Influences on consumer behaviour

Policy implications beyond nudging

Katharina Umpfenbach and colleagues

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1 Introduction

If our starting point for policy is that individuals' actions (at work or at leisure) are the prime causes of good or harmful environmental outcomes, then policy is all about behavioural change. That change is either about:

- The individual's choice of desirable outcome; or
- The choice of alternative ways to achieve that outcome.

So naturally, many policies try to restrict available choices: prohibiting the undesirable outcomes, or the more harmful ways (e.g. technologies) to achieve outcomes.

Others - usually where it is not politically possible to limit opportunities - try to promote better, alternative ways to reach goals: the uptake of less harmful technologies or more efficient behaviours, or changes in individuals' views of what is a desirable outcome.

The scientific literature research on the influences on individual actions is highly relevant to this second group of policy, particularly on:

- The design of policies and mixes of policies to be effective, or more effective; and
- The potential scope and limits of policy action attempting to change behaviours;

The next section summarises the most relevant insights from the literature, and the implications for policy making. There implications are far-reaching and broadly applicable for existing and future policy, and the note builds up the implications step-by-step.

This note gives some examples of potential new or revised policies intended to illustrate the types of novel policy which the science suggests would increase delivery of environmental goals. These potential policies are described in Section 4.

The lion's share of the research presented in this briefing has been carried out in the UK where in co-operation with universities and specialised research institutes both DEFRA and the Scottish Government have driven this research agenda forward. This means that the findings need to be tested in other Member States and the illustrative policy examples presented here need to be adapted to national circumstances (and in some cases might not be transferable). Nonetheless, returning to the fundamental question what drives behaviour and how change in behaviour might come about appears to be a useful strategy for more effective policy-making independently of national circumstances.

2 Research into behaviours and its insights for environmental policy making

2.1 Reconsidering information provision

It is a truism that when individuals do not have information (e.g., about environmental effects), that information cannot influence their decision. This has led to many policy interventions which supply information (e.g., energy labelling), which have had some success and some failures.

Yet, the common premise that 'informed people make the right choices' is not supported by the evidence[1]. The body of scientific work on influences on behaviours refutes the simplistic economic, rational view of decision making which is often relied upon. Evidence shows that provision of more information can sometimes reduce consumers' ability to make satisfying choices. For example, people can wilfully ignore negative aspects of purchase consequences which create blocks to additional information about those consequences being taken on board in choices[2].

Most decisions are fundamentally complex, with large numbers of choices, uncertainties about outcomes and many different wants, aversions and needs to balance. Different streams of research now inform policy making aiming at behavioural change, as described below.

2.2 Biases in decision making processes

2.2.1 Research

The experimental literature coming out of behavioural economics looks at the ways in which people almost always, without knowing it, use mental and emotional short-cuts to make complex choices. This is relevant because this can lead to biases in choices and shows ways in which the framing of a choice influences decision outcomes. The most important biases in decision-making include:

- Habits and routines are very influential, particularly for behaviours repeated daily in a semi-automatic fashion. Past experience, emotional associations and brand recognition are strong influences.

- The salience of information - the extent to which it is at the front of someone's mind - and the relative importance given to it, matters for decision making. It varies greatly between pieces of information and can be influenced by timing and presentation.

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[1] Centre d'analyse strategique de la Republique Francaise, 2011, Green Nudges: new incentives for ecological behaviour.

[2] Defra, 2012. The industrial emissions Directive: further background information. Department for Environment, Food and Rural Affairs, London.

- Consumers use 'anchoring' to deal with differences in price or other characteristics. Many pursue value (or a bargain), and compare to alternatives or past knowledge.

- Consumers place greater value on the immediate future and heavily discount future costs or savings[3].

- Complexity can lead consumers to avoid making a decision (and so stick with current practices).

- Consumers have an aversion to loss, so value products more once they own them.

2.2.2 Implications for policy

This evidence leads to one set of implications for environmental policy-making. Most importantly, it suggests that **all policy interventions aiming to provide information might be re-assessed** against alternative ways to achieve their goals, bearing in mind insights into what usually influences decisions, such as the manner in which information is conveyed. This would include: information campaigns, labelling, pricing standards, consumer advice including websites, formatting of corporate information, and even ministerial statements. Policy could be more effective when it is designed to take into account bounded rationality, bounded will-power and bounded self-interest.[4]

Current views on the cost-effectiveness of information campaigns could be revised, with consequences for the resourcing of these interventions. It is likely that the performance may be much higher or lower than expected, depending on design.

2.3 The influence of motivations, norms and world-views

Much research acknowledges the role of the attitudes and values of individuals in shaping choice preferences. This would suggest that changing the values of consumers leads to changes in consumption patterns. The research shows that it is not that simple.

2.3.1 Research

The **motivation to protect or improve the environment is rarely the primary motivation** for people's pro-environment behaviours, but may run concurrently. Many 'environmental' behaviours which are observed turn out to be motivated by desires to save money, promote health, avoid waste, be seen favourably by others, or by a sense of justice.

Sociologists have categorised the drivers for behaviours by the fundamental needs or wants which they satisfy, e.g., subsistence, protection, understanding, participation, affection,

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[3]   Shogren, J., 2012. Behavioural Economics and Environmental Incentives. OECD Environment Working Papers 49. Organisation for Economic Co-operation and Development, Paris.

[4]   Shogren, J., 2012. Behavioural Economics and Environmental Incentives. OECD Environment Working Papers 49. Organisation for Economic Co-operation and Development, Paris.

creation, leisure, identity, freedom[5]. The drivers for behaviours with positive or negative environmental impacts can be seen to come out of the satisfaction of these needs.

Some researchers believe consideration of indirect environmental problems - like climate change, or excess use of resources - leads to a sense of powerlessness[6] or is linked to the negative perception of free-riders gaining advantage. This is more likely to lead to (unpleasant) environmental considerations not being taken into account.

People are diverse in their attitudes and motivations. There are ways to **categorise people by their attitudes and behaviours in relation to the environment** which can help in policy design, although it may be misleading in that it gives too much prominence to the environmental attitudes of people as a guide to drivers of their behaviour. For example, in the UK's model of attitudes, 18 % of the population may take some pro-active pro-environmental steps, whilst 18 % will consciously ignore any impacts[7].

The hope or belief that taking small pro-environmental steps (like separating waste or turning out lights) will lead people to larger pro-environmental behaviours is unsupported by the evidence. A study in the UK found **no correlations between a person undertaking a green behaviour and undertaking another**, or correlations were very weak[8]. Thus, although it may be that a pro-environmental behaviour helps people feel that 'greenness' is part of their identity, the evidence suggests that this idea of 'being green' in relation to one behaviour may give an individual a feeling that they 'have done their bit' for society and so allow them to engage in other behaviours with negative impacts. However, this may just be another indication that pro-environment beliefs are not necessarily related to behaviours.

Indeed, there is a **large gap observed between environmental motivations and behaviours**: for instance, the highly educated social group with highest concern for the environment is the social group with the highest environmental impact per person (mainly because they have higher incomes, and so opportunities).

There is a line of thought that behaviours originate in the worldview through which people perceive how to satisfy their needs and motivations. Research has found that **pro-environmental behaviours correlate with stronger intrinsic values** linked to the well-being of others, such as those held by religious groups[9]. Much of mainstream culture, particularly marketing, promotes extrinsic worldviews focused on status, consumption and wealth. This can be seen as holding back pro-environmental behaviours.

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[5]   Defra, 2012. The industrial emissions Directive: further background information. Department for Environment, Food and Rural Affairs, London.

[6]   Weber E., 2006. Experience-based and description based perceptions of long-term risk: why global warming does not scare us (yet), Climate Change 77 (1-2).

[7]   Defra, 2008. A framework for pro-environmental behaviours. Department for Environment, Food and Rural Affairs, London.

[8]   Austin, A., Cox, J., Barnett, J. and Thomas, C., 2011. Exploring catalyst behaviours. A report by Brook Lyndhurst for Defra. Department for Environment, Food and Rural Affairs, London.

[9]   Natural Scotland, 2013. Low Carbon Scotland: A Behaviours Framework. The Scottish Government, Edinburgh.

Consumers are heavily influenced by other people and social norms: the impact of information can be overridden by social pressure, such as persuasion by sales people. Also, people find it stressful to live completely different from their peers. Marketing, in all its forms - advertising, promotions, packaging, product placement - seems to have a strong influence in forming social norms and so influencing behaviours.

Attitudes and motivations differ greatly between circumstances. For example, people assume different roles in the workplace than at home and often apply a different set of motivations.

2.3.2 Implications for policy

Given that environment is rarely the primary driver for behaviours, it is likely to be more effective to **build pro-environment behaviours through the use of stronger drivers for action like social justice, health or children's wellbeing** rather than with people's environmental motivations[10].

Trying to influence behaviours with messages that highlight environmental benefit is only likely to be effective when those messages complement existing perceptions, rather than challenging them, e.g. that higher quality foods are already believed to have higher environmental standards because they are not cutting corners.

Policies aiming at changing behaviour need to recognise that the variety of different attitudes may lead to different responses from different groups. This implies that non-regulatory policies might need to be targeted to specific attitudinal groups, for which policy makers would need an understanding of the relevant attitudes and values. In the UK, several government departments have constructed 'segmentation models' of their population, identifying attitudinal groupings which may respond differently to policy (like the idea that some people are 'early adopters' of technology).

The diversity of behavioural drivers in the population may suggest that the most a behavioural policy can aim at is a change of behaviours of a certain group, and this in turn suggests **a strategy which supports 'niche' behaviours** some of which might spread more widely and support the spread of technological and social innovations.

The **link between pro-environmental behaviours and intrinsic value sets** (pursued as an aim in itself like friendship and linked to the well-being of others) has an implication for campaigns trying to increase pro-environmental behaviours. If they do so by appealing to extrinsic values (pursued as a means to secure recognition from others like status or monetary gains), this may have longer term trade-offs. To the extent that the campaign has an influence on worldviews, it could re-enforce unhelpful extrinsic worldviews.[11] In practice, this could mean e.g. to reconsider messages that focus exclusively on cost savings.

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[10]   Natural Scotland, 2013. Low Carbon Scotland: A Behaviours Framework. The Scottish Government, Edinburgh.

[11]   WWF, 2008. Weathercocks & Signposts. The environment movement at a crossroads. World Wide Fund For Nature, London.

An opposing view posits that **the search for status and with it conspicuous consumption are nothing but sexual signalling**, a powerful natural force that cannot be eliminated. Instead efforts should aim at substituting the material-intensive status goods currently used for sexual signalling. Popularity ranking in social media is proposed as a viable replacement[12]. The underlying assumption is that popularity in social media is not linked to material consumption in the real world. It is at least doubtful whether the data would support this. In addition, even though a framing focusing on intrinsic values might indeed not be helpful with certain consumer groups, the described shift in sexual signalling would also require a shift in values and is thus implies a challenge similar in nature.

Given the influence of social norms on behaviour, **policy can directly target these norms rather than targeting the environmental outcome**. An example is Japan's Cool Biz Campaign. It implemented a new office dress code without ties and blazers accompanying an increase in indoor temperature. As a result, energy use for air conditioning could be reduced[13].

To **help social norms form around 'unacceptable' levels of environmental harm** (resulting from behaviours) policy makers might need to create a sufficiently simple and communicable standard of environmental performance. At the moment, on most issues, there are no widely communicated social norms on what is acceptable or unacceptable (e.g. on vehicle size or flights per year). Energy labelling e.g. tends focuses on energy efficiency per unit, but has no in-built upper limit of appropriate fridge, house or car size.

2.4 The influence of situations

Evidence from neuroscience, social sciences and the results of policy trials support a theory which describes inherent links between behaviours and the situations in which they take place. This has significant implications for what policy should aim to achieve.

2.4.1 Research

Physical, social and emotional situations prompt habitual behaviours, automatic responses, behaviours based on emotional reactions and sub-conscious responses. Around 1-5 % of behaviours can be considered to be consciously calculated[14], and even these are also heavily shaped by situations and non-rational factors. This evidence significantly downplays the common (self)perception of people as being mentally in control of decisions and behaviours.

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[12] Townsend, S., 2013. The naked environmentalist. Futerra, London.

[13] Southerton, D., McMeekin, A., Evans, D., 2011. International Review of Behaviour Change Initiatives. Scottish Government Social Research, Edinburgh.

[14] Martin, N., 2008. Habit: The 95 % of Behaviour Marketers Ignore. Financial Times/ Prentice Hall, London.

Many researchers[15], including the behavioural experts within the UK's Defra, now see **behaviour from the perspectives of practices**, where a practice (e.g. cooking, or showering) is constituted by three types of elements: materials, competences and meaning, each of which is an essential influence on the behavioural outcome. 'Materials' refers to the physical infrastructure and objects present, which could, for instance, trigger a habit. 'Competences' refers to skills and knowledge needed, for example knowing how to mix ingredients together for cooking. 'Meaning' comes out of values and needs and can include aspirations to lead a healthy life, be free of traffic or environmental values.

This research helps explain **why behaviours are usually 'locked-in' to patterns tied to social norms, skills and physical circumstances** (surroundings and objects). Many of the behaviours with greatest environmental impact are habits, repeatedly taking place within repeated situations (e.g. showering). 45 % of behaviours are undertaken in the same place every day.[16] Just as use of a particular product might be 'locked in' because someone is in the habit of using it, the habit is 'locked in' by the regular availability of the product, or recurrence of the same physical or social situation.

Infrastructures are a means to shape practices and social norms. City and land use planning is a case in point. A city that clearly prioritises walking, cycling and public transport over cars embeds low-carbon transport as the 'normal' behaviour into the city's lay-out.

Change in social practice is understood as emerging from the co-evolution of infrastructures, technologies, competences and social norms in a continuously ongoing process that cannot be controlled by any one actor but only influenced. Policy makers can stimulate favourable change to these practices or support alternatives that fulfil similar purposes.

Practice theory shifts the focus from individuals to groups of people engaging in any one practice, emphasising previous findings that behavioural change tends to happen in social groups. This raises questions on how to influence social groups. An evaluation of behavioural change projects in the UK found that projects were particularly effective where they worked with existing social groups or communities and built on their activities. The successful ones involved face-to-face contact, repeated interactions, good leadership, support and were well-targeted to specific audiences.

Many decisions with environmental impacts are made within organisations, from SMEs to governments. The norms, standard practices, rules and expectations surrounding an individual within the organisation shape the outcomes. These may do so by strongly influencing individual incentives, or effectively limiting choice, e.g. budgeting rules which lead to short-term investment savings at the expense of future energy efficiency savings.[17]

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[15]   Shove, E., Pantzar, M., Watson, M., 2012. The dynamics of social practice: everyday life and how it changes. SAGE, Los Angeles.

[16]   Neal, D., Wood, W., Quinn, J., 2006. Habits - A repeated performance. Current Directions in Psychological Science, 15, 198-202.

[17]   This is studied by the fields of Institutional Economics, Organisational Science and Management (see Annex).

2.4.2 Implications for policy

This research implies that influencing behaviours and choices should start with the idea that behaviours come out of circumstances, and so **changing the circumstances is often a necessary element for changing behaviours** or can be effective on its own. For instance, removing trays at a self-service restaurant on a university campus reduced portion size chosen, and reduced food-waste by 50 %.[18]

Given the strong role that habits and prompts from physical surroundings play in shaping behaviours, **changes in the infrastructure** where a practice (or behaviour) takes place appears to be key for facilitating behavioural change. This goes beyond the effect that would be expected merely by the infrastructure being available, affordable and convenient (which are preconditions). The visual and social indicators of the behaviour can influence uptake. Examples include:

- The increase in uptake of cycling in cities (like Paris, Brussels and London) that have installed public bike schemes, resulting in greater use of private bicycles, in addition to uptake of the public bikes[19].

- Breaking existing habits by limiting or changing availability, e.g. the reduction of easily accessible or convenient parking; or

- Creating additional physical prompts which help trigger pro-environment behaviours. For example, this has been applied in the inclusion of arrows on car dashboards indicating that the driver should change-up their gears to save fuel.

To break entrenched habits, policy **can provide prompts for change in moments of transition in people's lives** like moving house, having a baby, changing jobs or building a home. This has been successfully applied to create new, more sustainable habits. Examples include gifts of temporary free passes for public transport to new residents moving to Pennsylvania and Munich[20].

As social influences are strong, **the advice of people seen to have more credibility or importance can be very influential**. This includes people who have a role in advising consumers on purchases, including sales persons, architects, home tradesmen (e.g. plumbers) who influence consumer choices on heating boilers, home energy infrastructure, cars, and electronic goods. Finding ways to inform these people of their role and aligning their personal incentives with the sale of more environmental goods and services is likely to influence choice and so future behaviour.

The strong influence of **social norms** suggests a need to work with existing social groups to create new norms in those small groups, or to portray the existence (or transformation) of a

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[18]   Oullier, O., Sauneron, S., 2010. Improving Public Health Prevention with Behavioural, Cognitive and Neuroscience. Centre for Strategic Analysis, Paris.

[19]   Dolan, P., Hallsworth, M., Halpern, D., King, D., Vlaev, I., 2010. MINDSPACE: Influencing Behaviour through Public Policy: Practical Guide. Cabinet Office, London.

[20]   Southerton, D., McMeekin, A., Evans, D., 2011. International Review of Behaviour Change Initiatives. Scottish Government Social Research, Edinburgh.

social norm. Law also serves as an influential instrument for policy to shift social norms as a major element shaping social practices. For example, to signal its preferences for using products longer, the EU could work on strengthening consumer rights with respect to warranty, reparability, and availability of spare parts or refills.

Where behaviours take place inside an organisation, the values and habits of an organisation, even when not formalised, can be equally influential in final outcomes. This suggests that **policy instruments targeting institutional arrangements** may be useful in changing consumption patterns.

3 Using behaviour research for each step in the policy-making process

The insights into influences on behaviours are particularly helpful at explaining the barriers and causes of resistance to change. For any pro-environmental change desired by policy makers, they help explain why resistance could come from:

- The ways in which short-cuts are used to make decisions,
- The interplay of the range of drives which influence behaviours (like drives for social belonging, or the re-enforcement of identity),
- Lock-in to habits, situations and social norms.

Based on this, policy makers can:

- Identify the complete set of barriers to change,
- Better design a set of policies which can bring about change by working with the multiple drivers of behaviours,
- Judge how much change this may realistically stimulate considering how many of the barriers can be tackled or the existence of opposing drivers of behaviour, e.g. trends in social norms or marketing.
- Better prioritise interventions, either to particular areas of societal change or to change in particular segments of the population.

The insights can also strengthen policy makers' attempts to introduce environmental policy, providing a stronger intervention rationale and a perspective on some of the drivers of anti-environment political positions.

3.1 Reviewing the range of behaviours to influence

To influence behaviours, policy can **start from a map of which behavioural changes are sought**. (Defra has produced such a map.) Alternatively, using a practice theory perspective would suggest drawing up a list of the everyday practices which could become more sustainable and the elements required for this to happen.

This list can be used to **prioritise where to put in policy effort**. Research indicates that past attempts to change behaviours often aren't the ones which have the largest impact. For example, for domestic energy saving, turning the thermostat down by 1 degree and wearing a warm jumper at home might save 22 TWh of energy, whilst washing clothes at 40 degrees or less may only save 0.4 TWh a year (UK data).[21]

3.2 Framing the policy question

Knowledge tools can help describe the many influences on people's behaviours, to help policy makers consider interventions. E.g., the Scottish Government has developed the ISM

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[21] Palmer, J., Terry, N., Pope, P., 2012. How Much Energy Could Be Saved by Making Small Changes to Everyday Household Behaviours? Cambridge Architectural Research, Cambridge.

tool building on the practice theory research and case study evidence. This conceptual model is aimed to help policy-makers to **design effective behaviour change interventions that work simultaneously on the individual (I), social (S) and material (M) contexts**[22]. A related DEFRA map of behavioural drivers is in the Annex.

The evidence on behaviours has implications beyond policy design. It questions the framing of the policy approach to changing behaviours. The practice theory approach to behaviours suggests that the question 'How do we influence individuals to change behaviours and so environmental outcomes?' is usually based on an assumption that individuals make independent choices. However, this does not match how most behaviours come about.

Taking practices as the central unit of behaviour, rather than the individual, gives a different view on consumption choice. It implies looking at the role which the practice plays and finding suitable substitutes which better satisfy the same drivers. For example, a vacation serves several purposes, most of which need not involve a long-distance flight. In many cases, it implies looking at changing the behaviour of social groups rather than individuals.

3.3 Factors affecting how successful a policy intervention may be

The interrelation between drivers of behaviours and people's natural tendency to behave habitually usually leads to **significant inertia in behaviours**. Evaluation of behavioural change projects in the UK found that even when working in groups, people really only made small, easy, simple changes. They were put off by actions which would change their lifestyle or involve significant trade-offs with other drives and desires[23]. They were also put off by complexity.

This perspective suggests that it might be more promising to aim for replacing existing practices with more environmentally-friendly ones. To trigger such substitution **certain elements of the unsustainable practices could be restricted** while providing attractive alternatives. An example is limiting city parking space, a core element linking driving to convenience and freedom.

Where this is not possible, policy makers would need to use various tools together to bring about changes in the various drivers of practices while recognizing that these need to be co-ordinated in line with insights on behaviours. Policy interventions which only deal with one or two of the drivers of behaviours are likely to be more marginal in their effect.

3.4 Considering the drivers acting against pro-environment behaviours

The drivers for pro-environmental behaviours tend not to be primarily environmental, and in any situation, there are competing sets of drivers determining behaviours.

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[22]   Darnton, A., Horne, J., 2013. Influencing behaviours moving beyond the individual. A user guide to the ISM tool. The Scottish Government, Edinburgh.

[23]   Defra, 2008. Summary of Evaluation of Defra's EAF (changing Behaviours) Programme 2005-2008. Department for Environment, Food and Rural Affairs, London.

Patterns of consumption growth indicate that where there are opportunities to satisfy wants, people will naturally take those opportunities. The **availability of products** (or situations) and **pricing of products** are clearly very strong factors in influencing behaviours. Price can be seen as a form of rationing or limiting of opportunities. Increases in income or decreases in prices will always provide very strong drivers for greater consumption.

Marketing and advertisement play a very significant role in stimulating consumption levels as a whole by fostering values and norms of consumerism. It appears likely to also be moving people towards a set of extrinsic values and away from the intrinsic values which appear to support pro-environmental actions.

The force of marketing, if measured by expenditures and depth of knowledge used, by far outweighs any likely action by government or civil society organisations. Policy attempts to make behaviours sustainable are unlikely to reverse current trends if the majority of marketing is influencing consumers to make their lifestyles less sustainable.

A means to influence behaviours (including shaping values) would thus be to **restrict advertisement and marketing**. However, this has proved politically tough, even for smoking and advertisement of unhealthy foods for children[24]. (Consider for example, restrictions on marketing of holiday flights.) More effective and feasible policy may be to shape marketing so that marketing itself positions green behaviours as a desirable social attribute. If it was possible to align economic incentives behind firms' activities with pro-environmental behaviours, marketing from those firms would be likely to start re-enforcing pro-environment behaviours.

3.5 Prioritising interventions

As behavioural changes are unlikely to create the scale of change which is needed to tackle environmental problems[25], there is a question on how they could best be used.

An important consideration here is the existence of **rebound effects**: For energy efficiency measures in households, industry and transport, it is now well documented that direct rebound effects occur. Roughly between 10 to 30 % of the energy saved through efficiency measures is compensated by increased consumption of the same service or product that is now cheaper[26]. Indirect rebound effects where saving from efficiency cost reductions are spent on other products and services are much harder to trace[27]. However, the macroeconomic perspective clearly shows that for the majority of resources or environmental pressure indicators, efficiency improvements have been overcompensated by increased

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[24]   Currently, five EU countries have strong restrictions on advertisement of high-sugar, salt and fat foods and drinks to children, and others have codes of conduct, all with varying degrees of effectiveness.

[25]   Southerton, D., McMeekin, A., Evans, D., 2011. International Review of Behaviour Change Initiatives. Scottish Government Social Research, Edinburgh.

[26]   Maxwell, D., Owen, P., McAndrew, L., Muehmel, K., Neubauer, A., 2011. Addressing the Rebound Effect. Report for European Commission DG Environment.

[27]   Sorrell, S., 2007. The Rebound Effect: an assessment of the evidence for economy-wide energy savings from improved energy efficiency. UK Energy Research Centre London.

consumption (and production). This observation points to the clear limits of behavioural change instruments that focus on small steps and efficiency alone but do not target the entire footprint of any individual or group.

Therefore, there is a need to tackle not only isolated behaviours, but also the **broader patterns of actions** that increase environmentally harmful material and energy consumption. This suggests shaping interventions which not only reduce environmental impacts of one type of behaviour, but also facilitate further pro-environmental changes in the situations which influence behaviours. For instance:

- **Using behavioural prompts which save energy** in the home might be used **in conjunction with policies which raise energy prices whilst reducing prices of environmentally preferable goods** (or other taxes). This change in relative prices may then facilitate further action, as well as tackling the rebound effect. Even though such an integrated policy mix might be harder to implement than single behavioural policies in isolation, its effectiveness could be much higher than the sum of single instruments. Also, the combined mix might be easier to communicate by promising to keep total energy expenditures flat.
- Similarly, behavioural insights can be used to **support niche markets in products, services or behaviours and practices** which may then spread more widely once they reach a certain scale. Policy could aim at supporting the development of practices which achieve this, working with the most supportive social groups.

There is an argument for supporting other private and third sector actors which equally aspire to enable sustainable lifestyles to collectively create conditions favouring pro-environmental behaviours. Current trends towards cooperatives, not-for-profit business, sharing, urban gardening, community-supported agriculture and other niches might be one such lever.

Policy-makers could support these initiatives in diffusing and scaling-up by financing networking, good-practice sharing and by adapting rules and regulations where necessary. In addition, governments could aim to foster these types of sustainable social innovations with instruments similar to those used to spur technology innovation: providing venture capital, network infrastructure, competitions and prizes. An example is the EU-funded initiative Climate Knowledge and Innovation Community (KIC).

3.6 Strengthening the rationale for policy interventions

The scientific research into behaviours indicates several entirely usual forms of decision making which contradict the premises underlying the simple economic theory often used to justify economic policy decisions. These include: lock-in to existing behaviours, short-termism, a strong influence of marketing in changing behaviours (or economic jargon 'preferences'), and regular incomplete or infrequent consideration of information.

High (or parabolic) discount rates provide a rationale for policy intervention in consumer choice where governments feel they have a mandate to consider the long-term interests of their citizens.

Taken together, this raises strong questions whether the current economic framing of analysis of policy options correctly assesses which options will lead to the greatest social benefit in terms of maximising well-being.

It provides a rationale for policy interventions which go beyond the scope of correcting market failure. It **provides a rationale for interventions which steer and shape the market** and in doing so, enable society to adjust to external change. The development and use of this evidence - without the implication that government knows better than individuals what is good for them personally - may be an essential part of creating the political conditions for the policies which would support a transition to a sustainable, well-being maximising economy.

3.7 Winning political support

There is evidence which suggests that when people are unhappy with a change, they focus their attention on other, happier issues, which allow them to maintain their happiness. This has, for example, been observed in people becoming obese who then tend not to consider their weight. Efforts to bring attention back to the problem usually and understandably create negative reactions.

The same is very likely true for environmental messages which often have a negative and restrictive spin. This is relevant for communications. It also seems relevant for winning political support for environmental policy, both in the population and with other politicians and influencers within government. Where environment is presented as a negative message and diverts attention from the primary goal of other policy makers, it is likely to be rejected, resisted and be given little attention. Policy proposals which help deliver other policy makers' primary concerns - for instance health or jobs - are clearly likely to be seen more favourably[28]. Understanding the emotional and habitual elements of decision makers in the process could help pro-environment policy makers steer ideas through the policy process.

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[28]   European Commission JRC Scientific and Policy Reports, 2013. Applying Behavioural Sciences to Policy Making.

4 Illustrative potential policies

The research in this area is useful because it adds complexity to an over-simplified notion of rational decision making. It points to the width of drivers for behaviours and the need to work with all of them to change behaviours. The mix of policy interventions required in each case is likely to be different and only identifiable by considering the particular behavioural context. Given the complexity, all of these policies should be piloted to assess its effectiveness.

Nevertheless, it is possible to give some illustrations of the kinds of policies which could be used in conjunction with others or as 'stand-alone' policies where the existing drivers and situations are already favourable. In the following, the policy proposals are grouped by the type of intervention rather than the policy area.

4.1 Display life cycle costs at decision point

The provision of information on the use of energy could be better presented to tie to people's usual drivers for decision making. For instance, the UK is running a trial putting estimated life-cycle costs on energy-using equipment at retail points, mirroring some information on websites. Canada once started trialling in-car journey cost displays.

Potential policies:

- Introduce the inclusion of life-cycle costs information at point of sale for energy using products. This would need the development of EU norms for 'average' use and relevant national energy price predictions.
- Mandate the automatic calculation and display of journey costs cars for commercial vehicles and vehicles used for professional purposes. Trial the most effective forms of displaying this information: e.g. vocally, on dashboard, or on mobile telecoms app.

4.2 Use defaults

Changing the default option from 'opt-in' to 'opt-out' has proved effective in Germany, the UK and the USA in a range of policy areas.

Potential policies:

- Including new features in technical appliances, e.g. default maximum temperatures built into shower heads or thermostats (with the option of opting out) or a guiding maximum speed build into cruise control appliances in cars. It could be examined if the Ecodesign Directive or EU type-approval legislation could be used to mandate the compulsory introduction of such features.
- Default could also be used in social settings. For example, school canteens might offer a low- or non-meat diet as the default option for long-term, pre-payments for school food while offering parents the possibility of ordering additional meat servings if desired. Given the cultural importance of food, such approaches should not be mandated by regulation, but spread as good practice example through local initiatives. The EU could harness existing networks such as the Covenant of Mayors to inspire local authorities.

4.3 Roll out comparison of utility use

Policy trials in the USA and UK with utility bills that illustrate the level of a household's energy or water use in comparison with similar households in the neighbourhood have shown lasting, significant, reductions in utility consumption. In the UK trial, energy use decreased by 6 %. It is feasible that this kind of reduction could be repeated every few years as average standards rise.

Potential policy:

- Roll-out this approach to billing EU wide, noting that the first step in some regions is to measure and charge for utility use

4.4 Change infrastructures

Given the strong role that habits and prompts from physical surroundings play in shaping behaviours, changes in the infrastructure where a practice (or behaviour) takes place appears to be key for facilitating behavioural change. This goes beyond public provision of the infrastructure - the availability, perceived affordability and convenience of alternative behaviours is a precondition for enabling behavioural change.

Practices could then be changed by infrastructure changes which:

- Break the existing pattern of behaviour by limiting or changing availability; or
- Create additional physical prompts which help trigger pro-environment behaviours.

Potential policies:

- Re-design urban spaces and streets in ways which convey social norms on behaviours, e.g. prioritising walking and cycling over private car use. Following this principle, the visual appearance of streets has been found to be more effective at reducing driving speeds in residential areas than the use of speed limits. Drivers take prompts from the existence of benches, low curbs or flower beds as indications that the area is used by pedestrians and this method has now been used in various countries, e.g. NL, UK.
- Improving the prominence, attractiveness and visible emotional associations (e.g. of benefits for children) of recycling infrastructures: in public spaces, public buildings and businesses.
- Increasing the profile, social attractiveness and convenience of environmentally sustainable food products so that more can reach consumers, particularly where this can be linked to freshness, health, local connections and perhaps luxury. This could be through the provision of greater, more convenient public spaces for farmers markets with seasonal or organic food or local distribution centres (like community run multi-purpose shops and centres) where consumers can locally pick up pre-ordered vegetable boxes from local farmers.
- To reduce food waste caused by domestic fridges being too warm (where that is the case) fridges could be required to include thermometers which, if not automatically controlling the temperature, show warnings to users if the temperature becomes too low.

4.5 Promotion of change in the workplace

The workplace is one of the most important social situations in which learning and social norm setting takes place. Influencing certain behaviours in the workplace can be easier to change than home behaviours. Because changes to communal, 'unowned' space may be less resisted, policy may find it easier to influence a more limited number of workplaces and synergies can be found between the motivations of workplaces to save money and have healthy employees and several pro-environmental behaviours. It may be that changes in behaviours at work may lead to related changes in behaviour at home in some circumstances. In addition, as resources used at or during work are themselves a significant source of environment impact, the policy options are valuable in themselves.

Potential policies:

- Agreement and promotion of the use of caterers' behaviour prompts to change diet (away from meat and dairy products) and avoid food waste: experiments suggest that the positioning of salad bars before alternative meal options boosts uptake of salad eating, and reducing plate size reduces food waste, whilst leaving eaters equally satisfied.
- Promotion of modal shifts in commuting to work by subsidising job tickets for public transport and limiting parking space, providing company bikes and related trainings or team outings around the theme of sustainable mobility.
- Strong promotion of fuel-efficient driving training for workplace vehicles. Experience with training programmes suggests that training can reduce fuel use by 15 % with corresponding cost and environmental savings.
- It may be that lowering the degree of heating (and cooling in summer) in indoor workplaces creates norms for ambient comfortable temperatures at home. Evidence from the Cool Biz Campaign in Japan suggests that to make temperature changes in the work place a success, it helps to explicitly address norms of office clothing which determine appropriate temperatures.

4.6 Better targeting of information campaigns for SMEs

Research in the UK suggests that information campaigns aiming at improving the environmental performance of SMEs are much more successful when they do not mention the environment. For individuals in the workplace, financial and professional motivations are the most important. Information which suggests ways to improve business performance and which only co-incidentally reduce environmental impacts will resonate better with individuals in SMEs and is more likely to result in change in behaviours.

Potential policy:

- Phrase information campaigns aimed at SMEs (whose goal is environmental improvement) solely in terms of business interests.

4.7 Using marketing to promote environmental behaviours

Marketing and advertisement play a very significant role in stimulating consumption levels as a whole by fostering values and norms of consumerism. The force of marketing, if measured by expenditures and depth of knowledge used, is much greater than any similar action by government or civil organisations.

Potential policies:

- Use existing EU law on mis-representative claims to strengthen the commercial value of representing a product as environmentally beneficial.
- Fund consumer or citizen organisations to bring legal action against misleading marketing that wrongly suggests a pro-environmental association. The EU law is worded in such a way that it takes into account actual reactions to marketing, rather than only factual claims[29]. A series of legal actions against misleading environmental associations in advertising could increase the credibility and exclusivity of green claims.
- This would require the development of consensus on which products were environmentally beneficial - e.g. the best-performing 25 % in certain product classes - and the dissemination of those as guidelines, together with the progressive build-up of a body of case law to provide clarity on legal implementation[30].
- The increased credibility and exclusivity of green claims may lead to a stronger association between pro-environmental attributes and positive, underlying motivational factors of social contribution, justice, social acceptance, exclusivity and status. The widespread association of these factors repeatedly portrayed by pervasive marketing could play a role in re-enforcing both pro-environmental purchasing and the underlying social norms which promote other pro-environmental behaviours.

4.8 Promoting leisure time

One of the strongest drivers for environmentally-harmful consumption is the availability and affordability of consumption. Induced behavioural changes are unlikely to compensate for the increasing possibilities of consumption afforded by increases in productivity (that reduce prices relative to average incomes).

Another driver appears to be the sticking to unsustainable habits due to perceived lack of time to consider alternatives or acquire the skills necessary for a new, more sustainable practice and increased consumption because it is convenient or quick due to lack of time[31].

This suggests that a strong policy for influencing behaviours would be one which reduced additional income, and increased time for other activities[32]. Although this flies in the face of current (unsustainable) economic goals of constantly increasing GDP, it may be essential. It might be potentially politically feasible, if reduced additional income is swapped for increased leisure time and economic and social norms change to support the swap. In addition, researchers see a set of social benefits.

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[29]   Article 6, Unfair Commercial Practices Directive, 2005/29/EC: "A commercial practice shall be regarded as misleading if it …. in any way, including overall presentation, deceives or is likely to deceive the average consumer, even if the information is factually correct, and … is likely to cause him to take a transactional decision that he would not have taken otherwise".

[30]   Experience with the use of the Unfair Commercial Practices Directive for foods suggest this could be effective. Work triggered by the Commission Recommendation on communication of life-cycle environmental performance, 2013/179/EU could support agreement on what counts as 'environmentally-beneficial'.

[31]   Schor, J., 2010. Plenitude: The New Economics of True Wealth. Penguin Press, New York.

[32]   NEF, 2010. 21 Hours. New Economics Foundation, London.

<u>Potential policy:</u>

- Encouraging norms of reduced working hours (either in form of part-time or as sabbaticals) through a set of policies and non-governmental actions, including e.g. longer statutory vacation times, dismantling of discrimination of part-time workers, and reductions of the fixed cost of labour that currently disfavour part-time posts (e.g. in employee taxation and administration)[33].

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[33] NEF, 2012. About Time: Developing the Case for a Shorter Working Week. New Economics Foundation, London.

Annex

Final consumption choices are made by most of the 508 million EU domestic consumers, and by individuals acting in professional contexts. There is a vast array of different contexts in which decisions are made. When designing policies intended to influence how individuals purchase products, it is important to understand how people make these decisions, and what influences them. In the scientific literature, there are various different perspectives on how consumers take decisions, each of which suggests rather different routes for effective policy.

A) Economic rationality

Many existing policy measures affecting consumer behaviour are based (at least implicitly) on the assumption that consumers decide purely rationally. It is assumed that consumers gather extensive information on different characteristics of available alternatives to fulfil a conscious pre-defined need, weighing up the pros and cons of the alternatives and deciding which will bring greater satisfaction.

This perspective leads to policies which provide information and change characteristics of alternatives (particularly price): labelling, information campaigns, comparison websites, subsidies and differential taxes.

B) Insights from behavioural economics

Empirical research and the results of marketing practices indicate that there are several ways in which people make decisions differently to the ideas of economic rationality. There seem to be two important dimensions to decision-making: 1) the speed a decision is made – it can be automatic or more controlled; 2) the type of decision-making: cognitive (slower and more rational) or 'affective' (generally quicker and more emotional). Quick judgments and emotional responses play an important role in consumption decisions. In addition to the implications mentioned in the main body of this note, this has the implication that:

- Too much choice or information overwhelms consumers and can lead to less satisfying choices.

- Consumers use consumption to make statements about themselves – their identity and the kind of person they would like to be, not just on functional need.

- Consumers are seen to act in different ways in different circumstances, and each consumer is different – each individual's choices are influenced by factors such as gender, income level, attitudes or values, prior experiences and prior research.

These insights have many significant implications for policy, suggesting that there are many ways in which the design of existing policy measures can be improved to increase their effectives, and pointing to many additional policy instruments. E.g. the 'framing' of a decision has a significant impact on choice: e.g., people in many countries feel as if they are making a "profit" from their purchases, when given x% reductions. Also, the use of default selections with the chance to opt out, or cooling-off periods for choices can lead to significant differences in outcome.

A range of policy measures based on these insights have been trialled across the world, particularly in the USA - most notably in California - and the UK.

C) How habits influence decisions

Most of our behaviours are habits, including many with significant environmental impacts: travel, food, heating and water use. Neuroscience suggests that 95 % of our behaviour is governed by the 'automatic mind' (if you include biological functioning)[34]. These are less susceptible to 'rational' change.

Habits seem to be strengthened by frequency, automaticity and a stable context. 45 % of our behaviours are undertaken in the same place every day. As habits are associated with particular situations (e.g. comprising physical location, attitudes) disruptions to a particular situation can be (in some cases) a way to break the habit. That situation includes hard and soft infrastructures such as attitudes and social institutions[35].

This implies that policy to change habitual behaviours needs to consider the strength of the habit, and then how to break it (a different starting point to information campaigns). That could come from helping people who intentionally want to break the habit, e.g. through information prompts, through targeting 'moments of change' of lifestyles or from breaking links in the contexts which support habits. (It also implies creating new (more sustainable) habits to replace those which have been broken - what would those be? How could they be re-enforced?)

D) The influence of motivations

Motivations for environmental behaviour are multiple, diverse, interacting and mixed in different ways for different individuals. They are linked to deeper psychological set-ups, including: a person's sense of identity (or how they see themselves), social norms, and strength of connection to society. Much relates to how people see themselves, in work, family, society and where they find their source of self-esteem.

This suggests that changing behaviours comes from making connections between pro-environmental behaviours and these deeper psychological traits. For instance, making a convincing case that recycling is part of 'doing one's bit' for society.

With any choice, there are balances between the rewards that people feel from actions that boost their self-esteem or avoid guilt, and the other emotional rewards that they get as an individual from choices, e.g. pleasure from eating or warmth. Where behavioural choices involve giving up these pleasures, change is much less likely. Incremental changes tend to be the norm.

It's helpful to understand that - as a result - different people will react in different ways to the same situation (or messages) and can be connected with through different routes. A message that recycling is anti-materialistic and caring is effective for someone who prides

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[34]   Martin, N., 2008. Habit: The 95 % of Behaviour Marketers Ignore. Financial Times/ Prentice Hall, London.

[35]   Defra, 2011. Habits, Routines and Sustainable Lifestyles. Department for Environment, Food and Rural Affairs, London.

himself on not being wasteful, but has the opposite effect on someone who prides himself on having the financial means not to care about small expenditures.

Recent research in the UK[36] looked at the reasons why people had made major changes in their lifestyles that had environmental benefits. The single biggest motivation for their behavioural changes was a sincerely held conviction that climate change was a matter of social justice – that it was unfair for individuals in industrialised nations to use more than their 'fair share' of carbon when poorer people elsewhere would suffer the consequences.

Some evidence from the UK suggests that the satisfaction of a person's ideas that they are living up to their identity or part of a collective effort are more important than the actual effectiveness of their action on the environment.[37]

The small amount of research into whether one pro-environmental behaviour leads to further pro-environmental behaviours has not reached any conclusive answers, mainly due to methodological problems in testing such things as behaviours. But it does point out that there is often no, or very little, correlation between pro-environmental behaviours, that personal motivations for pro-environmental behaviours differ between behaviours (and so are less likely to be linked), and that the wider context for a person's behaviours (e.g. their level of social engagement) can be more important than any relationships between the pro-environmental behaviours. These findings are re-enforced by the research identifying that the reasons for pro-environmental behaviours are very contextual - dependent on particular conditions - so that, even where there might be a common pro-environment driver, the context is likely to be more influential, and the impact of the common driver weak. In summary, there is no clear evidence that there would be a 'spill-over' effect from one behaviour to any other.[38]

E) Norms and worldviews

The social norms in social groups are very important. People follow norms out of drivers for belonging and status. People with weaker bonds to social circles, and those with weaker senses of self are more likely to follow the perceived broad societal norms. For those with few friends, workplace interactions are highly influential in setting norms. Social norms also play a role at mitigating guilt at harmful actions - people find comparators in society whom are doing less for the environment than they are, so they can still define themselves as caring.

Social norms continue to change. In the UK, as in many other EU countries, undertaking a small amount of pro-environmental behaviours is now seen as a normal. However, in general, norms of higher consumption over time in practice mean that higher levels of environmental harm are the new social norm, even if these are incidental.

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[36]   Howell, R.A., 2013. It's not (just) "the environment, stupid!" Values, motivations, and routes to engagement of people adopting lower-carbon lifestyles. Global Environmental Change. 23(1): 281-290.

[37]   Defra, 2010. Motivations for pro-environmental behavior, RESOLVE, Department for Environment, Food and Rural Affairs, London.

[38]   Defra, 2011. Exploring Catalyst Behaviours. Department for Environment, Food and Rural Affairs, London.

Friends, family and local communities appear crucial to changing social norms, though it is not easy to identify where triggers would be within these systems for change. Celebrities or people seen as leaders (called 'mavens') can lead some change.

Experience in the UK and US with written prompts on social norms provide good illustrations of these effects. For example:[39]

- In LaVerne California, a note placed on doors of homes informing them of the number of neighbours who participated in domestic waste recycling increased the volume of waste recycling by 19 %, with that effect continuing 4 weeks after the notes had been delivered.
- Also in California, four different messages were placed on front doors relating to use of air-conditioning, one containing information on the money that could be saved, one on the CO_2 savings, one stating that using fans was socially responsible, and one pointing out that using fans was the most popular choice in the community. Households receiving the fourth note reduced air conditioning consumption by the greatest amount (10 %).
- In the UK, seven different versions of a reminder note for personal tax payments were sent to individuals as a trial, with the effectiveness of each form of the note being monitored. The findings, including that a reference to what others were doing in the locality proved very persuasive, have been used to design a roll out of tax reminder letters which have brought forward payment of £210m of tax revenue.

The design of prompts makes a significant difference. Californian experience with 1,000 households found that although comparisons in their power bills with comparably sized local households was effective in changing energy use, for low-energy using households, that change was counter-productive. They used more energy. The rationale appeared to be that they felt they were doing better than other people already, so could make less savings. By adding a smiling (or sad) face to the bill, that effect could be reversed: low-energy users instead felt monitored and rewarded for their 'good' behaviour and continued it.[40]

Similarly, an attempt to repeat the LaVerne recycling trial within a public administration found that the effect produced was not so conclusive - most probably because people did not see their home recycling behaviours as relevant to their position within their work community, where perhaps they had weaker social links.

Physical infrastructures used for pro-environmental behaviours can play an important signalling role in indicating what the social norms in a community are. This has implications for the location of these physical infrastructures - making them visible could increase their impact.

F) Institutional economics

Another, related body of thought looks at how the structures around individual decision makers have profound influences on how decisions are made. Institutional economics

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[39]   Centre d'analyse strategique de la Republique Francaise, 2011, Green Nudges: new incentives for ecological behaviour, Paris, p. 5.

[40]   Shutz P. et al., 2007. The constructive, destructive and reconstructive power of social norms. Pyschological Science 18.

examines how social institutions – meaning the norms, standard practices, rules and expectations surrounding an individual – affect decision making.

These factors are important for individual consumers, but also for decision makers inside organisations, including the public sector. The decisions they make are strongly influenced by the incentives which their organisation gives them and the metrics against which their decisions will be judged.

For example, budgeting rules may promote short-term cost savings at the expense of future energy efficiency savings, because those efficiency savings will not be attributed to the individual (or department) making the purchasing decision. Green public procurement has often run up against institutional barriers. The values and habits of an organisation, even when not formalised can be equally influential in final outcomes. This suggests that policy instruments targeting institutional arrangements may be useful in changing consumption patterns.

G) Practice theory

Much research acknowledges the role of the attitudes and values of individuals in shaping choice preferences. This suggests that changing consumer attitudes leads to changes in consumption patterns. Yet many sociologists challenge this assumption that rational individuals take conscious decisions based on their attitudes. Instead, individuals can be seen as being engaged in everyday practices - like riding a bike, cooking, or showering.

Taking these practices as the central unit of analysis gives a different view on consumption choice: consumption is a by-product of the practice, of what people "do" every day and what is meaningful to them, consumption is not an end in itself. Thus, people do not desire a car, but strive to go to work in a convenient, safe and private way.

Elizabeth Shove and her collaborators[41] see practices as constituted by three types of elements: materials, competences and meaning. If we take the example of bike riding, the materials involved are the bike itself, bike lanes and potentially a place to lock the bike. The required competences are the ability to ride a bike and the knowledge of traffic rules. Meanings can include aspirations to lead a healthy life, be free of traffic or environmental values. This perspective gives different implications for altering consumption patterns:

▪ Social, i.e. shared practices, their elements, how they change and interact are the centre of the model, not the individual and his or her attitudes;

▪ Practices are seen as clearly situated in space and time, implying that the conditions which allow one practice to emerge in one place may not be replicable somewhere else.

▪ There are strong path dependencies in individual lives and communities, since the available materials and competences shape the options for choosing new practices.

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[41]   Shove, E., Pantzar, M., Watson, M., 2012. The dynamics of social practice: everyday life and how it changes. SAGE, Los Angeles.

- Change in social practice is understood as emerging from the co-evolution of infrastructures, technologies, competences and social norms in a continuously ongoing process that cannot be controlled by any one actor, but only influenced.

Practice theory invites policy-makers to focus on "how" people do things instead of only examining "why". It shifts the focus from individuals to groups of people engaging in any one practice, emphasising previous findings that behavioural change tends to happen in groups.

Building on the practice theory research and case study evidence, the Scottish Government has developed the ISM tool. This conceptual model is aimed to help policy-makers to design effective behaviour change interventions that work simultaneously on the individual (I), social (S) and material (M) contexts (Darnton and Horne 2013).

H) DEFRA Framework on factors contributing to behaviours (2011)