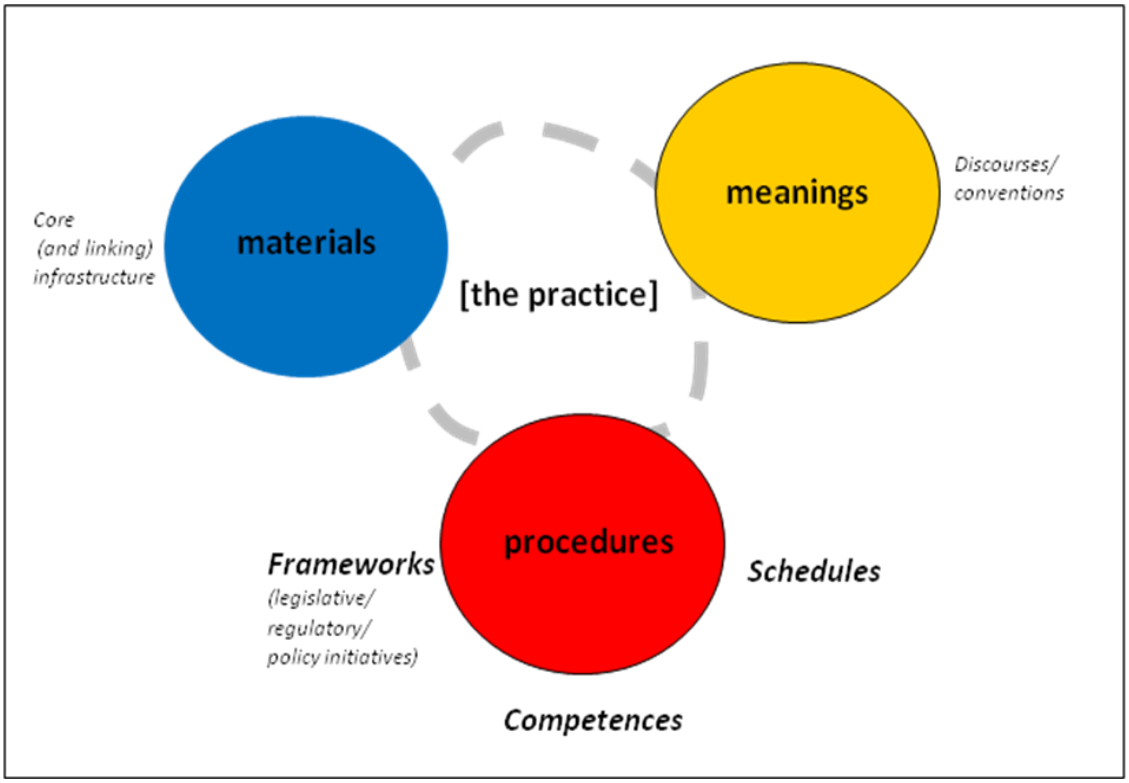
- The 3 Elements Habit Tool

  The potential value of the transitions in practice approach to habit change is best demonstrated through the simple use of the 3 Elements model as a diagnostic tool for mapping a particular behaviour change. This exercise has only been tried in a policy setting on a few occasions to date, but on each occasion it has shown its worth, by fostering a different view of existing behavioural 'problems'. What the model reveals is different because it is out of the normal run of behaviour change tools – coming from practice theory, rather than the 'habit as a factor in behaviours' approach. Thus the elements that are identified during the mapping process tend towards the systemic, and the socially-negotiated, which in turn imply the need for holistic and collaborative intervention approaches.

  The methodology for using the transitions in practice approach for habit change interventions has been developed as part of this Defra project. It centres on turning Shove et al's model of the circulation of the elements in a practice [see Figure 3 above] into the 3 Elements tool shown below [Figure 5]. The 3 Elements tool provides a template onto which the practice or routine can be mapped. In translating the conceptual model into a practical mapping tool, note that the red 'procedures' heading has been split out into three distinct elements:

- ‘Frameworks’ (regulatory/legislative arrangements, and relevant initiatives)
- ‘Competences’ (necessary know-how and emotional capacities)
- ‘Schedules’ (timetabling and other events which support the scheduling of the practice)

Figure 5: The 3 Elements Tool (Shove & Darnton 2010)



The mapping exercise involves engaged stakeholders specifying the practice in question and putting it at the centre of the model (recall that the practice is represented by the emergent grey circuit). The stakeholders then identify the specific elements relating to the practice in question, and plot these onto the model – the result being a ‘worked example’.

The development of the 3 Elements tool was begun during this Habits review, initially as a device for helping policy audiences to think differently about behaviour, and their options for bringing about behaviour change, but without them having to tackle the abstractions of the literature on practice theory head on. Since first being drafted, the tool has been tested and refined in brainstorms in a number of different policy settings, each time addressing a current policy problem.

For instance, in DfT the 3 Elements tool has been used to model the practice of mobile phone driving, in strategy development work for the Think! Campaign. Mobile phone driving has been identified as a priority area for road safety policy, with legislative measures having already been introduced, but to limited effect; the 3 Elements tool was credited with identifying different avenues for intervention.

Similarly in the Ministry of Justice, the 3 Elements has been used internally to inform understanding of volunteering behaviours (both formally, as in serving as a magistrate, and in the community, as in sitting on Neighbourhood Justice Panels). Here the model pointed to the need for cross-government working in order to achieve MoJ's objectives around Transforming Justice.

Meanwhile, the Centre of Expertise on Influencing Behaviour in Defra has used the 3 Elements tool to map the practice of line drying (as opposed to using the tumble dryer). The resulting worked example is reproduced in Figure 6. This worked example produced with Defra shows the different insights and implications provided by the 3 Elements approach. In this example, emotional and sensory aspects around line drying come to the fore, along with many interactions with the kit required for line drying (line, pegs etc.). These contributed to a sense of line drying as somehow old fashioned, as well as bound up with social status. The 3 Elements tool was also uniquely felt to focus attention on the temporal requirements of line drying – again underlining the sense that this practice was not central to contemporary culture. In sum, the model put whole lifestyle issues in the spotlight in a way not achieved by individualised models focusing on habit as a factor in behaviour.

The obvious downside to this diagnostic approach is that it is not empirical, and that it is therefore only as good as the people in the room. It is recommended that participants should be well acquainted with the evidence on the routine practice in question. It is also ideal if they can bring multiple perspectives to bear; given the headings of the 3 Elements (and the subheadings under ‘procedures’). It may be helpful to include diverse policy people, local delivery staff, engineers, designers, NGOs, communications specialists, media experts and academics, among others, in the mapping exercise.

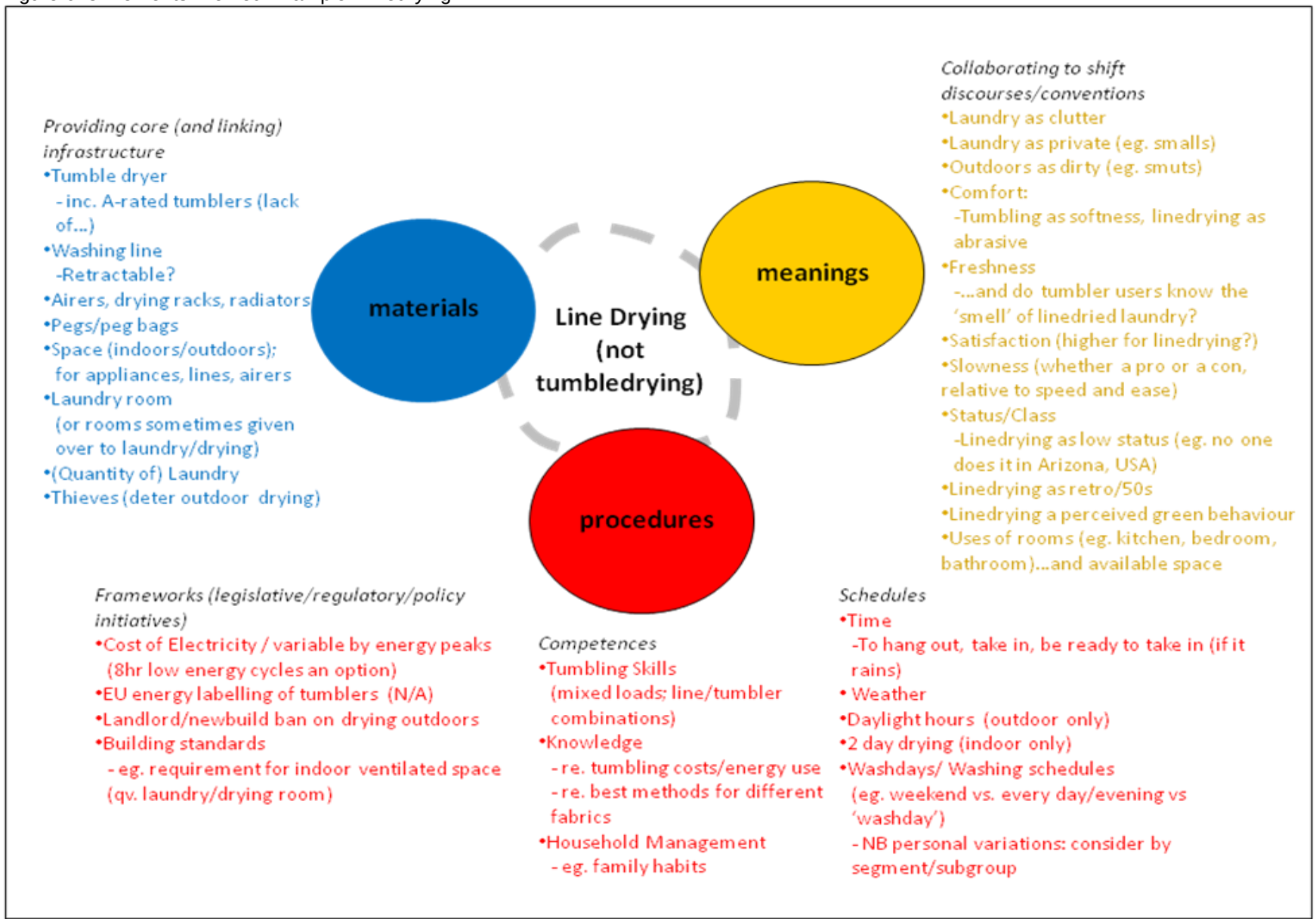
Having defined the practice in question, it may also be useful to try mapping the practice using a range of other behavioural models (for instance, social

psychological models like the TIB – see Figure 1 above). As this review has constantly highlighted, different models provide different ways of looking at behaviour 'problems'. Using the 3 Elements tool in a mapping exercise alongside the TIB, or the Mindspace tool from the Cabinet Office[81], could support the development of an integrated package of measures, working on multiple levels to tackle habitual behaviours.

In the transitons in practice approach, mapping the practice in question is only the first step. Having convened a set of stakeholders who each have some role in determining how the elements in a practice are set, it should then be relatively straightforward to encourage them to begin to take action on that practice, tweaking and tuning the elements which they are responsible for. For instance, using the example of line drying, architects and building firms, landlords and tenants' associations, and washing powder and other manufacturers – among many others – could each alter their own ways of working in order to influence the rate of change in the practice of line drying, and its levels of uptake in the population relative to tumbledrying. In this way, the 3 Elements tool could set in process a collaborative approach to intervention design and delivery, ultimately aiming to shift routine practices across society as a whole.

[81] Dolan et al 2010

Figure 6: 3 Elements Worked Example: Linedrying



It is worth adding a final point about resourcing. The current emphasis on behaviour change across government is tied to the immediate need for deficit reduction; hence, behavioural insight is positioned as a practical approach to getting 'more from less'[82]. The 3 Elements process for habit change answers this imperative: rather than requiring additional interventions (such as group discussion and decision, or information and incentives provided at Moments of Change) 3 Elements programmes involve identifying actions and elements which already support particular practices. In this approach, 'intervention' does not involve targeting individuals with extra activities, but collaborating with the various stakeholders who are responsible for the specific elements which are sustaining the practice in question. By encouraging them all slightly to change the way they work, big changes can be brought about in the routine practice in question.

[82] ibid.

5. Conclusions and Implications

This review has drawn on two distinct perspectives on habit: the ‘habit as a factor in behaviour’ approach and the ‘habits as routines’ approach. The distinction reflects differences between how psychology represents behaviour, and how sociology represents practices. The review has concluded that we need both perspectives in order to develop a full understanding of the workings of habit. Furthermore, if we have aspirations to bring about habit change, it is vital we can adopt both perspectives; if we design our particular interventions around only one perspective, it may be they fail, because the stickyness of habits is arising not from qualities inherent in the approach we have adopted, but because of attributes we had not accounted for, which are covered by the other perspective. Coming at the evidence on habits as it is now distributed across (and beyond) psychology and sociology, the challenge for us is to be multi-disciplinary: to adopt one perspective and then the other, not either/or.

If we are able to flip between both approaches, then we will be better able to respond to the challenges presented by different audiences and behaviours, and design our programmes accordingly. For instance, intensive interventions may work well for the pre-motivated, although they may struggle in the face of strong habits. Working with Moments of Change is likely to increase the impact of all kinds of intervention, for all kinds of people at a particular point in the lifecourse. Programmes based on the 3 Elements tool do not involve targetting any particular audience group directly, and should have an impact across the population through their efforts to reconfigure elements of the hard and soft infrastructure in the world around us. This final approach, newly developed in the course of this review, may prove particularly useful in designing interventions for less visible everyday behaviours – such as daily showering - which do not appear to most people to be a matter of choice at all.

The overarching implication for all those involved in developing or supporting habit change interventions is that they should be able to be interdisciplinary. This means understanding - and respecting - the differences between the two theoretical perspectives on habit (‘habit as a factor in behaviours’ and ‘habits as routines’), in order that they can flip between the two in diagnosing habit-based problems, and designing and delivering solutions. Ultimately this review recommends being able to

think differently about habits, and offers different models to help policy makers and practitioners do so. This recommendation is in line with existing guidance on behaviour change; for instance the GSR Knowledge Review on Behaviour Change advises taking a pluralistic approach, concluding that *"there is no one winning model"*[83].

Beneath this overarching implication for how practitioners should address habit change lie specific implications for different kinds of staff working on behaviour change strategy and delivery.

Implications for Policy

- When thinking about a behaviour change problem, try thinking about it as a habit change task. This will entail understanding the strength of the habit among the target audience and the likely force or intensity of intervention required to break it, as well as allowing for the time and resource required by individuals to make the changed behaviour habitual. Moreover, thinking of habits as routine practices means that in some cases individuals may not need to be targetted directly at all for some habits.
- Identify existing change programmes which focus on habitual behaviours, and explore the potential for them to introduce techniques such as Implementation Intentions or Moments of Change, as part of their current interventions. Community groups and civil society organisations working at grassroots level could be particularly valuable partners; ensure they are supported to deliver these techniques, and to think about habit change more widely.
- The review has shown that most of these 'intensive interventions' only work if people already want to change. Explore other methods of building this motivation to change, for example by using all four Es (engage, enable, encourage, and exemplify) to increase their involvement in community-based programmes for self-directed change.
- Adopt a 'habits as routines' perspective by using the 3 Elements model as a mapping tool early in the policy development process. Draw together resources and skills from different specialisms around those routine practices in which there

[83] Darnton 2008

are common interests, essentially, using habit change as a means of joining up within and across departments.

- Look at the impact of current policies on routine practices: save costs through doing things differently, rather than developing extra interventions to correct current trends.
- Continue to work with leading stakeholders across the prevailing system, and position policy in the middle of this constellation. Adopt the role of convenor in a collaborative process: supply the seed of the vision (but don't dictate change, or simply follow the changes of others).

Implications for Communications

- When developing campaigns around habit changes, think about the different roles that communications could play from a 'habit as a factor in behaviour' perspective:
  - To motivate individuals to participate in self-change programmes;
  - To support those already engaged in self-change programmes, eg. by providing physical prompts and reminders;
  - To provide a range of contextual cues for habit formation, through the use of ambient media.
- Work with Research to explore the role of communications materials in delivering interventions including Implementation Intentions techniques, for instance, exploring whether print or online training materials could be developed to support programme managers in introducing Implementation Intentions into their existing change programmes.
- Tie interventions to life events; work with Research to identify the best fits, and conduct further research to devise effective means of delivering messages around key life events.
- Experiment with the 3 Elements model in campaign development, as a means of identifying different messages, and different strategies for the role of messaging. Across different habits as practices, work with Research and Strategy to explore

the role of media, communications and marketing in developing shared meanings and images, and in attaching them to priority pro-environmental habits.

- Capitalise upon the ability of communications to shift discourses and generate collective meanings around habits as practices – rather than just to target specific behaviour changes through information or persuasion. Use the power of PR and media partners' channels to embed messages.
- Wherever possible, insert your understanding of the media into strategy and policy development across the department, in addition to developing effective campaigns. Using the 3 Elements model in cross-departmental mapping activities may provide an alternative means of bringing colleagues together early in the policy process.

Implications for Research and Strategy

- Continue to investigate the potential of life events ('Moments of Change') for increasing the effectiveness of interventions designed to bring about pro-environmental habits. Use primary and secondary research methods to address questions such as: which pro-environmental behaviour changes may be supported by which life events, and what is the relationship between the event and the intervention in bringing about habit change?
- Build SRHI habit strength scoring into existing action-based research and pilot programmes. Explore the applications and advantages of measuring habit strength in relation to specific priority behaviours, and investigate how habit strength correlates with, or cuts across, segmentation models (e.g. the Defra environmental segmentation model).
- Develop further action-based research projects incorporating Implementation Intentions, in order to refine understandings of their potential for pro-environmental behaviour change. Also build in learnings from current projects using Implementation Intentions, especially regarding the logistics of delivering such interventions. Use these insights to develop an Implementation Intentions toolkit for practitioners (with communications staff, as above).
- Continue to use action-based programmes of research as the primary means to advance understanding of how to deliver pro-environmental behaviour change,

here in the context of habit change. Employ multiple theoretical perspectives on habits, including bringing them together within specific interdisciplinary projects.

- Vitally, increase the use of longitudinal surveys in order to track habit change over time, including beyond the active phase of the habit change interventions themselves.
- Adopting the ‘habits as routines’ perspective, undertake desk research to map the influences of current policies on particular environmentally significant behaviours: what hard and soft infrastructures do the policies put in place, and in turn what routine practices do they contribute to?

Annex A: Advisory Group

An advisory group was convened at the start of the review, and ran throughout the project. Their first task was to contribute relevant evidence to the literature review; they then attended the advisors' workshop. 20 advisors were included, divided into academics and practitioners.

No.	Area	Organisation	Researcher
1.	Environ	Surrey	Birgitta Gatersleben
2.	Environ	Lancaster	Elizabeth Shove
3.	Health	Essex	Sheina Orbell
4.	Health	UCL	Susan Michie
5.	Health	Surrey	Dick Shepherd
6.	Obesity	UCL	Pippa Lally
7.	Food	City University	Geof Rayner
8.	Travel	ITS Leeds	Ann Jopson
9.	Energy (domestic)	ECI Oxford	Sarah Darby
10.	Waste	(UEA) EA	Mike Nye

No.	Area	Organisation	Practitioner
1	Household (general)	GAP	Trewin Restorick / Scott Davidson
2	Comms	Futerra	Solitaire Townsend
3	Community	WWF	Niamh Carey
4	London	LSx	Gayle Burgess
5	Local Authority	Hants CC	Bryan Boult
6	Waste	Kent Waste Partnership	Paul Vanston
7	Water	WaterWise	Jacob Tompkins
8	Energy	NESTA	Pete Capener
9	Food	Co-op	Paul Monaghan
10	Travel	TFL	Ben Plowden

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Nobel House
17 Smith Square
LONDON SW1P 3 JR

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