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SEMINAR PROCEEDINGS

→ Social Affairs

Behavioural Incentives and the Environment

Proceedings of the workshop organized by the
Centre d'analyse stratégique

March 9th 2011

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TABLE OF CONTENTS

<u>Executive summary</u>	5	
<u>Introductory remarks</u>		
Vincent CHRIQUI , Director General, Centre d'Analyse Stratégique.....	9	
<u>First roundtable</u>		
<i>Information, incentives and constraints: Making the most of traditional public policies to foster « green » behaviours among citizens</i>		
Opening speech: « Reshaping the final consumer 's reflexes: Current options for policymakers »		
Bruno MARESCA , Sociologist, Research director, Research Centre for the Study and Monitoring of Living Standards CREDOC).....	12	
I. Innovative policy tools on sustainable consumption policy – some insights from ASCEE (FP6) and CORPUS (FP7) projects		
Harri KALIMO , Professor and Senior Research Fellow, Institute for European Studies (IES).....	15	
II. Using price signals to address climate change		
Benoît LEGUET , Director, Head of Research, CDC Climat.....	17	
III. Communication and education campaigns promoting sustainable development: The French Environment and Energy Management Agency experience		
Patrice JOLY , Communications and training Director, French Environment and Energy Management Agency (ADEME).....	19	
<u>Open discussion</u>	23	
<u>Second roundtable</u>		
<i>“Green nudges”: New incentives to encourage environmentally-friendly behaviours</i>		25
Opening Speech		
Pierre DECHAMPS , Adviser for Energy and Climate Change, Bureau of European Policy Advisers (BEPA), European Commission.....	26	

I. Attitudes and engagement: How can we encourage citizens to adopt environmentally friendly behaviours?	
Laurent WAROQUIER , Research Scientist in social psychology, University of Toulouse II – Le Mirail.....	28
II. Applying behavioural insights to environmental policy: The UK context	
Roisin DONACHIE , Senior Adviser, UK Cabinet Office’s <i>Behavioural Insight Team</i>	30
III. “Green nudges”: Benefits and limitations of field experiments	
Olivier OULLIER , Scientific Adviser, Social Affairs Department, Centre d’Analyse Stratégique and Associate Professor of Neuroscience, University of Provence.....	32
Open discussion	37
Concluding remarks	
Michèle PAPPALARDO , General Commissioner for Sustainable Development.....	41
Appendix	
Strategic Newswatch #212 , “Towards a policy of sustainable consumption in France”.....	43
Strategic Newswatch #216 , “Green nudges: New incentives for ecological behaviour”.....	55

Executive summary

The ecological challenges we are facing cannot be tackled by solely relying on technological progress and innovation: environmental policies aimed at developing 'greener' products and services will only lead us halfway to our goals regarding climate change, scarce resources management and biodiversity preservation. For a few years, a boomerang effect has been observed frequently, especially for cars and domestic appliances. Such a phenomenon indicates that budgetary savings in the purchase or in the use of a product, made possible by technological innovation, often triggers an increase in consumption. Hence, technological progress has to go hand in hand with a change in consumers' behaviour, on a collective scale as well as more individual level.

Governments can use different incentives to foster an evolution in daily behaviours and consumption modes that are more eco-friendly. To date, they have mostly implemented classical policy-making strategies and tools such as taxes, bonus/malus schemes, norms, education and information campaigns. However, new approaches are making their way: some of them, the so-called "nudges" after the concept introduced by US academics and policy-making advisers Richard Thaler and Cass Sunstein, rely on citizens' conscious and unconscious reflexes, to trigger off and favour behavioural changes. This new kind of behavioural strategies are gaining momentum among researchers and policymakers worldwide that are currently running trial field experiments to assess their feasibility and many of them are now in the process of being implemented. Whether nudges can be part of a general, coherent and ambitious environmental policy, complementing other measures that have proved efficient remains an open question.

By inviting experts and international policymakers to share their work and experiences during a one-day workshop that took place in Paris on March, 9th 2011, the Centre d'Analyse Stratégique wished to contribute to the ongoing debate on the benefits and limits of coordinating novel and more classical strategies aimed at encouraging environment-friendly behaviours.

Major conclusions of the debates

1. The willingness to adopt eco-friendly behaviours does not necessarily translate into concrete and appropriate actions, especially if such actions entail important changes in daily routines. For instance, **some 80% of French people declare they are willing to adopt sustainable consumption habits, but only a fifth of them are active sustainable consumers** who separate their rubbish for recycling on a daily basis, buy locally-produced goods or fair-trade products. Many factors account for this so-called « value-action gap »: **budgetary constraints, difficulties in accessing «green » products or services which remain scarce on the market, the feeling of being powerless when one acts individually, a biased evaluation of risks and benefits, and/or a significant level of behavioural inertia to change.**

2. Governments have three options to encourage a social evolution in this area: it may impose mandatory regulation on citizens, inform them or give them incentives to change their behaviours. The latter options are used more and more, because governments are now aware that many complex motives underlie ecological behaviours, among which are social representations, group dynamics, etc. Value systems play a key role in determining our practices: « eco-citizens » are more concerned about environmental issues, for instance.

Public policies started evolving after it became clear that some of them had mitigated or unexpected effects, proving policymakers underestimated how many factors were at play regarding behavioural change. For instance, savings in water consumption are less due to environmental concerns than to the combined effect of the improvement in the energy efficiency of domestic appliances and the efforts made by trade unions of co-owners to decrease the amount of their water bills. Our energy consumption, especially for lighting and heating, is also determined by our need for comfort, which in turns depends on the social norms we conform to.

3. The « price signal » is the most famous traditional incentive. It aims at providing economic agents with some information on the global cost of a product or a service, by incorporating into to the consumer price the cost of the externalities its lifecycle induces, especially in terms of environmental impact. Several types of signals can be used. For example, Scandinavian countries have been implementing **carbon taxes** for the last twenty years and the European Union has set up a **quota exchange system** to limit greenhouse gases emissions that directly contribute to global climate change. Other instruments target individual action: in 2004, the British Parliament considered implementing a **personal carbon quota trading scheme**, the French Environment and Energy Management Agency (ADEME) proposes carbon an accounting system called “carbon coach” and the French Government has launched **energy saving certificates** which have essentially raised consciousness among energy suppliers and their customers, while **voluntary offset mechanisms** have, to date, enlisted the most well-off groups of the population.

Each of these tools has its assets and drawbacks. Thus, a **carbon tax** can be easier to implement once it has been enacted, but it can have a **rebound effect**. **Quotas are a solution to avoid it**, if the regulator does not allow quantified limits to be exceeded. Both **price signals depend on their long-term credibility to be effective**. Such is the condition for encouraging producers to make the necessary investments and consumers to adopt lasting new behaviour.

4. Campaigns raising awareness and providing information are another type of traditional incentive. They help to bridge the gap between good intentions and behavioural inertia, thus completing norms of fiscal measures. **According to the ADEME experience, it is all the more necessary to inform citizens** since they tend to distrust advertisement strategies using environmental-friendly arguments for fear they may be “greenwashing”, often feel powerless when it comes to ecological challenges and are looking for reliable information. Furthermore, **although there is a general consensus around the need to engage in sustainable development, most people do not understand what the idea implies in theoretical and concrete terms.**

Hence, the ADEME uses two types of campaigns to link global issues and daily actions to undertake: general campaigns, such as the one which encourages the French to engage in the Grenelle strategy meant to enter “*The World After*”, **and theme-oriented or sector-related campaigns**, focusing, for instance, on energy savings or waste management. These are more pragmatic, and they have a greater impact: indicators suggest they are recognized by 50% of the population, and endorsed by 90% of them, while broadly-oriented campaigns only reach 30% of the population in terms of recognition, and are endorsed by 80% of people. **Targeting the right goals and audiences is a key factor for success. It is also crucial to use to viral, or community marketing techniques, some of them derived form behavioural theories, that aim to enlist people in concrete actions.** The “*Challenge for the Earth*” campaign was one of the initiatives the Agency undertook in this logic. It meant to encourage citizens’ voluntary involvement around ten easy, meaningful actions. Eventually, **the message has to be clearly enunciated, in a reliable and realistic manner so as to avoid disappointing people about the progress they can achieve themselves** (a phenomenon known as “cognitive dissonance”); **it also has to be**

attractive without being authoritative or inducing guilt. The State must be especially careful not to take credit for progresses citizens have achieved.

5. Comparative studies on **policies implemented by a small number of “pioneer” European countries (namely, the Netherlands, the United Kingdom, Finland and Sweden) to induce more ecological behaviours are instructive.** Indeed, **the French Government has so far mostly focused on the production side,** to “green” the offer of products and services. **Benchmarks show governments have just started to adopt new strategies to encourage behavioural changes:** they try to use group dynamics to spread good practices (like the British “eco-teams”¹ do). Such strategies require collecting information on routine habits and socio-economic profiles of the target groups.

6. The European Commission is also developing communication campaigns with social marketing experts to promote **positive, realistic messages: environmentally-friendly behaviours should no longer be seen as a kind of regression or as a punishment.** Indeed, **meeting the ambitious environmental policy goals the European Union has set itself** (*which targets are depicted in the energy and climate change package² or in the Roadmap for moving to a competitive low-carbon economy in 2050³ the Commission has adopted on March 9th*) requires **making the most of the portfolio of available policies** and involving the citizen as a genuine stakeholder.

7. The United Kingdom has also committed itself to a challenging policy. It recently adopted a **« Green Deal »,** a platform for generating energy savings. Professionals are visiting British households to propose that they establish an energy balance of their houses, and see how they can improve their energy efficiency. **This program is an innovation on two grounds. First, the necessary investments will be gradually funded by the British themselves,** as they make savings on their energy bills. Furthermore, **it proposes new kinds of incentives inspired by behavioural insights.** The *Behavioural Insights Team* of the British Prime Minister cabinet implements a series of experiments in this field, including smart meters displaying one’s electricity consumption in real time, bills comparing one’s consumption to those of households with a similar composition, or automatic switches that turn off the light when one exits a room.

8. Such devices are now named « nudges » in Anglo-saxon literature⁴, conveying the idea that one’s choices are dynamically oriented toward decisions matching the collective interests. Behavioural incentives are based on signals that raise citizens’ awareness. They generally consist of **illustrating the virtuous aspects of eco-friendly practices in an impacting way or in directly triggering good practices.** For instance, developments that achieve this goal include faucets that automatically turn off when the user reaches for soap or brochures that translate the average consumption of a car into euros rather than in petrol units. In California, some cities have managed to increase the recycling rate of household waste by 19 % by indicating people how many of their neighbours were actually sorting their waste.⁵ Different experiments demonstrate that nudges can be operational, effective and flexible. Moreover, **they are a solution for alleviating the constraint a change in behaviour represents,** thus preventing citizens from seeing environmentally-friendly actions as an effort.

¹ See <http://ecoteams.org.uk/>

² This plan sets a triple objective to 2020: increase the proportion of renewable energy to 20% in the overall energy mix, reduce carbon emissions by 20% and save 20% of the total primary energy consumption.

³ http://ec.europa.eu/clima/documentation/roadmap/docs/com_2011_112_en.pdf

⁴ See Thaler R.H. and Sunstein C.R. (2008), *Nudge: Improving Decisions About Health, Wealth, and Happiness*, Yale University Press.

⁵ The experiment encompassed 120 households in the city of LaVerne, California. See Schultz P.W. (1998), “Changing behavior with normative feedback interventions: A field experiment on curbside recycling”, *Basic and Applied Social Psychology*, vol. 21(1).

9. However, nudges are not miracle solutions; they are limited in some aspects. Adverse effects have been detected, for instance: if you become aware that you have better environmentally-friendly reflexes than your neighbours, you might end up being less cautious in your daily behaviour. Several issues on the exact duration of positive effects also remain unsolved, and it is difficult to map out experiments based on relatively small groups to be suitable for a broader community, or a national framework. Moreover, contrary to what some of their supporters claim, **policies based on nudges have a cost**: it can be expensive to set up and implement such measures, and to collect and analyse data for the mandatory evaluation of their efficiency. Eventually, **interventions meant to reorient citizens' behaviours have to be totally transparent regarding methods and the results that are promoted**; otherwise, there is a risk of the government being discredited.

10. Nudges will be effective, with long-lasting effects, only if they **are part of a larger, coherent environmental policy**. Those instruments should not be seen as substitutes to other policies, but as **complements**. Individuals are complex when it comes to environmentally-friendly behaviours, which necessitates implementing various policy instruments in combination. Citizens will be more receptive to incentives if they are aware of the bigger picture, and the potential benefits of environmental policies, which can be depicted as “win-win” strategies. Finally, it is crucial to continue educating the youngest, so that they adopt ecological practices at a very early age, and thus contribute to reversing the present trend. Young generations, who are allegedly the first to have been informed about sustainable development issues, are indeed paradoxically those who mostly exhibit “hyper-consumption” habits. Eco-friendly behaviours must become our default option.

Introductory remarks

Vincent CHRIQUI, Director General, Centre d'Analyse Stratégique

Good afternoon, ladies and gentlemen, and welcome to this workshop which will focus on the advantages and drawbacks of the incentives the government can use to encourage environmentally-friendly behaviours.

Such a reflection is all the more necessary since it is perfectly clear that we have to change our consumption modes in the years to come if we wish to preserve natural resources and global equilibriums.

Thus, as far as global warming is concerned, the International Energy Agency indicates that technical progress, which allows us to be more efficient in the use of energy, can only enable us to reach half of the global targets in terms of emission reductions. The other half depends on behaviour. We therefore have to show a greater respect for natural resources - and we must convince people that this is necessary.

That will be a challenge, because there is a huge gap between what people think and what they do. Almost 80% of the French say that they are willing to lower the environmental impact of their consumption habits but only a quarter of them actually put their words into action by sorting their waste properly or buying fair trade or local products, for example. Furthermore, the "rebound effect" often goes counter to the positive impact of technological progress: when savings are made thanks to efficiency, the costs of production or the final price of the product decrease, and we tend to consume more. This counter-reaction has been witnessed in some sectors, most specifically for cars or domestic appliances.

Technical progress, therefore, has to go hand in hand with changes in individual and collective behaviour.

This is a very topical subject; it is in keeping with the research that we are presently carrying out and continue. Last January, the Centre d'Analyse Stratégique hence presented a report on sustainable consumption to Nathalie Kosciusko-Morizet, the French Minister in charge of Ecology, Sustainable Development, Transports and Housing¹. This report recommends that the French government go beyond traditional policies supporting 'green' products and services. Drawing on the British, Finnish and Swedish examples, it advocates the implementation of a national policy encouraging sustainable consumption.

The reason for setting up a national consumption strategy is simple: it is difficult to change one's behaviour, even when such a change is in favour of one's individual interest. People are organised in a certain way and have certain reflexes and habits that are difficult to change. They can also experience a lack of information, or be confronted by psychological and institutional barriers. We therefore need to come up with better strategies. Financial constraints can prevent some persons from acting in spite of their willingness; many people also feel helpless when considering global ecological challenges and do not believe that they can make things change. They can also be constrained by a certain inertia and resistance to change. Furthermore, adopting different behaviours may serve a collective interest while imposing a certain sacrifice on the individual. One concrete example of this dilemma is the decision not to use one's private car for a quick journey in

¹ Centre d'analyse stratégique (2011), « Pour une consommation durable », Report #33, by Elisabeth Laville, Blandine Barreau, Caroline Le Moign and Dominique Auverlot. The English version of the synthesis of the report is also available : <http://www.strategie.gouv.fr/IMG/pdf/NS-DevDurable-212-Anglais-V2.pdf>

order to cause less pollution. The only way to lift the many barriers to behavioural evolution is to take into account the way people select and actually use products and services.

Different instruments can be used to deal with these obstacles:

- Some incentives can modify the cost of a good or service, either by increasing it or by diminishing it: fiscal schemes such as pollution taxes or quota markets enable the State to manage scarce resources or limit the negative externalities of a given activity. Thus, a well-crafted redistributive policy is key in convincing citizens and policymakers to implement it. Positive incentives such as bonus-malus systems, subsidies or tax deductions can also be used.
- Laws and norms: the EU energy label, for instance, has contributed to ameliorating the energy efficiency of household appliances. These standards work when they keep up with the technological progress made by producers.
- Information and education campaigns are all the more effective since they help the youngest adopting environment-friendly reflexes. The tone also has to be adapted to the message conveyed, and the target audience must be carefully identified.

However, being aware of the advantages of behaving in a certain way does not necessarily mean that we will behave in this way. On the other hand, knowing about the negative impact of a particular behaviour is not enough incentive for someone to change his or her habits. Everyone knows smoking is unhealthy, but there are still some 14 million smokers in France. It is always easy to talk about good practices, but it is more difficult to get the message across in a way that sticks.

Therefore, we thought that today's symposium should look at the other approaches some governments are already implementing. Innovative incentives drawing on behavioural science can be used to encourage people to change their behaviour in favour of the general interest without implementing norms. Such incentives, now referred as "nudges" in the Anglo-Saxon literature, consists of signals that allow people to become more aware of the positive implications of an environmental-friendly behaviour, or more to directly trigger ecological reflexes. Concrete examples include systems that automatically turn off the lights when you leave a hotel room, or brochures that translate the average consumption of a car into euros rather than into petrol units. In California, some cities have managed to increase the recycling rate of household waste by 19 % by indicating to people how many of their neighbours are actually sorting their waste.

Different experiments conclude that such schemes can be useful. None of them are miracle solutions to ecological issues, but they can be used to complement existing policies.

However, there are still limits to the achievements that can be expected from nudges.

First, most of the experiments have been set up at a reduced scale and we still lack the necessary perspective to foresee the long-term effects. Large-scale experiments could thus be launched in France, in order to set up a "life-size" experience. The French ministry for Ecology will implement a similar test this summer: on a voluntary basis, private companies will display a carbon label on some mass-market products.

Then, behavioural incentives have to be part of a larger, coherent environmental policy, otherwise they will just have limited and temporary effects. The State is responsible for selecting and combining efficiently the different policy instruments that can be used.

Eventually, ethical implications have to be taken into account: the Government is entitled to encourage citizens to change their behaviour as long as it does so transparently.

The two roundtables of this symposium may lead us to tackle these issues.

Finally, I would like to thank today's speakers, who have so kindly accepted our invitation. We will have the opportunity to hear university experts, representatives from the European Commission, the British government, the French Environment and Energy Management Agency, the Caisse des Dépôts and the Institute for European Studies. I am especially grateful to Michèle Pappalardo, the Commissioner for Sustainable Development, who will conclude our discussion.

First roundtable

Information, incentives and constraints: Making the most of traditional public policies to foster « green » behaviours among citizens

Participants in the Roundtable:

Bruno MARESCA, Sociologist, Research director, Research Centre for the Study and Monitoring of Living Standards (CREDOC).....

Harri KALIMO, Professor and Senior Research Fellow, Institute for European Studies (IES)

Benoît LEGUET, Director, Head of Research, CDC Climat

Patrice JOLY, Communications and training Director, French Environment and Energy Management Agency (ADEME).

The Roundtable is chaired by Dominique AUVERLOT, Head of the Sustainable Development Department, Centre d'Analyse Stratégique.

Opening speech: “Reshaping the final consumer’s reflexes: Current options for policymakers”

Bruno MARESCA, Sociologist, Research director, Research Centre for the Study and Monitoring of Living Standards (CREDOC)

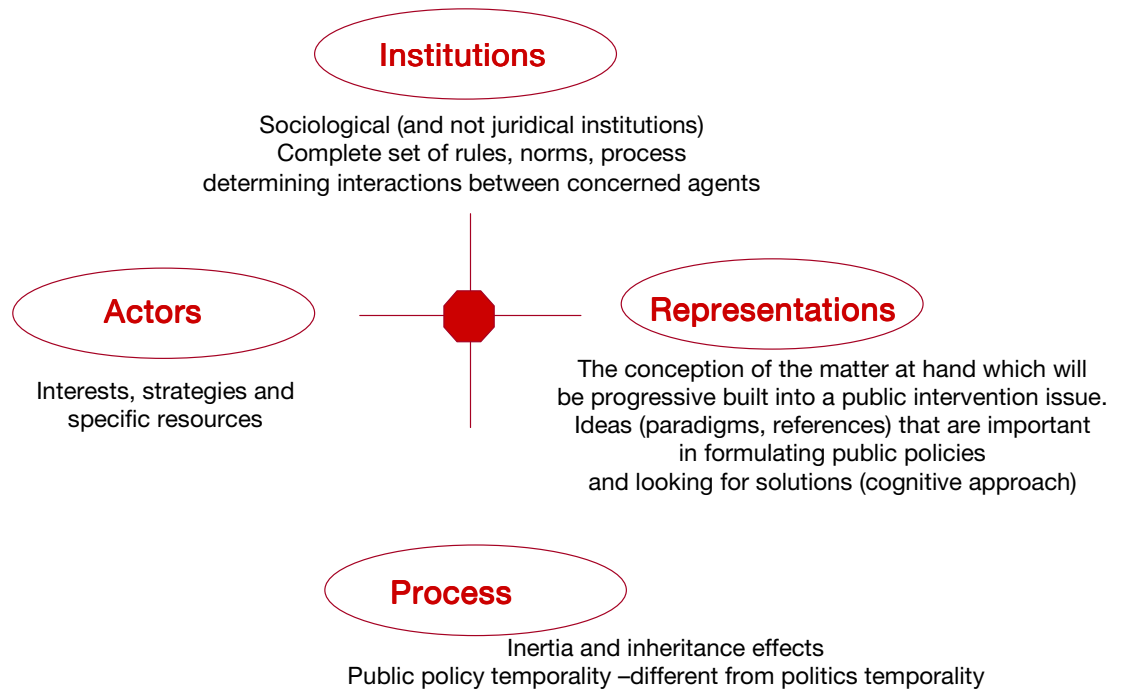
Thank you for inviting me to open this first roundtable.

Public policies are complex matters created by institutions and implemented by individuals. We tend to undervalue the theories on their social impact and on the way we can influence them. These theories are based on different conceptions of “instruments” or “tools”. It is therefore important to understand how a mechanism that is both technical and social and bears the legitimacy of public intervention works.

In the area of sustainable development, the instruments of public action are based on the idea that we can count on the rational behaviour of the consumer or user. The idea that the consumer has structured and stable preferences lies at the heart of recent policy instruments. In this perspective, the well-informed consumer, encouraged through adequate tax and financial mechanisms, makes decisions consistent with the collective optimum. However, these choices are not always based on economic or material motives, but can also be due to ethical and moral considerations. This idea has gained ground in recent years, particularly since people have become much more aware of ecological matters and are concerned with the fact that economic development has to become more sustainable. This is therefore another aspect that is taken on board in the development of public policy instruments.

But this representation of the “consumer-citizen” has been widely questioned in recent years, especially with the empiric observation that actual behaviours change more slowly than we imagined in the field of sustainable development.

Building on these two bases, public policies are aimed at imposing, constraining, encouraging or informing citizens. The traditional orientations are rooted in the creation of the State, when it was set up as the body that established rules and laws. Today, the state is slightly different and while these rules are as present as ever, Governments now also act like moderators, educating and informing people. They have also developed different financial and social incentives to get their messages across.



Source: CREDOC, 2008

	Instrument type	Political relation type	Typical example	
Constraint	Legislative & regulatory	Mentor government	General interest	incandescent light bulb ban
	Economic & fiscal	Wealth-producing government	Social & economic effectiveness	eco loans with 0% interest rate
Incentive	Conventionnal & incitative	Stimulating government	Citizenship	AFNOR Charter for a sustainable tourism
	Labels & standards	Responsability-giving government	Science & technics	"A Class" label Organic certification
Information	Information & communication	Animator government	Giving actors a sense of responsibility	Awareness campaigns of the French Environment and Energy Management Agency

CREDOC, 2009, adapted from Lascoumes & Le Galès 2004

There are therefore different sorts of instruments that can be either used, together or separately. There can be constraints like laws and regulations, such as the law which will ban the use of ordinary light bulbs. This shows Government impose laws quite often, particularly where the general interest is at stake. Other instruments include economic tools, tax incentives and charters, which have become much more popular as illustrated by the Association Française de Normalisation (AFNOR) Charter for a sustainable tourism. However, the use of charters is not always entirely successful. The third level of instruments is what I call education or information instruments, which are greatly diversified. Some are based on communication with the general public and some consist of conveying information of an educational nature, especially where it reaches out to young people. A large number of labels and standards have also been developed, such as the classification of household equipment and organic certification.

However, all these signals can sometimes be too numerous and, as a result, distract citizens from the main message. We therefore need to consider what questions are important when developing instruments. For instance, should the State see the final consumer as the main target of a campaign? Household waste sorting has been one of the greatest successes of the French public policy, for people have actually changed their behaviour patterns. However, when you give it a closer look, you soon realise that this change is not due to each individual deciding to sort waste, but to collective mechanisms introduced by local, regional and state Governments. Having dustbins of different colours and different trucks turning up to collect it all has encouraged individuals to change their behaviour.

Another example relates to a fall in water consumption, at a time when water consumption was expected to rise. It was thought that people lowered their consumption after they got the right information, but a closer look reveals there are many different elements at play. Technical changes have contributed to it, because systems and equipment consume less water, and buildings are being managed differently. Housing authorities themselves have started to be more proactive and have decided to reduce

over-consumption as much as they can. This obviously has an effect on overall consumption and the result has been a decrease in water consumption. Once again, therefore, it is not merely the individual but all the other mechanisms that have boosted individual action.

In regards to energy consumption, individuals are indeed concerned about these issues, particularly the financial savings that they can make by reducing their energy consumption. However, technical progress has led to more efficient appliances and because it implies saving energy, people use it more, illustrating the rebound effect that was mentioned earlier. In this case, we can assume that social norms, such as the idea of comfort, play an important role in the practice of heating and its evolution, and cannot be reduced to the individuals' rational choice.

If we look at incentives that could lead to changes in the behavioural paradigm, social representations, such as lowering the criteria of comfort –for example, lowering the heat in houses and offices by one degree– can lead to individual effects. However, this view is too narrow. Systems are based on different kinds of equipment and have a symbolic meaning, such as what is required for a comfortable life, and new evolutions, such as improvements in heating systems, require people learn the methods that will enable them to make savings. This then brings together a whole range of issues, such as the setting of standards, changes in technical practices, and changes in collective behaviours and not just individual practices. Any new mechanism therefore needs to look at the whole context and at the way individual behaviour fits in with everything else.

I. Innovative policy tools on sustainable consumption policy – some insights from ASCEE (FP6) and CORPUS (FP7) projects

Harri KALIMO, Professor and Senior Research Fellow, Institute for European Studies (IES)

Thank you for inviting me. It is a pleasure to be here with you today, and to present you with the results of our recent research on sustainable consumption.

1 The ASCEE-FP6 project

ASCEE, which sits within Framework Programme 6 (FP6), was finalised last year and will therefore give us what has already become a backward view of policy development in sustainable consumption in Europe and provide a useful bridge to the kind of futuristic approach of the work of the Centre d'Analyse Stratégique.

ASCEE sought to provide an overview of European policy instruments on sustainable consumption in terms of what was innovative in Europe as of 2009. Recommendations could be made on the basis of its findings. We took a top-down perspective, looking at instruments developed by policymakers, rather than a bottom-up perspective of civil society initiatives. We started by examining the different instruments from a traditional approach of dividing them into instruments of command and control, economic incentives, information tools, voluntary instruments and so on. However, we then thought that there might be another way of looking at things and decided to cut the consumption process, as it were, in three ways, where we looked at the impacts that the different policy tools were having on the different phases of the consumption process.

Firstly, we created the category of instruments that focused on the awareness of the consumer prior to or after the actual act of purchase in the process of consuming.

Secondly, there were tools focused on the consumption situation, meant to make the consumption process easy, regardless of the awareness of the consumer.

Thirdly, there were instruments creating the markets behind this process so as to make the products available.

These areas of course overlap and some tools fall into two or even all three categories.

Our research revealed that there was actually very little first-order innovation in sustainable consumption tools. A few countries were clear leaders, such as the Nordic countries and the UK, as well as the Netherlands to a certain extent, but even in those countries there were not a large number of really innovative instruments. I think that this strongly suggests that there is ample room for the behavioural issues that we are discussing today. Nevertheless, a lot of second-order innovation was in place, and this has spread across Europe more widely, with some instruments being used in new consumption contexts, for example.

Collective action also seemed to be quite prevalent, recognising the limits of individual behavioural changes. Community building will be required if progress is to be made on consumption. We also found that wherever there was a sound evidence base behind the innovative tools, there was much more progress. The UK in particular had a lot of research that extended into behavioural issues on the consumption side and was making good headway at the level of the instruments themselves.

Adaptability was also important. Consumption remains a very fragmented, changing, evolutionary process where new products and trends are constantly introduced and policies have to take these short innovation lifecycles into account. As a result, tools need to be very flexible and tools that already exist need to have very short revision cycles.

We found that the social dimension was missing to a certain extent in the existing policies. Most of them have a strong focus on the environmental pillar of sustainable development, but the economic and social dimensions are also important and the policy instruments still do not focus on those areas a great deal. Initiatives to protect the environment seem to be where efforts are concentrated.

We tried to draw a system out of our findings and eventually identified four levels to analyse what developments could be made in the policy area: the policy foundation; the policy approach; the instruments themselves; and the concrete implementation of the policies. All four levels are therefore important in making progress.

- At the foundation level, we recommended that consumption be recognised as a policy field in its own right. It is a very specific topic as well as a social phenomenon and it therefore requires particular attention. Tackling individual behaviour in the midst of these collective practices requires specific attention and it is difficult to separate rational decisions from daily routines. As much as rationality is part of our behaviour, there are also things that are not necessarily rational, and that can be extremely important from a policy perspective. The functional, social and symbolic needs of people need to be understood and distinguished, and each of these aspects therefore requires specific attention. It would be necessary overall to look at the entire consumption lifecycle from purchase to use and disposal/after use so as to carry out foundational research to come up with tools adapted to the strong sustainable consumption patterns. This means fundamentally changing the way that people behave rather than just making small quantitative changes in the degree to which we are doing something. The goal is therefore to change what is being done rather than how much we are doing with certain things.
- In terms of policy approach, first of all we have the role of the public authorities, which is changing. At one level, public authorities are the regulator, but at another level they are a facilitator, which requires different skills and is more about moderation and creating intensive collaboration rather than mandating things. There also needs to be a multi-stakeholder approach, although it is important that the right people are participating at the right time. The institutionalisation of policies will also be required to ensure that policies are sustainable: a public body needs to drive the debate.
- As regards policy instruments, adaptability is key. Rapid changes in the marketplace require policy instruments to be able to follow developments. These tools also need to focus on

communities, supporting group behaviour. They need to be based on concrete evidence, and need to recognise the heterogeneity of consumers, as workers, husbands, wives and so on as well as their behaviour in their wider social relations. Instruments thus have to be appropriately tailored to needs and people's behaviour. Social sustainability can often be improved and more can therefore also be done on the social side.

- We found that although there were useful instruments in place, they were not necessarily followed up to see whether they had an impact. You have to keep on working with the tool after it has been launched to make sure that it is correctly implemented and look at how it needs to be modified, as it will not be perfect from the outset. Therefore, there needs to be much more monitoring and making of improvements than has been the case to date. Good practices could also be disseminated much more widely and used in other fields. Their diffusion tends to be limited to specific areas and there is not enough thinking about how they can be used more widely.

2 The CORPUS project

The CORPUS project is a currently ongoing FP7 Project. It is a very pragmatic initiative where we are trying to test and to create innovative means to better connect researchers and policymakers within the area of sustainable consumption. The work encompasses the three key areas of sustainable consumption policy (SCP): food, mobility and housing.

We are trying to connect the different ways that these two groups look at things: the scientific community tends to have a longer-term perspective, whereas the immediate practical needs of policymakers are somewhat different. To overcome this gap, two types of activities take place. First, we are organizing interaction exercises where researchers and policymakers work with innovative ways of dealing with a series of issues. Three workshops have been organized. We are also keeping on investigation and designing scenarios on systems and actors, policy instruments and scenarios on each of the themes of housing, mobility and food.

There is also an online part to CORPUS and anyone with an interest can go to the dedicated website (www.scp-knowledge.eu) to find out what we see as being the most up-to-date developments in the area of sustainable consumption. CORPUS is a fully open process. I therefore strongly recommend you to assess your ability to participate in the CORPUS process, as it seems very close to the agenda of today's meeting here at the CAS, both in the core idea of tightly connecting researchers and policymakers as well as in the area under analysis, sustainable consumption behaviour.¹

II. Using price signals to address climate change

Benoît LEGUET, Director, Head of Research, CDC Climat

I will focus on price signals for action on climate change, in particular price signals on greenhouse gases, and look at the tools of taxes and market mechanisms, as well as incentives and information.

• Taxes

Taxes send a very clear price signal, which is that you can emit carbon, for instance, but it will cost you x amount per tonne of CO₂. Different carbon taxes were developed in the Scandinavian countries in the 1990s, in Switzerland in 2008 and in Ireland in 2010, with the rates ranging from EUR10 to EUR210 per tonne. Our analysis of the relevant taxes shows that their effect has been positive and that the emission of greenhouse gases has been reduced. In addition, we saw that the revenue received from the taxes can be used elsewhere, which is a positive outcome, and once the decision has been made to take this approach it is easy to apply. Nevertheless, we know that it is not easy to get something like this through Parliaments, in France or elsewhere.

¹ See <http://scp-knowledge.eu/>

On the downside, most taxes have a very narrow base. Additionally, "fragile" groups have waivers, and these groups include industries that are subject to intense international pressure or industries that have an effect on greenhouse gases other than CO₂. Agriculture, for instance, is always excluded, and there are probably also political reasons behind that. Nevertheless, taxes exist and they work and they make it possible to affect behaviours. Even where the tax is paid upstream, if the price signal reaches the consumer, it has an effect.

- **Market-based instruments**

- **Quotas**

The area of market mechanisms and instruments is much more difficult to tackle. If we look at things from a constructive perspective, we find a perfect example in Europe with the EU Emissions Trading System (EU ETS), which covers some 40% of all greenhouse gases in Europe, with a price of approximately EUR15. In fact, the European Commission wanted to use taxes instead of quotas, but the member states could only reach an agreement on quotas. This scheme affects the production of electricity and other sectors such as steel, coal, paper, glass and construction. Quotas allow utilities to change their approaches and policies: the gas and electricity sectors, for example, are moving towards biomass energy. Some elements also indicate the scheme has an impact on utilities' investment choices.

Quotas are similar to taxes as they offer the same transfer advantage. In addition, there is no rebound effect: using quotas means you cannot go beyond a certain limit and when you do go beyond the limit, you simply have to cut back. However, policymakers are sometimes tempted to adjust the overall cap (i.e. the quota) in a given year or a given period to the needs of the facilities included in the scheme. It may be difficult to resist, but the goal is to have the cap reflect the environmental goal of the public policy. On the downside, quotas only affect large industrial sites, although the European Commission intends to expand it to other areas. However, whether this project is either feasible or even desirable is a matter of discussion.

All this does not change matters greatly for the consumer. Quotas were intended for intermediary and utility products, with an expected trickle-down effect on prices. As far as electricity is concerned, things are slightly different as the cost of CO₂ is included within the cost of electricity. Nevertheless, that still does not have an effect on the final user because the market price is always set by the "marginal plant"¹ and that market price is the same whether the electricity is produced from a hydro plant or a nuclear plant. The producer therefore has an incentive to produce in a greener way, but it does not mean that it changes anything for the consumer. From the 1st of January 2012, some consumers will feel the impact of the emission trading scheme, as it will integrate the aviation sector: the cost of CO₂ will then be included in the price of the ticket.

The UK meant to set up its own personal quota system. In 2004, a feasibility study showed that if this system could be developed effectively and progressively, it would be a real policy option. The downside was the cost of implementation and the fact that the tax base would be reduced, at least initially. What was positive about it was that it made people much more aware of all the issues surrounding CO₂ emissions. However, the project appears to have been shelved and nothing has been heard about it since then.

¹ In the electricity generation network, the "marginal plant" can be defined as the production unit exhibiting the highest marginal cost of production. This utility determines the marginal cost of the whole electricity production, for if the consumers' demand lowers by a unit (expressed in megawatt-hour), it is more effective to lower the power produced by the costliest plant.

- Project-based mechanisms

The second type of market instrument is project-based mechanisms. Such mechanisms can be found in the Kyoto Protocol, in which framework people are encouraged, but not obliged, to reduce emissions, and they later receive a return compensation at about EUR13 per tonne of the amount of CO₂ they save. This has had the effect of reducing the amount of CO₂ by about 500 million tonnes each year.

Once again, this relates to the production side and I think that there are interesting points to note here. First, the projects initially concerned industrial plants, similar to the industrial sites that are part of the quota system. Since then, a second generation has encompassed renewable energy projects. As an example, France is currently hosting a dozen "Kyoto" projects, in the manufacturing and chemical industry, and in the production of renewable heat. A third group of projects now deals with more consumer-based activities, such as the use of compact fluorescent light bulbs, which is one way of getting people to consume less.

In France, there is a system of certificates for energy saving, which is in a way similar to project-based mechanisms, and also encourages people to act rather than making it compulsory for them to do so. People can set up a project to reduce their energy consumption and in exchange they will be given the right to have an asset that can be expressed as a financial incentive or as an advantage. Ecodriving training is one of the initiatives that qualify for such certificates. The incentive provided represents in this case around EUR20 per trainee, which may not be a great deal, but it is a way of encouraging people to behave in way that helps them save energy and act in a more eco-friendly way.

Voluntary offsetting is a mechanism that works at the individual level, based on project-based mechanisms. The first step is measuring one's CO₂ emission – which can really turn up some unpleasant surprises. The second step usually consists in reducing those emissions "to the maximum possible extent". Emissions are then offset by investing in different projects that contribute to a concrete reduction. The voluntary nature of the mechanism indicates that it most likely affects the high income groups and most involved categories of persons rather than the lesser income groups or those that are less involved in ecological challenges. However, it promotes consumer awareness.

Explicit price signals are useful for investment, as we have seen from the examples of the quotas and the different projects: they may be useful and have a concrete effect on behaviour. In fact, changing any behavioural trend over a long period of time requires investment and policymakers have to find the right indicator to initiate behavioural changes. The price of CO₂ is an important parameter, but it should be combined with other indicators to be fully efficient.

III. Communication and education campaigns promoting sustainable development: The French Environment and Energy Management Agency experience

Patrice JOLY, Communications and Training Director, French Environment and Energy Management Agency (ADEME)

The vast majority of people are now aware of environmental issues, and some of them have started translating this awareness into action, especially by sorting domestic waste. However, polls show that the challenge is huge: people allegedly want to do something, but they are also disheartened because they think they can do little by themselves to solve the global issues at stake. They also need more information about prices, the many

ecological product or services made available to them, and the great variety of eco labels. They express distrust towards the offer that is marketed as “green”. You have to be aware of these elements when elaborating a communication strategy on the protection of the environment.

The public is strongly in favour of the general idea of sustainable development but there seems to be a vague understanding of what it means. A recent survey concluded only 3% of the French is actually able to name the three pillars of the concept. Everybody agrees that sustainable development implies a change in the way we consume and the way we produce today, but there is no consensus on what these changes involve in concrete terms.

It is therefore not easy to communicate effectively on this issue. Is it better to take a global approach aimed at explaining the broad concept of sustainable development or to focus on specific issues in order to show people how they can be eco-consumers on a daily basis?

From the start, the French Environment and Energy Management Agency (ADEME) communicated on specific subjects because communication campaigns were supporting Government plans such as the national strategy against climate change, or the national policy to reduce household waste. We tackled each of these different subjects when they were highly topical, and tried to answer as many questions as we could.

Our approach is to develop messages that can be easily understood while encouraging people to adopt environment-friendly behaviours. The long term dimension of communication campaign is very important, in order to have a deeper impact.

It is also very important to be able to have the means to provide consumers the answers they need regarding what is required of them. For this motive, we have developed a network of information centres on energy consumption. This network has been funded by half by local authorities. There are to this day more than 200 centres called Energy Info Points (Espaces Info'Energie) covering the entire French territory: they provide people with advice and information and also distribute brochures. A website has also been set up and we are also looking for partners to ensure our messages are passed on.

Three years ago, we were asked to set up the communication campaign of the national strategy for sustainable development, entitled the Grenelle de l'environnement. We were granted an extra budget to manage it, and therefore engaged in a larger reflection on environment-related communication initiatives. We came to realise that apart from short-term campaigns centred on specific topics, it was necessary to send messages on broader subjects, in order to make our initiatives more meaningful in citizens' eyes. Accordingly, we devised a generic slogan for the Grenelle initiative, and ran a corresponding TV campaign entitled The World After. It aimed to explain to people what kind of consequences their daily individual actions could have.

The campaigns run by the ADEME fit within a context which has an impact on how people perceive the messages we provide. Global events greatly influence the way they engage in environmental protection. Lately, in light of the half-success of the Copenhagen Summit, the debates on the Intergovernmental Panel on Climate Change, the debates on genetically modified organisms, and the aborted project of implementing a carbon tax in France, the context has been much less favourable.

We are often asked about the concrete value of the ADEME campaigns. We consider that two kinds of communication tools have to be combined to be effective: on the one hand,

umbrella campaigns conveying the general meaning of our initiatives, and on the other hand, theme-based campaigns, with more precise targets and goals, designed to influence specific behaviours. We always measure the impact and efficiency of our campaigns and try to check whether people have seen them, like them and remember them. Those results are also compared with other public information campaigns impact indicators.

We also use concrete indicators such as the number of people coming to the Energy Info Points, or consulting our website. We have thus noted that the Agency's campaigns had indeed contributed to promoting a government scheme of eco loans with 0% interest rate, and to adapting it to citizens' investment decisions.

Opinion polls are also helpful: they have showed that people better understand the relationship between energy savings and sustainable development, or the importance of dealing with product packaging or composting. They are also more familiar with the Energy Info Points.

Hence, the ADEME campaigns are a key incentive when it comes to encouraging the French to get informed on environmental matters consumers to ask for more information. For the time being, people recognize the role of the State in implementing the initiatives promoted by the Agency, even if they question the government's level of commitment.

The perception of the campaigns has to be monitored in relation with the specific behaviours of different groups of citizens. Some of them are really convinced by the need to act in favour of sustainable development and have already engaged in the corresponding changes, while others are less convinced by our messages. Thus, each kind of ecological initiative has to be adapted to a target audience.

A number of shortcomings need to be avoided. First, advertising cannot be mixed with information, and messages should not convey unrealistic promises. In addition, consumers should not be blamed or feel guilty. Finally, it is important to explain any instruction that is advocated: many people sort their rubbish, for example, but they are not sure why they are doing it or how much of the waste is actually recycled. It is therefore important to make citizens understand what their actions represent. Besides, the Agency is subject to the ethical code of conduct professional advertisers have accepted in the framework of the Grenelle de l'Environnement strategy.

Getting people to translate ecological awareness into environmentally-friendly behaviours requires building trust around the information we provided them with. The ADEME has committed itself to giving reliable information, promoting good practices, encouraging the general public to get involved, customising its messages according to its target audience and to working with as many partners as possible. It intends to make the most of social networks, which have become central media.

It will also continue to explore behavioural incentives, especially those that create situations where people are directly encouraged to change their behaviour –the psychological equivalent of “putting one's foot into the door” after a French idiomatic expression insisting on a dynamic way to gain entry. Such mechanisms have inspired the Challenge for the Earth campaign, launched in partnership with the Foundation Nicolas Hulot, which consisted of asking people to commit themselves to a definite number of concrete deeds. It was really successful: people who engaged in the challenge later adopted different behaviours. This “foot in the door” approach, where people would start something and we were then able to extend the range of actions, happened before a similarly-crafted Ecological Pact proposed by the Foundation Nicolas Hulot to

policymakers. Its results prove such operations can impact the media as well as politicians.

Dominique AUVERLOT

What kind of message could actually illustrate the “foot-in-the-door” approach you mentioned? Does the *Challenge for the Earth* campaign correspond to the type of communication strategy you wish to adopt?

Patrice JOLY

We have decided to craft more precisely focused campaigns that target more specific targets. Campaigns that relate to general challenges are also important, but if we really want to change people’s behaviour, we must resort to viral, or community marketing techniques, targeting relevant goals and audiences.

Open discussion

Alain MECHINEAU, Commission particulière du débat public

The presentation by the ADEME related to communication matters was a very interesting one. I looked at the figures you provided to try and analyse them. A great number of people were impacted by the campaign on energy savings (« *Economies d'énergie, faisons vite, ça chauffe !* ») to the point that they actually remembered what it is, whereas there was less of an impact for the campaign conveying general messages (« *Grenelle Environnement: entrons dans le monde d'après* »). Moreover, some 70% of people say that they are doing nothing –or do not want to do anything– to change their behaviour and only some 30% of them feel concerned and allegedly do something. How can we involve the general public in the process of sustainable development? I would be interested in seeing how France relates to other European countries in this area. Do citizens express similar ideas in other countries? One of the speakers also talked about the synergy between researchers, policymakers and citizens: it is indeed interesting, but we should not forget that researchers are not in direct contact with citizens.

Guillaume BOUSSON, Eurogroup Consulting

I think we have heard very academic presentations. Only once was the “bottom-up” policymaking approach mentioned. How can we make the most of the opportunities community approaches offer at the grassroots level rather than imposing “top-down” regulations? There may be other ways to make progress, given there are 60 million people living in France, and around 9 billion people in the world. No one mentioned the option of changing policies in the public education system. Finally, involving parents and grandparents may be useful in triggering a deep social change.

Patrice JOLY, ADEME

The first indicator you mentioned reported very good results, while the other ones reported excellent results. This is indeed a problem. If 70% of people are allegedly not doing anything in favour of the environment, it means that there is a lot that needs to be done. Getting back to social networks, it seems that there has been too much “top-down” communication to date and that, given that citizens are fed up with this approach. They would like to participate in discussions and debates.

Dominique AUVERLOT, Centre d'Analyse Stratégique

I will respond to the second question regarding sustainable consumption, an issue which will be tackled during the second roundtable. This subject has been investigated by a working group set up by the Centre d'Analyse Stratégique, whose conclusions were assembled in a report last January.¹ Among the documents that have been distributed today is a note on the major axis of the report²: the first recommendations deal with the national education system and what children should be taught. The second recommendation relates to the pioneer field experiments presently taking place, which should be supported and extended in order to make the most of collective initiative. However, we have to keep in mind that the education system already has to deal with many subjects: we cannot ask teachers to deal with absolutely everything.

¹ CAS (2011), *Pour une consommation durable*, rapport de la mission présidée par Elisabeth Laville, Rapports & Documents n° 33, La Documentation française. http://www.strategie.gouv.fr/IMG/pdf/2011-03-30_-_Rapport_Consommation_durable_web.pdf

² http://www.strategie.gouv.fr/article.php3?id_article=1341

I suggest we now stop elaborating on these topics, and start with the second roundtable program.

Second roundtable

“Green nudges”: New incentives to encourage environmentally-friendly behaviours

Participants in the Roundtable:

Pierre DECHAMPS, Adviser for Energy and Climate Change, Bureau of European Policy Advisers, European Commission

Laurent WAROQUIER, Research scientist in social psychology, University of Toulouse II - Le Mirail

Roisin DONACHIE, Senior Adviser, UK Cabinet Office's *Behavioural Insight Team*

Olivier OULLIER, Scientific Adviser, Social Affairs Department, Centre d'Analyse Stratégique and Associate Professor of Neuroscience, University of Provence

The Roundtable is chaired by Sylvain LEMOINE, Head of the Social Affairs Department, Centre d'Analyse Stratégique.

Sylvain LEMOINE

For the second roundtable, the first issue that we would like to look at is the social questions that will be of interest. Similarly to work we have conducted in public health prevention¹. We believe that these public policy strategies based on nudges can play a very important role in changing behavioural patterns so that people behave in a “greener” and environment-friendly fashion. However, the question is how far we can go with this and whether these strategies can be used together with the more classical policy measures that we heard about in the first roundtable.

I would therefore like to raise a couple of questions for our speakers, which are questions that are often asked. Are some of the new strategies – default choices or choices by comparison – not just anecdotal? Would you not say that French culture is much more interested in the norm and therefore would people really go for these green nudges? In addition, how can you make sure that there is transparency so as to avoid any accusation of manipulation? What is the point of spending so much time and energy in getting people to change their behaviour? Would it not be better to educate people from the outset, when they are much younger, rather than taking this action with adults and therefore trying to cure rather than prevent?

¹ Centre d'analyse stratégique (2010), « Improving public health prevention with behavioural cognitive and neuroscience », by O. Oullier and S. Sauneron, Report #25 (165 p.), http://www.strategie.gouv.fr/IMG/pdf/NeuroPrevention_English_Book.pdf

Opening speech

Pierre DECHAMPS, Adviser for Energy and Climate Change, Bureau of European Policy Advisers, European Commission

The Bureau of European Policy Advisers has been in existence for some years now, having been set up by Jacques Delors when he was the President of the European Commission, and our role is to provide policy and political advice to the European Commission. We currently provide advice to Mr. Barroso and are directly under his authority. We are a small group of about 30 people in total, with 15 of us working as advisers.

Nudges are extremely important and are something that concerns climate change directly. At the end of 2008, Europe was equipped with the 20/20/20 for 2020 policy, where the mix would be improvements in energy efficiency of 20% in 20% of renewable energy by 2020. In addition to that, we also have short-term goals. Of course, this all has to be looked at in the much wider context of climate negotiations, energy dependency and energy supply and things can change suddenly where you are forced to confront crises relating to security of supply, climate and competitiveness. In the long term, we have the G20 goal of reducing greenhouse gas effects by 20% and in France they talk about the factor of four for developed countries, with Europe having to achieve that level by 2050. In fact, this was adopted yesterday by the European Commission under the title of *Roadmap 2050*. These are very ambitious goals, and technological progress, while important, will not be enough – and that is without talking about the rebound effect.

Another aspect that has probably not been developed sufficiently is the role of citizens in terms of how they must be stakeholders and how individual behaviour needs to change. When I talk about energy policy, I often say that our 2020 objective will be achievable if we have a few wind farms and solar panels in place here and there, but that we will then continue to use our coffee machines in the same way as we have always used them. However, if we are talking about bringing down emissions by 70% or 80% by the middle of the century, we are all going to have to be more careful and will need to change our behaviour. We have seen that there are different ways in which we can get people to change behaviour, such as speed warnings on the motorway, which is regulation, price signals, which is more or less a direct effect, and the Emissions Trading Scheme, which has its advantages and disadvantages. There are also softer methods – the nudges, which provide a kind of lift or support.

A relevant quotation when referring to a nudge says that there are two different kinds of creatures – econs and humans. Econs are the children of *homo economicus*. They are careful about their choices, perfectly informed and selfish. They are only happy when they are sure that everybody will just allow things to drift. These are individuals that you find in books on economics and in Milton Freedman's neoclassical thinking. What is therefore being stated here is that the human material that we are dealing with is not the same.

The second group is those who are ill-informed, do not have enough time to take crucial decisions, spend too much time on minor decisions and are lazy. These are not the best people at running their lives and making the right choices and the environment in which they live is not neutral. Their choices are determined much more than you would think. The authors of this book say that both the econs and humans respond to incentives, but

that they are influenced by nudges. I think that part of us is therefore *homo economicus* and part is *homo ordinarius*.

The nudge is like a third way. It is complementary to the neo-conservative approach of Milton Freedman, but there is also a slightly more left-wing, regulatory approach from a policy point of view. It is therefore not trying to replace, but is complementary. It is important to have communication, information and education if you opt for this approach and to have a slightly more devious, convoluted and indirect way of persuading and to find ways of getting your message across in a very sharp and direct manner. In a traditional goldmine, you have to extract a tonne of stone to get five grams of gold, whereas in one tonne of used mobile phones, there are 150 grams of gold, and I think that this is something that will have much more of an effect on people. People would possibly therefore prefer to recycle their mobile phones rather than just throw them away. That is what I mean by the indirect ways of getting these messages across.

Going back to the issue of climate, we have diets that are very much dominated by meat; instead of telling people not to eat so much meat because that will save the climate, we could simply tell them to eat less meat because it is better for their health, with a footnote saying that it is also good for the climate. In this way, you can combine both messages. In terms of the information given to citizens to get them to change behaviour, another important point is that messages must be positive and feasible. For a politician to take a message on board, the message must not only be feasible and positive, but also not be considered a regression or punishment. This takes us back to the question of values in the old-fashioned, ethical sense.

I have talked about the European policies that are influenced by all of this, where we can make quite a lot of progress alongside regulations and price signals. I have also talked about the 2020 goals and the 2050 Roadmap that has been adopted, and I would also like to briefly mention that we are preparing for June with regards to the efficient use of resources. This relates to growth for 2020, which will be intelligent, sustainable and inclusive, and for it to be sustainable we are preparing a resource efficiency fact sheet which will have information on recycling and other things.

Responding very briefly to some of the questions that were asked earlier, this is certainly not something that is anecdotal; it is complementary. However, as I am not French, I do not think that I can give an opinion on whether France has based itself too fully on standards and norms. Transparency is an area of risk and it is important that this is not seen as manipulating public opinion. Finally, it is certainly important to invest in education, communication and reaching out to future generations.

In any case, with policies on climate and the environment, you are talking about solidarity with future generations. However, that will not replace what we were talking about earlier. We have complex issues to deal with and we need a wide pallet of answers to respond to them.

I. Attitudes and engagement: How can we encourage citizens to adopt environmentally friendly behaviours?

Laurent WAROQUIER, Research scientist in social psychology, University of Toulouse II - Le Mirail

In looking at how we can encourage citizens to adopt environmentally friendly behaviours, I would like to start with the concept of attitude. Attitude means that you have a mental representation that sums up your assessment of an object and scientists are very interested in attitude because it establishes a close link with behaviour and they believe influencing attitude can have an affect on behaviour.

Attitude is made up of three things. Firstly, it is evaluative – do I like nuclear energy? Secondly, it is cognitive – what do I think about nuclear energy? Is it clean? Is it dangerous? Thirdly, there is the behavioural element – what I am going to do? Am I going to vote or donate or be an activist and go on marches?

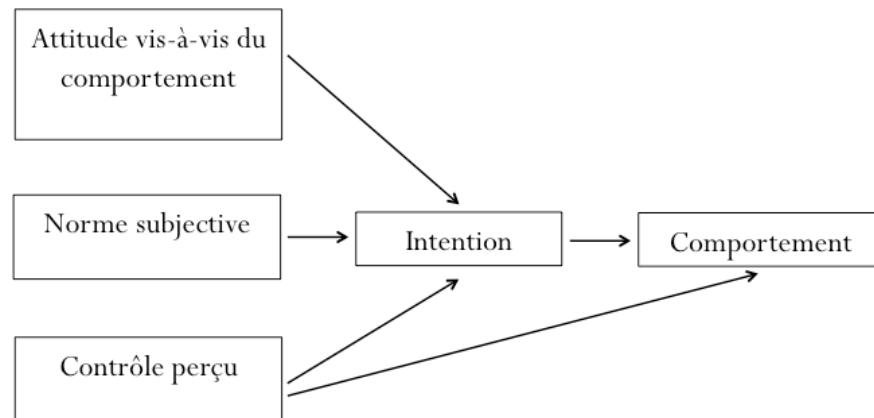
Scientists use questionnaires to measure attitude and a number of questions look at how attitude can be measured. For example, if you are dealing with ecological questions, you can ask whether people agree with raising the tax on fuel and whether they compost.

People have also often looked at whether attitudes can predict behaviour. A series of workshops were run where it was stressed how important it was to reduce energy consumption and even though the scientists managed to get people to be more aware of the issues and have a real desire to change things, when you looked at energy consumption you could see that there was no real, tangible lasting effect.

Other people have said that if you want to be able to predict behaviour resulting from attitude, you have to measure the variables for a specific attitude as it is only with a specific attitude that you can get specific behaviour. For example, if someone is using contraception, it does not necessarily mean that they will continue to use it for the next two years. However, the general attitude of using contraception would mean that there would probably be a tendency to keep using it for the next two years.

General attitudes could possibly allow you to predict a whole range of behaviours. Instead of just knowing whether you are going to sort your waste on Tuesday, you can look at all the other variables, and these other variables, which are part of the planned behaviour/attitude theory, will give you the answer to that. For example, you will look at what other people feel about the behaviour, the subject of standard and any control, if it is perceived, and what effect that has on intention and behaviour.

Planned behaviour theory



In another example, we can see the effect of general behaviour in a panel (Weigel & Newman, 1976). People completed a questionnaire and depending on their answers they were contacted again several months later and a follow-up was carried out on their behaviour. If we look at individual behaviour, we can see that predictability is quite low, despite it actually being easy to predict. However, if we look at group patterns, there is improved predictability.

Looking at how changing attitudes can change behaviour, we first of all have cognitive means, where persuasive messages can be sent. Here, you have to look at the source of the message to see whether it is credible and attractive. There is then the characteristic of the message in terms of how convincing it is and the issue of whether, for example, you should use fear to persuade people, as in anti-smoking campaigns. Thirdly, there is the level of the receiver of the message in terms of education, political position and so on.

You can also play on the affective side of things to change behaviour. Emotional and affective aspects are often used in advertising, where you may have a beautiful image, such as a beach, while what you are in fact trying to sell is a car.

The third aspect is behavioural and here I would like to take a look at cognitive dissonance theory. There is a link between our attitude and behaviour - there is therefore a link between my attitude to ecological questions and my behaviour. When the two are not compatible, there is dissonance and that creates an unpleasantness that has to be resolved, and there are different ways of trying to change this – either by changing attitude or behaviour.

In one study (Kantola, Syme & Campbell, 1984)¹, scientists chose participants who were willing to reduce their energy consumption but were also good consumers. A second group was given advice on how to reduce their energy consumption and a third group was given both advice and feedback, where they were told that their energy consumption was much too high. A final group – the dissonance group - had stated in the first stage of

¹ Kantola S.J., Syme G.J. and Campbell N.A.(1984), "Cognitive dissonance and energy conservation", *Journal of Applied Psychology*, 69, p. 416-421.

the study that they were in favour of reducing energy, but their consumption was much too high and there was clearly something wrong there.

The results of the study showed that the level of consumption was lower for the dissonance group and by just putting in this small piece of extra information their pattern of consumption changed. This is quite interesting because we can see that while the cost is not huge, it has a real effect on behaviour.

The second variable, which I spoke about earlier when we were looking at the planned behaviour pattern, is social standards. There are descriptive social standards - which is what people do in a given case. For example, the notice in a hotel room tries to get you to reuse your towels. We took what hotels normally say about this and added an extra message which said that 75% of guests actually use their towels more than once (Goldstein, Cialdini et Griskevicius, 2008¹). Just adding that extra piece of information led to a 10% increase in the number of people who reused their towels. Once again, therefore, a minor input led to a real result.

The psychological theories that I have covered briefly here represent a reference framework that allows us to understand how persuasion and influence can be used. These theories are used in marketing quite commonly, but they can also be used to induce people to behave in a greener and more ecologically friendly way. We have looked at two different powerful tools – social norms and cognitive dissonance – which allow behaviour patterns to change and we will be hearing again later about nudges, which are different techniques.

II. Applying behavioural insights to environmental policy: The UK context

Roisin DONACHIE, Senior Adviser, UK Cabinet Office's *Behavioural Insight Team*

After the General Election in May last year, the incoming Coalition Government committed to the idea that there had been too much regulation in the last decade, which had not necessarily helped us to realise our public policy goals. In opposition, David Cameron was convinced by the theory of nudge, as described by Richard Thaler and Cass Sunstein in the United States in their book². Richard Thaler is now an adviser to the *Behavioural Insights Team*. The Coalition has therefore agreed to look at ways to encourage, support and enable people to make better choices for themselves based on various theories on behavioural economics as applied to public policy.

Within the political landscape, nudge theory read over into other thematic areas such as wellbeing and the *Big Society*. Behavioural economics has been around for years – it's nothing new – but its application to public policy goes well beyond marketing; we're trying to provide a strategic application to public policy. We are starting from the basis that we know that information –or lack of it– isn't the problem. Take the issue of obesity, for example. In the UK, British people score highly in terms of knowing what a healthy diet is – look at its ranking compared with other European countries, but we still have one of the highest rates of obesity in the EU. There is clearly a mismatch between information and action; policy makers should therefore think about how we enable people to make healthier choices around food and exercise going with the grain of how people act, rather than how we would like them to act. Most people of course don't want to be

¹ Goldstein N.J., Cialdini R.B. and Griskevicius V. (2008), "A room with a viewpoint: Using social norms to motivate environmental conservation in hotels", *Journal of Consumer Research*, 35, août, p. 472-482.

² See footnote 1, p.8.

overweight, but the effort it takes in the short term –the sacrifice of forgoing certain foods and the effort of going out to exercise– looms more largely in people’s mind than the medium to long term advantage of being slimmer and potentially healthier.

This takes us back to the point that Laurent just made in that you cannot change people’s minds substantially, but you can change the environment within which they take decisions, and that is what we are attempting to do.

MINDSPACE¹ is a government report which applies nudge theory into public policy making. It’s an accessible document for UK public policy makers. The acronym represents the nine thematic themes that are based on behavioural insights. Starting with Messenger - crucial. Identifying the right messenger for certain policies is critical; we know that Government is not always the best messenger in certain policy areas – communicating the realities of teenage pregnancy for example is far better coming from someone who has experienced early parenthood. We’re working on a report at the moment around encouraging environmental behaviours; we need to think about who are the best messengers. We also need to think about what are the right incentives for being green. We heard from Benoît about classic tax incentives, but in our work on what is known as the Green Deal, we are looking at a range of different incentives, including cash in kind incentives and rewards which all of the community can use, like a communal playground. We know that people like to go with the mainstream –and to replicate social norms– that is why we are thinking about how we can make consumers’ comparative consumption more visible to them.

Then we come to salience where by we need to make information as clear and meaningful as possible. What does depicting CO₂ and kilowatts per hour mean to most people? Very little. Yes if we want people to engage better with their energy consumption, then we need to think about other ways of communicating with them –more around costs and savings.

So, the team was created seven months ago. We have a Steering Group which comprises the Cabinet Secretary, Richard Thaler, Permanent Secretary in Number 10 Downing Street and the Director of Strategy in no10, Steve Hilton. We have been tasked with applying behavioural insights to green policy with a view to helping us realise the Coalition’s commitment to the Green Deal, which will be rolled out next year. The Green Deal is a mechanism where suppliers (and that is not just utility companies) can offer free insulation and other green products and services at no upfront cost to the individual to warm their home and potentially make energy and cost savings. The model works – the so-called Golden Rule - whereby suppliers make back their money through the efficiency savings gained on energy bills through having a more energy efficient home. However, consumer insight tells us that most people don’t want the disruption of people coming into their houses, even if they are giving them something for free and they frankly environment concerns are not a significant motivating factor. We also have to be aware of unintended consequences here – the boomerang effect. Some evidence shows that, for example, even if you make someone’s house warmer, people can tend to keep the thermostat at the same level and wear fewer clothes. We don’t really want a scenario where people are at home sitting in a T-shirt in the middle of winter, for example.

This Government has committed itself to be the greenest Government ever and the Green Deal will be one flagship policy supporting that commitment. We have therefore thinking about how the various themes within MINDSPACE can be applied to ensure that the Green Deal is taken up. One of policy areas that we are looking at is smart meters, which provide real-time energy consumption

¹ <http://www.instituteforgovernment.org.uk/content/133/mindspace-influencing-behaviour-through-public-policy>

in people's houses. This will be rolled out next year through the utility companies and we are working with to ensure that these meters are as salient as possible.

We know that people really dislike local taxes and the evidence of some of the utility companies shows that if people are offered relief on, say, one month's Council Tax, they are very likely to take up a green service. In this case, therefore, the green deal supplier could pay the council tax and we would like to test the impact on uptake of that intervention.

Choice of architecture is central to the whole thesis of nudges and is essentially about making it easy for people to do the right thing – making it easy for people to decrease their domestic energy consumption without having to think about it. Starting with the reality that most people are not very engaged by what energy they consume per month, let alone per hour, we would like to enable people to manage their consumption without having to think about it. One area we're thinking about is the master switch where, like in hotels, when you remove a card from the wall all non-essential electricity is turned off. We aim to pilot a master switch in social housing, to see if it has any impact on domestic energy consumption. In partnership with a Local Authority and the technology company, we are working with one control group that has the device and another that does not and will compare things after X months to see what the implications may be.

Energy performance certificates (EPC) are guided by the European legislation. Most EU countries have a graph which depicts homes somewhere on the A to G rating. However, these graphs are quite meaningless and people do not act on them to green their homes. We will aim to redesign them in advance of the Green Deal as an effective prompt for taking up the Green Deal. We would like to test the effects of putting cost and savings up front on the first page of the EPC, since we know that cost is what motivates people most. If you work out what the relative running costs of buying or renting a property are over five years and put that on the energy performance certificate consumers will be able to make a more informed choice about the property they are renting or buying.

Those are some of the things that we are rolling out in terms of what we want to evaluate to see whether there is an impact on green behaviours. The Government itself has a commitment to reduce carbon emissions in the Government estate by 10% and we will report on that in May of this year. We have been thinking about some creating incentives to enable government departments to realise the 10% target.

The purpose of our team is to trial these initiatives so that, after two years, we will potentially have proof of concept that some interventions based on behavioural insights work and help us to achieve our public policy goals.

III. "Green nudges": Benefits and limitations of field experiments

Olivier OULLIER, Scientific Adviser, Social Affairs Department, Centre d'Analyse Stratégique and Associate Professor of Neuroscience, University of Provence

Through this brief presentation, I will summarize the main ideas of strategic newswatch #216¹ that I co-authored with Sarah Sauneron from the Social Affairs Department and that can be found among the publications of the Centre d'Analyse Stratégique on its website.

¹ Centre d'Analyse stratégique (2011), *Newswatch* n° 216 « "Green nudges": new incentives for ecological behaviour », Oullier O. & Sauneron S., march.

The main goal of our paper is to show that the potential attractiveness and value of results that come from field experiments based on what we refer to as “green nudges” are to be probed in light of constraints that are intrinsic to public policy making. This is particularly the case when one wants to map an intervention that turned successful on a rather small social group like a neighbourhood onto a larger population such as a whole town or state. We wonder how the applied knowledge in psychology and behavioural economics can be coordinated with existing and more classical policy –some of which being sometimes quite efficient like monetary incentives- in order to favour behavioural change towards eco-friendly daily habits.

Information processing, habits and everything that makes us humans

The idea that an informed person would make the right choices for her health and well-being and, by extension, to preserve the Planet is a misconception. However, as pessimistic as this statement may seem, in no way does it constitute an appeal to stop informing people. Quite the opposite actually. Providing accurate information is not only necessary but constitutes an obligation for the Government. Hence, tremendous efforts should focus on making it more understandable and facilitate its delivery and processing to and by the citizens.

One of the goals of the use of behavioural sciences in public policy is therefore to improve the content of information and facilitate its broadcast. Their insights must help people reflecting on their everyday actions. The goal is not only to lead citizens to adopting eco-friendly daily behaviours promoting their own interests as well as more collective ones but to stick to such good habits over time.

An important goal is to see how to bridge the gap that often exists between (declared) good intentions and (effective) daily actions. This chasm results primarily from a misperception of risk (as well as benefits), which varies according to the temporal proximity thereof. It is very difficult to see what might be the consequences of our actions on the long run, might they be eco-friendly or harmful to the environment. However, if something helps us to see their (real or simulated) effects, we will be more inclined to change our behaviour.

In general, we are reluctant to modify our behaviours. We generally exhibit a strong inertia to change our daily routines. This, in addition to financial or time costs associated with adopting environmentally virtuous behaviour, constitutes a real obstacle against the choice of car pooling, biking, the sorting of garbage, saving energy etc. The fact is that the more pro-environment actions require us to change our daily habits, the more difficult to embrace.

If we manage to finally curb our behaviours, other problems emerge such as the usual questioning of the real impact of our own individual actions compared to what the rest of the world is doing. Indeed, it is quite legitimate to wonder whether, as individuals, we can make a true difference if we have the belief that everyone else does not care.

Add on top of this paradoxical situations that are sometimes daunting, and leading people to change their daily behaviours to environment-friendly habits is definitely hard to reach. For example, when someone takes a bike in the morning to go to work and is stuck in a traffic jam, he is struggling to breathe, while the person driving a car with closed windows might not encounter such problems! Yet it is the biker who has the right behaviour, ecologically speaking. The paradox is that by making an effort, that eco-friendly person puts his health at higher risk compared to another individual driving a motorized vehicle.

Behavioural insights

What is the added value of behavioural sciences to sustainable development? Behavioural sciences are plural and complement each other. Here we are talking about psychology, sociology, economics, neuroscience, organization, marketing and consumer behavior. Nudges constitute their more applied operationalization in policy making. The label "nudge", coined by the pioneers Richard Thaler and Cass Sunstein, like brain imaging, is quite appealing and allows to generate renewed interest for many results and theories from psychology and behavioural economics known for years by experts in behavioural sciences. Still, nudges truly constitute an interface between academic findings and field applications in (public) policy making that is worth considering. Here are a couple of examples.

- Eco-friendly default options

Whereas a bank in the US will send you a statement in electronic format rather than on paper, the contrary is true in France where one needs to go through an additional process to stop receiving printed statements; this situation affects conservation of trees and energy storing, among other things¹.

In the same vein, Rutgers University in the United States has saved many trees by requiring that all printing and copying include two pages per sheet or are two-sided. These actions may seem obvious but their effects are measurable in the short term. Such an arrangement has been running in French governmental institutions since 2009 thanks to the initiative known as "Exemplary administration" launched by the Prime Minister.

Another example is having to ask, or even pay, for plastic bags in supermarkets. Measures to ban them or, at least, to impose the effort to ask for them has had significant environmentally positives consequences that could be measured in China, Italy, the United States and France.

Overall, when possible, options should be more eco-friendly by default so that behaviours favoring sustainable development become our "living default options".

- Perceived social norms

One additional point already mentioned is the power of perceived social norms, that is to say, the influence of comparing our own actions to those of others.

In California, a goal has been to convince people to favor the use of fan rather than air conditioners, the former being less energy demanding. Households participating to the study were divided into four groups. The first group was informed that using the fans would save them a significant amount on their electricity bills. The second group was made aware that using the fan allowed to emit less CO₂. The third group received a leaflet explaining that using a fan is the best eco-friendly behaviour to adopt. The last group was informed that the most popular behaviour among neighbors was the use of the fan. The study concluded that the group informed of the behavior of neighbors was the one exhibiting the most significant decrease in energy consumption.

Another example is the strategy that has been adopted by OPOWER, a private company that, among other interventions, informs its customers through their utility bills of their own

¹ This does not mean that electronic invoices do not lead to different environmental problems: paper is saved, trees are saved but it raises the issue of storing digital data, increasing the number of computer servers, the amount of energy they require etc.

behavior as well as what other households are doing. The bills also indicate the best target consumptions to achieve. Field experiments that lead to this intervention revealed that informing people on what their neighbors do causes a change in their behaviour, but not necessarily positive. People who consume too much energy tend to reduce his consumption, which is exactly what the green nudge is meant to do. But a boomerang effect is also found: if a consumer is commended for his good energy management, he tends to relax and increase their energy consumption! A similar effect can be found in dieting people when they drop a lot of weight and think they can loosen their diet for a little while. Fortunately, another nudge allows for countering the undesired effect of the first one. By using emoticons ☺ ☹ and therefore embodying the feedback, those households that already belong to the right category of consumers keep on their efforts to save energy unlike in the previous case.

Please allow me to briefly go back to the example introduced earlier by Laurent Waroquier. When people in hotel rooms are told that most of the previous customers have used their towels more than once, themselves are more likely to do so. Ambitious statistics (75%) are given, knowing that they will encourage the customers to reuse towels. However, from a practical standpoint, it is worth asking how it is possible to give the results of a study before it was even conducted? For instance, for the green nudge to work, one needs the statistical result of towel reuse to be displayed while, at the same time, in order for the statistic to be so high, one needs the nudge to work.

- On transparency and mapping to larger scales or different cultures

The question is therefore whether it is acceptable for a governmental institution to use voluntarily high data to prevent people from wasting energy and water given the mandatory transparency.

As public policymakers, we must develop behavioural incentives efficient enough that even when knowing the mechanisms, citizens choose to follow. Especially, the Government cannot and must not use false or fabricated information even if the purpose is to encourage citizens to save energy. Beyond the transparency requirements, if the customer already knows the strategy and that it happens to be based on the presentation of artificially boosted statistics, the green nudge is likely not to work. In the context of the intervention on utility bills, even when consumers are aware of the nudge, it remains efficient despite the lack of surprise.

Another problem then arises: that of large-scale reproducibility. Thus, the example on sorting garbage -cited earlier during the introductory remarks- does work at the neighborhood level but not that of the city. Mapping or adaptating green nudges to larger scales is often problematic and constitutes so far a virtually unexplored field of research that should receive strong interest in the future.

It is often said that nudging is quite inexpensive. This can be true if one refers to only a few words to add in a letter or an invoice. But at the larger scale of (inter)national sustainable development public policy, this might be different. There is a cost in time and money to develop, implement and evaluate the green nudge, needless to mention potential post-evaluation adjustments to the existing strategy.

Another pending question is whether green nudges would work in different cultural systems. Most of the examples of efficient green nudges that we have to date come from North America or the UK. Do they work elsewhere? It seems so. In China, informing farmers of good agricultural practices of other farmers in their area turned to be much more effective in changing their own practices than explaining them their current actions

were harming the environment. However, there is little data so far that allows to address this particular issue at large.

Green nudges, design and the future

Innovative strategies developed thanks to behavioural insights are intended to supplement or improve existing policies for sustainable development, but not replace them. This supplement also involves the integration of new technologies at the heart of homes as well as in public places.

As I mentioned earlier in my presentation, it is often difficult to estimate the long-term risks and benefits of our actions. Smart meters, socket outlets with display of consumption or other remote displays in living rooms can help counter this cognitive bias. They allow to inform the consumer in real time about his energy consumption but also to provide prospective information about what the billing would be. The immediate consequences of consuming behaviours are thus becoming more visible.

Finally, another example is the very design of a faucets installed in public toilets that stop the pooling of water when one takes some soap and therefore allows to minimize water wastage.

There are plenty of examples and more are being developed each day. Green nudges are therefore the results of converging efforts and insights from behavioural sciences, design, technological innovation and also common sense. Ironically, behavioural and technological innovations also face their own psychological and practical barriers. In fact, everything I just outlined may often seem to be obvious and distressing for many. How many times have I heard “yes we know that”, or “this is obvious” when I was trying to convince executives to consider nudges? However, if all these actions were already known, so simple, banal and obvious, why are they not better implemented?

This is why there is an urgency to create units that have some leeway to intervene, as this is the case in Britain with the *Behavioural Insights Team*. The Center for Research on Environmental Decision¹ at Columbia University should also be considered as a benchmark to follow, with respect to the coordination of academic research in behavioural sciences and policy making.

As the examples we have discussed², social psychology and behavioural economics are increasingly considered by public policies. This is a good thing but yet not sufficient. In addition, it is also necessary to understand the individual in its complexity and specificity. When developing strategies for public policies, considering that the population is homogeneous most often leads to failures. It is the key point of integrating a field that is currently not enough convened in public policy: psychology of individual differences (known as differential psychology in France). The latter focuses on intra- and interindividual differences. Its contribution will be essential if we want to implement green nudges (or others) that will be effective on social groups of different nature and on different scales.

¹ <http://www.cred.columbia.edu/>

² For a list of the « green nudges » quoted in this presentation, see *Strategic newswatch* n°216 (appendix of the proceedings).

Open discussion

Jérémy GALLET, EDF R&D

We heard a lot about energy bills and comparing your energy bills with these of your neighbours. The reduction in energy consumption can be quite easily compared, but data collection costs are actually quite expensive. You need a lot of data to compare your energy consumption with that of your neighbours, particularly if they are energy efficient, for example in terms of house size, and all kinds of complicated methods are involved. There is also the question of who collects, stores, and uses this data. We have reduced bills by 1-3% compared with the average French consumer; this does not mean we are on the verge of solving these problems.

Sylvain LEMOINE

Such a reduction may seem small individually, but it is quite impressive at a national level.

Guillaume BOUSSON, Associé énergie et développement durable, Eurogroup Consulting

We have talked a great deal about coordination between states, but when will there be coordination within France? We are given the impression that there is coordination between ministries, for example. When will the collaborative model be spread to other countries in order to demonstrate that it is really efficient?

Sylvain LEMOINE

There are many ways of answering that question; the simplest is to say that you are absolutely right. What interested us when we went to London, is that David Cameron decided to set up this unit close to 10 Downing Street. The lesson is that if you want to change behaviour, you also have to change the way government bodies perceive things, and that is quite positive. There has to be a general policy for the general public, but also for ministries, to ensure that these messages get across to the different ministers and commissions. We are trying to stress the importance of that among the different ministries here.

Michèle PAPPALARDO, General Commissioner for Sustainable Development

We do this in two different ways. First of all, there is the operational side of the ministries; we have developed a nudge whereby we use a plus and minus system for each ministry. We establish a list of very specific actions with indicators which they have to achieve, and my office is responsible for collecting and checking the information. A ministry can be credited with funds if it achieves its goal, whereas one which has not achieved its goals may not receive the same budget. This kind of nudge works really well, because all the secretaries-general discuss these indicators at our meetings and begin working on them once they are set. Therefore, this system gives us real results which go beyond indicators, and things do move along once we manage to get our foot in the door and push our way in. However, each ministry works differently.

The other aspect, which is much more important, is the National Strategy for Sustainable Development. We are into our second chapter, and each ministry gets a report on how sustainable they are. Journalists follow this very closely when we say a ministry has not lived up to its commitments. Transparency and visibility to the general public is the best incentive, because the general public responds by saying that some of the decisions have not been consistent.

Isabelle BOUDARD, Comité 21

I was wondering whether one of the limitations was that you are invading their privacy and telling them what to do. Are you not pushing people into this behaviour, and will this not have the effect of making them more sceptical and more inclined to resent interference?

Sylvain LEMOINE

You are right, and that is why we have to talk very honestly and openly about it. We can show people that these tools are useful and can work, but we can also show them that we are not sages with answers to everything. I have worked for the CAS since 2009, and I do not think we have had any nudges ourselves, so we have a lot to learn. The first people we should try to nudge are those who set public policies, if there is a danger of our seeming too controlling; in any case, failure is not a disaster, because you learn a lot. The idea is to find the right way of giving information to people, and you should not use a tone that is likely to irritate people.

Olivier OULLIER

We still have a lot to learn when it comes to efficiency. First of all, we have to apply our behavioural strategies to people in charge of public policy in order to “nudge” them to give green nudges a try! What we are missing, especially when compared to the UK, is the possibility of carrying out tests on small sample groups and then presenting the results of our actions to people in charge of sustainable development policy at the Government level.

Speaking of the privacy issue, we must be careful not to bother people, and find the correct strategy to accompany them. Any peremptory affirmation must be avoided, people have the feeling they are lectured on many topics (health, driving, ecology, etc.) and they are tired of it. On top of that, it is difficult to find a good argument that can be applied to the entire population without bothering!

Eric FOUQUIER, Thema

I was surprised by the hotel example, because you are basically calling on people to follow a standard or norm, whereas countries all over the world are trying to get away from this, for example Japan and China. It is important to take a philosophical approach as well, and to realise the effect on people of using nudges.

Sandrine GARNIER, Mobilettre.com

I have a question on behavioural changes. Are these changes accessible to all? For example, in order to change from an internal combustion powered car to an electric car you have to be able to afford it, and in order to use a certain form of transport, you have to live in a city that has it. Should you not be talking about social as well as cultural transition?

Bernard LEON, Association Française des Ingénieurs et Techniciens de l'Environnement

I agree that we should really be discussing the role of people, and that it should be a question of relying on people’s intelligence instead of standards or norms. We are dealing with all these different questions in a very theoretical manner, whereas it is through reaching out to people’s intelligence that we will get them to take action.

A participant

Another point that was not sufficiently developed was the consistency between the messages we receive. Behaviours change, of course, and we have seen this in terms of drinking and driving, but it is difficult to manage a flood of contradictory messages, such as all these ads about powerful

cars alongside messages about road safety. The other question is why the temperature is 28 degrees when we are talking about green issues; it is ridiculous, because I have saved you about EUR5 by turning off the radiators. It would be a good idea to manage such issues in the ministries, because that is a rational way to behave; we will not change people's behaviour if we do not do that.

Emilie CHAPUIS, Consumer behaviour specialist in a design agency

I am in charge of consumer behaviour in a design company. What is the role of design in all of this?

Sylvain LEMOINE

About calling for intelligence, that is exactly what we are trying to do with modesty. Those who support nudges are not trying to find a global answer. You have to carry out trials and see what works in some places and doesn't work in other places. The stakes consist of dealing with the complexity of situations.

When speaking about social transition, we indeed do have to avoid speaking only to a public composed of "*bobos*" or young intellectual adults who are quite well-off. We must take into account the consequences of changes in behaviour. There may be hidden costs, and we must display them in all transparency.

The question of consistency of the messages is important, and this was illustrated a few minutes ago by the ADEME representative. The ministers must all agree when they are communication to the same publics.

Olivier OULLIER

I wanted to come back to this "matter of intelligence". Public policy making is about concrete actions and variables that can be quantified. The latter will allow to rate precisely whether the strategies employed are efficient or not and if they comply with mandatory transparency and evaluation processes. Hence, "relying on people's intelligence" is something one can wish, on a more operational level, the concept of intelligence is very hard to quantify and is therefore too blurry to be used efficiently as a variable in public policy making.

Speaking of design, today ergonomics, design and architecture go hand in hand with behavioural sciences. Through several examples, we have seen how important the social environment can be. The physical environment is as important, this is why, in our multidisciplinary approach, we can not make any progress without taking into account this notion of design and everything that goes with.

Dominique AUVERLOT

This does absolutely not contradict all these messages we conveyed in the two recent reports on new mobilities' and sustainable consumption that we published. We pointed out the interest in observing grass-roots initiatives to better use them and enlarge them.

We are defending another approach with nudges: this would allow energy savings of 1 to 3%, which could seem to be nothing, but which does represent a part of the path to meet the 20% reduction by 2020.

Moreover, we have appealed to the intelligence of people. The different messages lead them to reconsider the question, which will allow a better acceptance of all the actions linked to climate change. So it's a win-win situation.

Concluding remarks

Michèle PAPPALARDO, General Commissioner for Sustainable Development¹

Thank you for all of these presentations.

I would like to congratulate our Anglo-Saxon colleagues for their ability to translate matters into relevant general concepts. Their reflections are truly stimulating. In France, we are currently implementing policies on similar concepts, but we have done so without asking ourselves as many questions along the way. We are wrong. I never stop telling my staff that we should conceptualise our work and our reflections much more.

I would also like to congratulate them for having coined this word, “nudge”. It sums up a concept we have spent three hours trying to define. Sylvain Lemoine eventually gave the best definition, and he used at least three sentences.

Throughout our discussions, we have repeatedly referred to problems related to consumption, but interventions based on nudges go way beyond this area: they can be used to modify not only our consumption modes but all our behaviours. The citizen is not a *homo economicus* with an entirely rational behaviour, otherwise this would be a simple situation and we would already have found loads of solutions to ecological issues. He is not a *homo ecologicus* either; would he be one, you would just need to tell him that changing his behaviour is good for the planet. However, this does not mean that citizens are irrational or that they oppose ecology. Citizens are complex; hence, there are many different ways of convincing them.

People have multiple motives for deciding to act, and these instincts have to be targeted in order to encourage them to evolve. Health is often a concern to them, for instance, so it is important to demonstrate that what is good for one’s health may also contribute to the preservation of the environment. As people also tend to do what they like, linking environment-friendly behaviour with the concepts of well-being and happiness may be a good idea.

We can also say that people, especially the French, do not like the idea of behaving like everybody else. So nudges have to be carefully selected, and some of them may not be implemented in the same way in France. If you tell to some people that their neighbours behave in a certain way, they will do the opposite, on purpose. Some people are nevertheless easily convinced to mimic the others. It is necessary to show these citizens they can succeed in changing their behaviour because others have done so before them, and how effective such a change is. Many consumers have been telling us they cannot act against excess packaging, for instance, claiming they have no choice. In fact, they do have a choice and can decide to pick loose products or unpacked cheese. Today, producers have become aware of these evolutions in consumption modes, even if it concerns only a minority of persons: one can buy yogurts or toothpaste, if one decides to.

It is not only a matter of demonstrating how “one can behave like everybody else does” or “according to new routines others have already managed to adopt”, but also of showing the benefits that can be derived. Those who have acquired ecological reflexes may for example be saving money while preserving the environment.

The question is in knowing whether these messages are based on a certain kind of manipulation. If we come back to the case of the hotel falsely claiming that a majority of its guests have reused

¹ Michèle Pappalardo was in office as the French General Commissioner for Sustainable Development when the workshop took place.

their bath towels, while there is a degree of it, we can definitely say it is the case. This is an important limit for the method: if the consumer realises he has been lied to, then you will probably end up, triggering off a result totally contradicting the one you meant to achieve in the first place. You cannot hope to convince people by hiding real fact to them.

But resorting to simply disclosing true facts is not the solution either. Indeed, there are many cases in which “real figures” are not convincing enough, because they are not impressive enough... It is a matter of communicating the necessary elements in a more “human” manner, so that it is adapted to people’s needs for information. For instance, you can promote the positive experience someone publishes on his/her Internet blog.

I also wish to return to the question of intelligence that has been brought up before. You cannot get people’s behaviour to change in a lasting manner if they do not understand why they need to change. They have to be aware and convinced that there are real ecological problems to deal with. Much depends on education and training. During the last few years, education curricula for primary schools and high schools have been modified to encompass certain issues such as sustainable development and environmental sustainability.

If citizens are taught, at an early age, about these issues, they generally understand they are responsible for it and for the situation. The ADEME Agency has been working to convey this message for a while, but we still have some progress to do. For example, shoppers are not thinking of what their basket represents in CO₂ emission terms once it is full and they leave the supermarket.

Once citizens are aware of the ecological challenges, they spontaneously ask what they can do. Our role is therefore to enable them to make the most “intelligent” choices by providing them with the necessary information, especially regarding the environmental impact of products. They will thus be in a position to make the right choices, and will give producers the incentive to evolve in turn. This motive is at the heart of the experiment we will launch in July 2011, in the *Grenelle de l’Environnement* framework.

To conclude, all this is only relevant if the messages transmitted by all policymakers, and not only by the State, are consistent. Generally speaking, once citizens are informed and aware of what is at stake, they ask for coherent policies and initiatives.

The subject of environment friendly-behaviours is a complex one, and many different instruments and tools can be used. As there is no miracle solution, we need to get combine them in the best possible manner in order to achieve our goals, ideally in tune with what is done in the UK, in China, or in the USA.

It is therefore very important to carry on some research work on these tools. Thank you for having given us the opportunity to think about this, all together.

APPENDIX →

Towards a policy of sustainable consumption in France

There is a currently widespread agreement on the unsustainable nature of our consumption model, which is excessive both in terms of the resources it uses and the waste it generates, and destructive to the climate and to the biodiversity. Faced with this issue, governments have until now attempted to “green up” the economy by promoting production methods that are more respectful of social and environmental standards. This approach has proved inadequate: although technological progress is necessary, it will not be sufficient on its own to counterbalance the global population increase and the changes in consumption patterns. As consumers, we must likewise change our behaviour to strive for truly “sustainable consumption”. The Centre d’analyse stratégique recommends to define sustainable consumption not only in terms of sustainable development, but above all as a fundamental

change in those habits that have arisen from the spread of modern consumer societies.

A sustainable consumption model implies that people's needs will be met by goods and services that use far fewer resources, are less polluting and contribute to social progress. Consumers will also utilize dematerialized types of exchange (renting, sharing, bartering). This model will lead to a change in culture and lifestyles, where materialism will recede in favour of other aspects of human existence (family ties, culture, art, sports). This transformation implies the political vision of a society in which material consumption is no longer the central factor determining well-being and quality of life; in other words, it requires abandoning the concept of a consumption-centred society. This will necessarily entail progressive changes to the French economy, which must remain compatible with the critical elements of growth and with business competitiveness. ■

PROPOSALS

The Centre d’analyse stratégique proposes to lay the foundations for a national sustainable consumption policy, which will later be transposed sector by sector. Such a policy implies to:

- 1 Set-up education initiatives which teach people how to consume in a more sustainable manner, from a very early age and raise consumers’ awareness through target groups and key life events such as child birth.
- 2 Encourage pioneering local initiatives such as “farm-to-fork” distribution networks, eco-districts...
- 3 Support innovation, both technological and organisational, to promote sustainable consumption, notably by integrating sustainable development requirements with the existing “Made in France” label, and by encouraging ecological design.
- 4 Implement the necessary economic tools and “price signals”: environmental taxes [climate-energy contribution], non-linear pricing for water and electricity, eco-labels financed by businesses that do not produce environmentally-friendly products.
- 5 Reinforce and expand upon the sustainable policies adopted by the government and local authorities for consumption and public purchasing.
- 6 Mandate an organization dedicated to ensuring long-term monitoring of the national sustainable consumption policy.

➤ MAIN ISSUES The current model of consumption is in need of profound change. It has proved unsatisfactory to the equal distribution of global economic growth as well as natural resources, it generates dangerous pressures on the environment and it is furthermore unable to guarantee human prosperity. Sustainable consumption has recently become a subject of interest for policymakers. However, it has yet to become a policy priority in its own right, treated, separately from production policy. This concept cannot be assimilated to a society entering a phase of “degrowth.” On the contrary, it must be compatible with economic prosperity, by finding an alternative growth model that does not involve the depletion of our resources. It should be noted that sustainable consumption does not merely involve guiding consumers towards more sustainable products, whose beneficial effects may be cancelled out by changes in behaviour and an increase in the volumes consumed. From today onward, we need to reduce the pressures on ecosystems that are created by our consumption habits, such as greenhouse gas emissions caused by the consumption of hydrocarbons. In order to tackle this challenge, we need to lift the access constraints and routine mental blocks among consumers and to diminish their distrust of *greenwashing*⁽¹⁾. Above all, the status that consumption has acquired in our societies must evolve so that our purchasing behaviour and daily consumption habits reflect our awareness of sustainable development goals.

This note first addresses the state of sustainable consumption in France. It goes on to analyse the barriers that explain why most consumers find it hard to translate good intentions into virtuous practice. Finally, it makes proposals for a national sustainable consumption policy.

🔗 SUSTAINABLE CONSUMPTION: AN EMERGING REVOLUTION

1. The case for taking up the challenge of sustainable consumption

Three recurring criticisms of the current consumption model justify the launch of a French sustainable consumption policy.

The first argument is linked to the environmental pressures caused by the current model. Too many indicators are raising red flags – climate change, pollution of water tables and destruction of biodiversity – giving rise to fears of a sixth extinction of species. Even if these indicators are far from perfect calculations, the global ecological footprint⁽²⁾ shows that we use resources equivalent to 1.5 times planet Earth, a figure that has doubled since the 1960s. Moreover, according to the International Energy Agency (IEA), only by changing our lifestyle and behaviour can we achieve the global objective of reducing greenhouse gases by half.

Another argument is that, despite the promises engendered by the mass consumer society, which was expected to democratize material comfort, global inequalities in access to resources still remain. In Europe, each person consumes daily on average four times more resources than people in Africa, but two times fewer than people in North America⁽³⁾.

Finally, although controversial, the Easterlin⁽⁴⁾ paradox reminds us that beyond a certain threshold, happiness does not increase as we acquire more. Tim Jackson⁽⁵⁾ advocates a new social model, one that can reduce our impact on the environment and, beyond that, maximize the positive ecological, social and economic effects of human activity.

[1] “Greenwashing” is the use of fallacious ecological advertising in business communications.

[2] *Global Footprint Network Estimate Based on the Year 2007 in WWF (2010), Living Planet Report 2010*. The ecological footprint accounts for the incidences of global human activity and relates them to the ability of the earth to regenerate (bio-capacity). It takes into account the volume of water and surface areas used to meet the demand for resources (crops, forests, pasture and fishing stocks), support infrastructure and absorb CO₂ emissions, in stocks. This indicator has been the subject of criticism. See David M., Dormoy C., Hays E. and Tréguët B. (2010), *Une expertise de l’empreinte écologique ?*, Collection Études et Documents du CGDD, n° 16, January.

[3] Average estimates for the year 2000 for renewable resources (farming, fish stocks, forestry) and non-renewable (fossil energy, metals, minerals). SERI, GLOBAL 2000, Friends of the Earth Europe (2009), *Overconsumption? Our Use of the World's Natural Resources*, September.

[4] Richard Easterlin refers to a stagnation in the level of satisfaction declared by populations of post war, industrialised countries, hence experiencing a moment in time when their wealth is increasingly considerably. Easterlin R. (1974), “Does economic growth improve the human lot? Some empirical evidence”, in David P.A. and Reeder M. W. (eds), *Nations and Households in Economic Growth*, New York, Academic Press, 1974, p. 89-125. See also criticisms by Deaton A. (2008), “Income, health and well-being around the world: Evidence from the Gallup World Poll” *Journal of Economic Perspectives* 22 (2), p. 53-72.

[5] Jackson T. (2009), *Prosperity Without Growth?*, UK Sustainable Development Commission, March.

2. Why policies that solely target sustainable production are not enough

Public authorities are reluctant to try to reorient consumption practices in order to move society towards sustainable development. However, policies that look only to redirect production methods are not enough on their own, and bring unwanted effects.

First, any increase in the productivity level of resources is partially cancelled out by the change in consumer behaviour due to the so-called “rebound effect”⁽⁶⁾.

Why does the rebound effect undermine improvements in energy efficiency?

The rebound effect is difficult to evaluate at a national level and is rarely taken into account when public policy results are evaluated. However, this effect explains why improving energy efficiency is not enough on its own to reduce global pressure on the environment⁽⁷⁾. Improvements to the energy efficiency of goods and services delivers budget savings, causing in turn different types of rebound effects⁽⁸⁾ on the economy as a whole, which can be analysed on three distinct levels.

The first effect concerns consumers: price reductions⁽⁹⁾ lead them to use the part of their budget they have saved to consume more (whether the same goods and services question or alternative ones). The increase in the amount of appliances in households and the changes in certain consuming practices (frequently replacing devices, purchasing “energy-hungry” ones, leaving equipment on standby mode)⁽¹⁰⁾ have largely cancelled out recent improvements in the energy efficiency of household appliances.

The second effect concerns producers: improved energy efficiency leads to a reduced demand for certain resources. This leads to a cost reduction, and ultimately translates to an increase in the production of goods and services. In the telephone sector, for example, the benefits of an

improvement in the energy efficiency of equipment has been more than cancelled out by such an increase in production. Analysed jointly from a long-term, macro-economic perspective, these two effects account for a third “transformation” effect, corresponding to the change in society brought by technology innovations. Thus, in France, we can observe a decoupling effect between the energy consumption and the overall production level: this is partly explained by an increase in energy efficiency since the 1970s, but mainly by the growing importance of the tertiary sector, which uses less energy.

Secondly, offering more sustainable products and services does not instill good practices beyond a restricted circle of enthusiastic eco-citizens who actually put their good intentions into practice. In spite of the increasing awareness of sustainable development issues, mainly in the form of environmental concerns⁽¹¹⁾, these “activists- consumer” still represent only a fifth of the French population⁽¹²⁾. Most consumers have adopted an ambiguous, almost “schizophrenic” behaviour: they stick to the values of sustainable development, but fail to apply these principles when purchasing. 79% of French people may say that they are prepared to consume in a responsible manner – an indication that sustainable consumption is becoming the social norm – but only 4% of them put their intentions into practice by choosing fair trade, organic, and locally or regionally-produced products, or even by staging boycotts⁽¹³⁾. In spite of government efforts at raising awareness, over 32% of waste is apparently still improperly disposed of by households⁽¹⁴⁾. More worryingly, younger generations, although better informed, seem to be more attracted by the lures of commercialism. Although those under age 35 demonstrate an above-average awareness of the concept of “sustainable development”⁽¹⁵⁾, they are at the same time prone to “hyper-consumption,” characterized by the habit of replacing items more quickly – especially energy-hungry and rapidly obsolete high-tech products – or by neglecting the life expectancy or the environmental footprint of a product or service as a criteria for choice⁽¹⁶⁾. It is also true that sus-

[6] Madlener R. and Alcott B. (2009), “Energy rebound and economic growth: A review of the main issues and research needs”, *Energy*, vol. 34, n° 3.

[7] *Ibidem*.

[8] Herring H. and Roy C. (2007), “Technological innovation, energy efficient design and rebound effect”, *Technovation*, vol. 27, n° 4, p. 194-203.

[9] The rebound effect is linked to the elasticity of substitution.

[10] Enertech (2008), *Mesure de la consommation des usages domestiques de l'audiovisuel et de l'informatique*, Final report for the Remodece Project (ADEME/EDF/European Union), July.

[11] ADEME/CREDOC (2010), *Enquête sur les attitudes et comportements des Français en matière d'environnement*, June.

[12] Ethicity/ADEME (2010), *Les Français et la consommation responsable. Retour au vivant*, February-March.

[13] *Assises de la consommation 2009*. For more recent estimates, see Ethicity/ADEME (2010), *op. cit.*

[14] IPSOS Public Affairs/ADEME (2009), *Enquête sur les attitudes et comportements des Français face à l'environnement*, September.

[15] LH2 study, April 2009, for the 21 Committee: “Les Français et le développement durable : entre désir d'y croire et volonté de faire”. 39 % of French people declare that they have a precise awareness of the notion of “sustainable development”; the best levels of awareness (definition): 42% of under- 35s.

[16] For current and future spending on electronic equipment by generation, see Desvaux G. et Regout B. (2010), *Older, smarter, poorer: The French consumer transformation*, McKinsey Quarterly, June. See also Martin M. (2003), *Téléphone portable chez les jeunes adolescents et leurs parents : quelle légitimation des usages ?*, M@rsouin.

tainable products and services are still quite scarce and hardly visible on most markets, which doesn't help consumers to act and also explains their apparent apathy.

3. Only three OECD countries have implemented a sustainable consumption policy

Faced with the need for a sustainable development policy, most governments have undertaken to change the selection of goods and services offered by making them “greener” or by reducing their externalities, by increasing the productivity of resources, by developing “green” technology as well as ecological design, and by encouraging businesses to be more responsible in terms of their social and environmental impact. The 2010-2013 French National Sustainability Strategy⁽¹⁷⁾ follows this direction, as does the European Commission Action Plan addressing the same subject⁽¹⁸⁾. Amongst OECD countries, only three have set up a national policy specifically devoted to sustainable consumption: the United Kingdom, Sweden and Finland. This quasi-absence can be explained by strong institutional and cultural taboos.

On one hand, sustainable consumption is subject to political controversy. In the beginning, the Agenda 21 formulated as a result of the Rio Summit (1992) recommended that consumption habits needed to be changed in order to prevent the complete exhaustion of our resources, a fear raised by the Club of Rome⁽¹⁹⁾. But in subsequent years, debate has focused on the less controversial subject of technology efficiency and sustainable products and services.

On the other hand, policymakers often assume a certain degree of socio-cultural resistance from consumers. There is no way to know if this resistance is overestimated, but it influences the way policymakers approach the challenge of sustainable consumption. Consumption is undoubtedly linked to the concepts of

identity and social status, which explains why any political desire to change behaviour in this area may be seen as an attempt to undermine individual freedom. According to certain sociologists, consumerism⁽²⁰⁾ has become a tool for “consolation”⁽²¹⁾ where social interaction is wanting, and can go as far as addiction and hyper-consumption⁽²²⁾. It is therefore difficult in political terms to encourage individuals to change their consumption habits. The famous statement by President Bush that the American way of life was “non-negotiable,” summarises a way of thinking that is widely shared in the United States, of course, but also in all developed countries.

4. Devising a sustainable consumption policy in France

We need to create a new consumption model that is more respectful of our planet and its people. The challenge consists not only of minimizing the negative impacts of our current growth model, also of triggering an evolution in our behaviour and a progressive change in terms of our growth model. As far as France is concerned, such a sustainable consumption policy could focus on spreading the adoption of virtuous behaviour across the whole of society by 2030, well beyond the core of committed consumers who are already on board⁽²³⁾.

An opportunity to capitalize on fledgling sustainable consumption reflexes

The sales of most “sustainable” products has not been impacted by the economic crisis. Though still only accounting for 1.6% of household food purchases, the consumption of organic products increased by 19% in terms of sales in 2009, a variation due to sales volume and not to price increases⁽²⁴⁾. Certain types of “sustainable” products and services are now widely and immediately recognized by the French, especially products with “Organically Farmed” and “Fair Trade” labels⁽²⁵⁾.

[17] www.developpement-durable.gouv.fr/SNDD-2010-2013-vers-une-economie.html.

[18] Communication dated 25 June 2008, Action Plan for sustainable consumption and production for a sustainable industry policy: <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008DC0397:FR:NOT>.

[19] Scenarios from the Meadows Report predicting that the growth in the needs of the human population will ultimately lead to outstripping the ecological capacities of the earth. See Meadows D. H et al. [1972], *The Limits of Growth. A Report for The Club of Rome's Project on the Predicament of Mankind*, New York, Universe Books, updated in 2004.

[20] British economist Paul Ekins defines consumerism as: “The possession and use of a growing number and variety of goods and services is the main cultural aspiration and seen to be the surest route to individual happiness, social status and national progress”.

[21] Rochefort R. [2001], *La Société des consommateurs*, Paris, Odile Jacob.

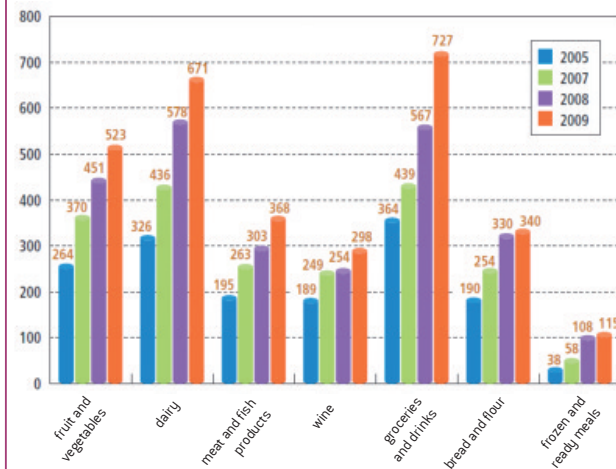
[22] See the characteristics of the system of hyper-consumption in Lipovetsky G. [2006], *Le Bonheur paradoxal. Essai sur la société d'hyperconsommation*, Paris, Gallimard.

[23] Thus, “cultural creatives” or LOHAS (*Lifestyle of Health and Sustainability*) consumers represent 19% of the US population. Europeans have a stronger propensity to adopt comparable behaviour [sorting/recycling, buying eco-products, recommending to friends and family] but are less disposed to pay to acquire goods or services known for their ecological qualities. Source: Natural Marketing Institute [2007], *Understanding the European LOHAS Market*.

[24] Agence Bio [2010].

[25] In 2009, products with organically farmed and fair trade labels were identified the most, by 69% and 57% of consumers respectively. See ADEME [2009], *Enquête sur les attitudes et comportements des Français face à l'environnement*, Sondage IPSOS Public Affairs, June, in Lipovetsky G. [2006], *Le Bonheur paradoxal. Essai sur la société d'hyperconsommation*, Paris, Gallimard.

▼ **Sales of “organic” food products have increased in spite of the crisis**



Source : Agence Bio, 2009

By making people think about saving on their household budgets, the crisis has produced a consensus amongst consumers on the need to focus not only on cheaper items, but also on products and services that are essential, sustainable or repairable, and of better quality, as well as produced locally and distributed directly by farms or citizens’ associations (such as AMAP⁽²⁶⁾ in France). Instead of buying, consumers are now aware they can resort to alternative exchanges such as resale and second-hand markets, sharing, exchanging, renting...

Virtuous behaviour among the French is still essentially motivated by the search for personal benefits in terms of health and budget. It can also arise when they become parents, their new responsibilities leading them to question their consumption habits⁽²⁷⁾.

Our definition of sustainable consumption: a new model leading to a triple change in consumer society

Taking into account the many long-term objectives of sustainable development, we need to see sustainable consumption above all as an alternative to over-consumption, which is by definition unsustainable. Indeed, this model is excessive in terms of demands on resources and waste levels and very often fails to give fair access to resources and wealth. Thus, sustainable consumption can be defined as a combination of three changes:

► **a change to the purpose of consumption**, which should no longer appear as the most certain route to well-being, or as a major status-symbol in social relations. The spread of the current mode of consumption across all of human society is incompatible with the finite nature of the earth’s resources. Consumption in developed countries must therefore change progressively in order to provide the necessary elements required for the existence of all, whilst also guaranteeing their existence for future generations;

► **a change in practices and behaviour**, pushing people towards meeting their needs through a consumption model that is more respectful of people and the planet i.e. more resource-aware, operates on the principle of the “virtuous circle” (reduce, reuse and recycle), produces less pollution, contributes to social progress more actively and increases adoption of less materialistic consumption modes (renting, sharing, exchanging...);

► **a change in culture and lifestyle**, which, due to the time and resources saved when less time is dedicated to consumption, could enable people to explore or rediscover alternative facets of lifestyle and to reevaluate the value of non-material exchanges (culture, art, sport, leisure, social life, etc.).

The lessons of pioneer sustainable consumption policies

In the wake of the Johannesburg Conference⁽²⁸⁾, only Sweden, the United Kingdom and Finland have to date developed a policy of sustainable consumption as part of their national sustainable development policy. Faced with the two major obstacles to the spread of sustainable consumption – namely the rebound effect and the wide gap between act and intent – the behaviour-related policies proposed in these countries take into account the psycho-social aspects and the value systems associated with consumption, as well as of the difficulty of rechanneling routine habits.

These pragmatic strategies operate in stages, the first one consisting of defining an action plan. The plans contain few quantitative objectives: those are meant to be fleshed out at a later stage in the areas that have been identified as priorities. An institution dedicated to coordi-



[26] Associations pour le maintien d’une agriculture paysanne (AMAP) aim to reduce the distance “from farm-to-fork”: consumers who use this system buy part of the seasonal harvest from local farms in advance, and are involved in the distribution, and sometimes in the harvest.

[27] Utilitarian preoccupations that are particularly strong where food is concerned. Mathé T. (2009), *Comment les consommateurs définissent-ils l’alimentation durable ?*, CREDOC, Cahier de recherche n° 270, December.

[28] In 2002, the Conference concluded that countries needed to launch national ten-year programmes to promote sustainable production and consumption, in response to the non-sustainable nature of the current model of consumption.

nating national policy and organizing participatory processes (commissions of experts, round table discussions and consumer focus groups) usually facilitates the dialogue between the different stakeholders at a very early planning stage. Progress is evaluated and published on a regular and constant basis. Projects are developed as part of a long-term vision, without evading ideological debates: for instance, the authorities explicitly say that re-designing the economic model may result in winners and losers, especially in the production sector. The major challenge is therefore to provide support to actors that do not benefit from this transition.

➤ KEY FACTORS TO TAKE INTO ACCOUNT WHEN CONSIDERING A SUSTAINABLE CONSUMPTION POLICY

Although there is now a widespread consensus in public opinion about the need to change our lifestyle, the institutional, economic, cultural, social and psychological barriers to such a change remain strong. Financial disincentives, a lack of truly substitutable “green” offers, the inability to see the immediate benefits of a change in consumption modes, a feeling of powerlessness experienced by the individual, a lack of social pressure, the unsatisfied expectations of seeing virtuous institutions or companies leading the way, a certain degree of behavioural inertia and the difficulty to determine key objectives, are all obstacles to the popularisation of sustainable consumption.

1. The budget problem

Consumption is first and foremost a reflection of real disposable household income⁽²⁹⁾. Thus, the first step is to remove the constraints preventing access to sustainable goods and services, by incorporating environmental externalities into the prices and setting up direct or indi-

rect financial incentives (in particular bonus-malus mechanisms). In order to ensure the equality of access, the solvency of demand will be a crucial aspect in designing such tools, especially in a period of economic crisis and increase in unavoidable expenditures⁽³⁰⁾. Furthermore, a policy that aims solely to substitute goods and services with their “sustainable” equivalent, without inducing a change in the general behaviour (less waste, eating less meat, changing to a service economy, etc.), will eventually become more expensive for consumers in a certain number of areas⁽³¹⁾.

2. The information problem

Consumers are still ill-informed about the practices of companies and also about the total costs of goods and services over their whole life cycles, including the external factors resulting from their production, use (i.e. the cost of a car and its fuel, the cost of a refrigerator and its energy consumption) and end of life. In addition, too much⁽³²⁾, or even misleading (greenwashing), information can lead to a psychological bias in their judgement, as it may encourage them to take less thoughtful decisions or choose the simplest proposal⁽³³⁾. Labelling can reduce this information imbalance, particularly when taxation is not suitable: the carbon label⁽³⁴⁾ is a first step towards taking external environmental factors into account but its effectiveness still depends on the type and cost of the information given. It is particularly effective if it links the private and public benefits of the goods or services (health, budget, local environment), as in the case of the the energy label, which has proved successful⁽³⁵⁾. However, at a time when self-awarded corporate labels and logos are proliferating, we urgently need to regulate them⁽³⁶⁾, especially by making transparency of the specifications obligatory, and to encourage the display of the “complete cost”, or even “total cost”⁽³⁷⁾, of goods and services.

[29] Estimate of households permanent income depending on their current disposable income, initial wealth and their discounted future incomes: a consumer would find it easier to consider buying a property if he or she had substantial savings and a stable job.

[30] The unavoidable part of the household expenses has constantly increased over the last half-century, from 20% in 1960 to 36% in 2006. See Centre d'analyse stratégique (2009), *Sortie de crise : vers l'émergence de nouveaux modèles de croissance ?*, Report of the workgroup chaired by Daniel Cohen.

[31] Organic food is still 23% more expensive when comparing the same basket of goods (average calculated in mass catering), Agence Bio (2009), *L'agriculture biologique, chiffres clés*, Édition 2009.

[32] The number of advertising messages referring to an environmental argument increased fivefold from 2006 to 2009. ARPP/ADEME (2009), *Bilan 2009, Publicité et environnement*, study report, December.

[33] See the three main heuristic biases in Tversky A. et Kahneman D. (1981), “The framing of decisions and the psychology of choice”, *Science*, vol. 211, n° 4481, p. 453-458.

[34] The carbon label, a Grenelle II measur, will be set up an experimental form in July 2011.

[35] A result of the 1992 European directive, this label displaying the energy efficiency of white goods has improved the energy performances of domestic equipment.

[36] In 2010, only 31% of consumers thought that the information on the most environmentally friendly products was scientifically proven. ADEME/CREDOC (2010), *Enquête sur les attitudes et comportements des Français en matière d'environnement*, June.

[37] The “complete cost” takes into account the purchase price, the cost of use and durability of goods and services. The “total cost” aims to take into account the complete cost of a good or service but also the ecological and social externalities generated over its whole life-cycle.

Finally, companies, including those most committed to corporate social responsibility (CSR), do not present their performance outside the financial category in a uniform and comparable manner. To go further than the process resulting from the French law on the new economic regulations⁽³⁸⁾, they could improve the transparency of their reports by publishing simple and uniform indicators on a shared website. In addition, CSR regulation should encompass marketing strategies, especially those that encourage overconsumption.

3. The behavioural problem

If consumption is to cease to be a social marker, and if we are to change our routine behaviour, a cultural revolution will be necessary⁽³⁹⁾. This could be a matter of pragmatic learning, integrated within the school curriculum and present throughout life, backed up by social and cultural communities and other vectors influencing public opinion⁽⁴⁰⁾. In addition, consumer cognitive bias and behavioural failings will have to be taken into account when formulating new incentive policies.

Can libertarian paternalism improve people's well-being without limiting their choices?

Behavioural economics, psycho-sociology and marketing techniques have revealed three types of consumer deviations from economic rationality: limited rationality ("rather than study the range of choices and information I try to find a "reasonable" solution on my own"), limited willpower ("How I behave today is totally different from how I will behave tomorrow") and limited individualism (a tendency towards altruism). Libertarian paternalism or "nudging"⁽⁴¹⁾ consists of using these failings in order to convince people to rely on their underlying rationality, without forcing them to do so. The aim of these innovative practices is to combat inertia, making the most virtuous choice a default one in a series of options, using peer pressure by creating lists of unsustainable companies or products ("naming and shaming"), and informing consumers about the virtuous behaviour of comparable households⁽⁴²⁾.

4. Taking the collective into account

Household consumption cannot be likened to the sum of individual modes of consumption, but rather consists of a set of shared practices related to social rules and to the existing production systems. This means that effective incentive policies will take into account different populations of consumers and not a supposedly uniform public.

Policymakers can profit from collective emulation and the group dynamics by capitalising on local initiatives and addressing people in community living spaces (districts, businesses, voluntary groups, etc.). The results of individual acts when they are adopted by the majority should also be highlighted in order to reduce the feeling of insignificance that people may feel when they make an isolated gesture for the environment. Finally, the State and local authorities must lead businesses and citizens by example. Public purchasing should enable a certain number of sustainable products to more quickly reach the profitability threshold at an affordable price for the consumer, and thus help such products to develop beyond niche markets.

5. Towards a new relationship with consumption?

Information technology has provided new areas for interaction with consumers and businesses that can be used to consider different forms of consumption; for instance, renting, financing, leasing or sharing goods (like cars), or the products and services that prioritize use over purchase.

Beyond the promises of the service economy

A transition from product to service and then to "the experience beyond service" has been made by some companies trying to create value by developing relational marketing (loyalty building). The development of bundles, then the provision of services (telephony, self-service bicycles, etc.) forced them to think again about the sustainability and use of resources, because profitability no longer depended on increased sales. Although still largely theoretical, the functionality economy mainly aims to place use at the centre of a buying relationship in which



[38] The law n° 2001-420 of the 15th of May 2001 concerning the new economic regulations obliges quoted companies to report on their understanding of the environmental and social consequences of their activities in their annual report. Article 83 of the Grenelle II law, adopted in June 2010, expands this obligation and makes it more restrictive.

[39] Sanne C. (2002), "Willing consumers – or locked in? Policies for a sustainable consumption", *Ecological Economics*, vol. 42, n° 1-2, p. 273-287.

[40] Information sources (teachers, educators and trainers), voluntary groups, opinion leaders, advertisers, etc.

[41] Thaler R. H. et Sustein C. R. (2008), *Nudge, Improving Decisions about Health, Wealth and Happiness*, Yale University Press.

[42] Experience in California, where households were sent a bill along with a comparison of their energy consumption (electricity and natural gas) with that of similar households in the neighbourhood, led to a significant reduction in their consumption, everything else being equal. Ayres I., Raseman S. and Shih A. (2009), "Evidence from two large field experiments that peer comparison feedback can reduce residential energy usage", *NBER Working Paper*, n° 15386.

the qualitative replaces the quantitative aspect. Beyond this, the service economy has mainly resulted in certain sectors with rapid obsolescence (telephony, ICT) being made responsible for the whole life-cycle; displaying the guarantee period of certain products being extended and in the total costs of goods and services for which the consumer finds it difficult to anticipate costs of use (cars and white goods).

In the same way, social or “*low tech*” innovations take the form of collective virtuous practices at local level (housing co-ops, shared gardens, etc.).

➤ RECOMMENDATIONS

Before formulating any sustainable consumption policy, we must determine to what extent an alternative to the “consumption – accumulation” model is possible. There is no question of advocating the emergence of a society based on “degrowth”, which would be incompatible with the prosperity of the French economic model and the necessity of dealing with its national debt. Although a transition towards a sustainable society must be embarked upon as soon as possible, it must not be imposed in a brutal fashion. It should be sufficiently attractive to provide motivation for changes in behaviour and be designed in collaboration with the stakeholders, as pointed out in the recent book by Dominique Bourg and Kerry Whiteside, which advocates “rethinking democracy” to meet the ecological challenge⁽⁴³⁾. A sustainable consumption policy can only be considered insofar as it forms part of a shared vision of a society that gives a newfound importance to consumption, social relationships and culture in our lives.

From now on, we must start to reduce our environmental impact, our greenhouse gas emissions and the extraction of natural resources across certain sectors. At the same time, we must urgently explore the opportunities for growth presented by the consumption of innovative and sustainable products and services (service economy, eco-design, low food miles, etc.). In this way, we could lay the foundations of a specific sustainable consumption policy in the form of simple objectives aimed at reducing the impact of French modes of consumption, in consultation with stakeholders. This strategy should then be implemented in a number of priority sectors with a high ecological impact (essentially food, housing, including electronics,

and transport, including tourism). The involvement of all stakeholders, especially low-income households, is crucial and involves designing differentiated approaches so that they do not remain isolated from this policy.

Several factors must be taken into account to ensure that it is effective:

- ▶ recognising sustainable consumption as a policy matter in itself,
- ▶ considering the entire life cycle of products and services,
- ▶ setting-up a system of governance that combines the traditional top-down approach (regulation, inspection, information, incentive, etc.) with an approach that is more bottom-up, voluntary, participative, sensitive to original initiatives, supportive of pioneer social groups that are already on board, and which can have an influential effect,
- ▶ transforming our model of consumption by relying on cultural conductors,
- ▶ adapting this strategy to social and technological developments,
- ▶ aiming to redirect producers’ and consumers’ behaviours in the long-term.

PROPOSAL 1

Set-up education initiatives which teach people how to consume in a more sustainable manner, from a very early age and raise consumers’ awareness through target groups and key life events such as child birth.

Education about consumption should lead citizens of all ages to include sustainable development in their consumption reflexes and habits. One challenge will be to find the right content and tone. The messages used must avoid the pitfall of authoritarian orders and encourage instead a voluntary change in behaviour. This policy will mean a change in both early and continuous education. Early learning about practical knowledge (managing a budget, the basics of nutrition, understanding advertising and marketing strategies, etc.) should enable people to adopt a rational consumption behaviour. There is also a need to further the development of vocational training started by the National Sustainable Development Strategy.



[43] *Vers une démocratie écologique. Le citoyen, le savant et le politique*. Paris, Seuil/La République des idées, 2010.

Information and awareness campaigns would benefit from mobilising those who influence public opinion: the education system, media, businesses and marketing professionals, advertisers, etc. Individuals tend to consume like their peers: playing on imitative practices with innovative incentives (or “nudges”) and suitable communication messages targeting priority social groups and collective living spaces (cultural and sport clubs, neighbourhoods, works councils, etc.) will be more effective than sending out communications to consumers in a generic way. Such a strategy presupposes that the communities targeted are able to inform their members about their progress and avoid the feeling of insignificance of efforts. It will also be a good idea to capitalise on the “life events” during which individuals are particularly sensitive to the issues of sustainable development (especially the individual health and quality-of-life benefits) to drive home the messages about sustainable consumption: the time leading up to and following the birth of a new baby, holidays, etc. predispose consumers to changing their way of life⁽⁴⁴⁾.

- 1 ■ Integrate the basics of (sustainable) consumption in curriculums from the earliest years and in vocational training.
- 2 ■ Design awareness campaigns that target well-defined priority audiences and that take consumers’ behaviour into account.
- 3 ■ Raise the awareness of individuals at key events in their lives, when they are more receptive to the issues of sustainable consumption.
- 4 ■ Play on the encouraging effect of collective approaches.
- 5 ■ Identify the groups that have already adopted sustainable consumption modes and encourage them to spread the culture of sustainable consumption.
- 6 ■ Clarify Corporate Social Responsibility practices and integrate marketing strategies in the CSR framework.
- 7 ■ Improve the transparency of the social and environmental impacts of financial savings products and encourage socially responsible investment.
- 8 ■ Involve the media and commercial communication channels in the sustainable consumption policy.
 - Involve media professionals.
 - Limit advertising strategies promoting waste and overconsumption.
 - Prevent the proliferation of messages encouraging hyper-consumption.
- 9 ■ Regulate the profusion of labels associated with sustainable development.
- 10 ■ Develop the service economy and eco-design practices by delivering information on the total cost of goods and services.

PROPOSAL 2

Encourage pioneering local initiatives such as “farm-to-fork” distribution networks, eco-districts...

In order to identify and “test” viable solutions to be deployed at a national level, the State should encourage sustainable consumption experiments already set-up by local authorities and communities: AMAP-type distribution systems that rebuild a direct link between producers and consumers, eco-districts, etc. An hybrid policy of responsiveness to and support for local initiatives is needed in addition to the subsidies currently granted by the Agency for the environment and energy control (ADEME) and regional authorities. It should remove the regulatory obstacles to the most beneficial experiments and provide a large number of new support systems outside the financial sphere. Structures offering free support and business strategy advice or legal help also seem to be indicated. Finally, finding ways to recognize the best practices in a competitive spirit (“sustainable consumption” awards) could encourage the imitation of the most fruitful initiatives.

- 11 ■ Support local sustainable consumption experiments.
- 12 ■ Strengthen the processes of learning about, swapping and spreading the best practices.



[44] Mathé T. (2009), *Comment les consommateurs définissent-ils l'alimentation durable ?* CREDOC, op. cit.

PROPOSAL 3

Support innovation, both technological and organisational, to promote sustainable consumption, notably by integrating sustainable development requirements to the existing “Made in France” label, and by encouraging ecological design.

The basis for the success of a sustainable consumption policy is the existence of a supply of sustainable goods and services: therefore, this should immediately start to grow in a substantial way. To preserve its economic competitiveness at world level, France must endeavour to place itself at the forefront of a sustainable growth tendency not only based on technological innovations but also on innovations in organisation and services. The latter types of innovations, known as “low tech”, can rarely be patented and have little chance of benefiting from financing, like the practice of microbiology in agricultural soils (which resort to ancient techniques to reduce the use of chemical products and pesticides). So, these innovations should be encouraged by means of public financial and technological support and adapted regulations.

- 13 ■ Invest in technological as well as in social “low tech” innovation, in the service of sustainable consumption.
- 14 ■ Combine environmental requirements – especially official eco-labels – with the guarantee of local manufacture in case of the introduction of a “Made in France” label.
- 15 ■ Encourage the development of innovatory voluntary groups and businesses with social and ecological roles, in particular by clarifying their legal status.

PROPOSAL 4

Implement the necessary economic tools and “price signals”: environmental taxes (climate-energy contribution), non-linear pricing for water and electricity, eco-labels financed by businesses that do not produce environmentally-friendly products.

Just like fighting against climate change, the transition to a sustainable and more mutually supportive society will become more and more costly the longer we wait to tackle it⁽⁴⁵⁾. In order to optimise the total cost incurred for the community, the government, in cooperation with the local authorities, should implement the appropriate economic instruments in each of the concerned fields along with adapting redistribution measures. The aim is to reintroduce the value of environmental and social externalities into the prices of goods and services and to develop an ecological taxation system that encourages sustainable consumption. We must thus pay for the carbon we emit, whilst taking care to ensure that this cost is acceptable for disadvantaged households. A fair approach would be to set-up a tax, a quotas market, a standard, a bonus-malus mechanism or a reduced VAT rate for eco-products (as envisaged in the 2010-2013 National Sustainable Development Strategy), depending on the sectors, or to remodel the collective financing mechanisms based on the “polluter pays principle” if they are deficient.

- 16 ■ Put a price on the carbon emitted and state the value projected over the long term in order to send a strong signal to all of the players concerned.
- 17 ■ Advantage sustainable goods and services by setting-up strong price signals and financial incentives (taxation, bonus-malus, standardisation, subsidies, etc.).
- 18 ■ Study a revision of water and electricity prices in order to encourage consumers to use these resources more efficiently.
- 19 ■ Require uncertified businesses to finance the eco-labels by implementing a “polluter pays” principle.

PROPOSAL 5

Boost the sustainable policies adopted by the government and the local authorities for consumption and public purchasing.

Being consumers themselves, service operators and employers, the State and regional authorities can contribute to popularising sustainable consumption at national level.



[45] See Stern N. [2007], *The Economics of Climate Change : The Stern Review*, Cambridge et New York, Cambridge University Press.

If public contracts comply with the purchasing policy formalised in the National Sustainable Public Purchasing Plan⁽⁴⁶⁾, public contracts can have an incentive effect on businesses, to which they will signal that there is a substantial demand for sustainable goods and services, and on consumers, whom they will familiarise with virtuous practices and green products in mass catering, health services, the civil service, etc. The financial mechanism formally created in 2010 should be made permanent: this "bonus-malus" mechanism, financed by a contribution automatically levied on the ministry budgets, should encourage them to comply with or exceed their commitments because they are reimbursed according to the levels of the objectives achieved.

- 20 ■ Ensure that public policies in the matter of sustainable consumption are consistent.
- 21 ■ Systematise "cost/benefit" approaches in public policies and issue regular communications on them.
- 22 ■ Speed up the implementation of the sustainable public purchase strategy and mobilise the related public structures around it.
- 23 ■ Back European coordination of sustainable consumption policies.

PROPOSAL 6

Mandate an organization dedicated to ensuring long-term monitoring of the national sustainable consumption policy.

The sustainable consumption policy can only be viewed as a long-term strategy: therefore, we must set-up a system of governance and assessment tools that can be modified according to results obtained and social and technological developments. This issue should be included in the mandate of an administrative body such as the General Commission on Sustainable Development or another dedicated body. The monitoring of this policy should be based on a national set of indicators that can be used to assess changes in behaviours, similar to the indicators of the 2010-2013 National Sustainable Development strategy⁽⁴⁷⁾.

- 24 ■ Mandate an organization dedicated to ensuring long-term monitoring of the national sustainable consumption policy.
- 25 ■ Set-up explicit indicators for communicating the progress made to all of the stakeholders.



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We wish to thank Karen Harshfield
for her contribution to the translation.

This note is a summary of the work of the members of the "Sustainable consumption" mission set-up by the Centre d'analyse stratégique and chaired by Elisabeth Laville. Ms Laville is the founder and director of Utopies, a sustainable development consultancy.



[46] Circular from the Prime Minister n° 5351/SG dated the 3rd of December 2008.

[47] www.developpement-durable.gouv.fr/IMG/pdf/11_IndicateurDD_derniereversion.pdf

**“Pour une consommation durable”
Report of the mission chaired by Elisabeth Laville,
to download from the website**

www.strategie.gouv.fr, publications heading



Note de synthèse n° 212 -
January 2011 is a publication
of the Centre d'analyse stratégique
Director of Publication:
Vincent Chriqui, Director General
Chief Editor:
Pierre-François Mourier,
Deputy Director general
Copy Editor:
Delphine Gorges
Publication department:
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Printer:
Centre d'analyse stratégique
Copyright: January 2011
N° ISSN: 1760 -5733

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“Green nudges” : new incentives for ecological behaviour

Many obstacles stand in the way of adopting ecological behaviour, whether material, financial or psychological in nature. These restrictions limit the effectiveness of conventional approaches, which combine awareness campaigns, technological innovations as well as economic and normative instruments. Accordingly, consideration should be given to introducing new methods liable to bring about a lasting change in consumer habits.

Amongst these methods, the use of strategies developed in behavioural sciences –and referred to as ‘nudges’– are gaining momentum. The aim of these strategies is to lead individuals to make choices in the collective interest, without being prescriptive or guilt-inducing at the behavioural level. Applied to sustainable development, this new type of incentive, referred to in this context as ‘green nudges’, uses several behavioural biases such as compliance

to social norms or inertia to change in order to encourage citizens to adopt lifestyles showing a greater respect for the environment. Several field experiments testing the effects of green nudges *in situ* have been conducted in North America for a variety of ecological purposes including energy saving and preventing pollution. These studies reveal encouraging results regarding the operational, effective, adjustable and unrestrictive nature of nudges. These behavioural incentives must however still be refined in order to overcome the various limits observed (unintended side-effects, difficulty in transferring them on a large scale, durability of effects, etc.). Although they are not miracle cures for ecological issues, green nudges remain valuable motivational procedures when used alongside existing instruments. ■

PROPOSALS

- 1 Develop the ‘green nudge’ initiatives identified as the most promising in light of other countries’ experiments:
 - utility bills encouraging energy savings by making people compare themselves with others;
 - public operators selecting electronic format as the default means of sending correspondence and billing rather than paper format.
- 2 Create public-private partnerships to devote the potential of smart technologies for green nudges. For example, a display unit connected to a ‘smart’ electricity meter could be installed in private homes to give consumers a better realtime feedback of their energy consumption and savings.

MAIN ISSUES Sustainable development and ecological imperatives require not only technological innovations but also changes in individual and collective behaviours. However, although current scientific and technical advances are undeniable, the 'advent of the ecocitizen' is still more of a wish rather than reality. Going from good intentions to ecological actions is proving complex. **However necessary they are, changes in behaviour towards protecting the environment do not happen on demand. They can, however, be encouraged.** This approach traditionally involves the use of information campaigns, tax measures and norms, the benefits and limitations of which are well-known. Some have suggested a **policy of libertarian paternalism⁽¹⁾ on environmental issues.** This term is used to refer to a policy aimed at guiding individuals' choices towards decisions that favour the health and well being of the majority. The 'libertarian' aspect refers to the necessity of respecting everyone's freedom to act, decide or even change their minds as it suits them⁽²⁾. This approach is based on advances in behavioural sciences⁽³⁾ that were designed not so much to decode the psychological mechanisms underlying decision-making but more to take effective action at the end of the chain of events that led to decision-making. These studies are implemented via behavioural strategies, referred to as 'nudges', which are as favoured for their simplicity, their effectiveness and the relatively low cost of implementing them as they are discussed for their limits⁽⁴⁾. **So what contribution can behavioural sciences make to the ecological cause?**

Can they contribute towards bridging the gap between displays of 'virtuous intentions' and actual daily behaviour?

THE THEORETICAL VALUE OF BEHAVIOURAL STRATEGIES

Ecological behaviour: between knowing, being able to and wanting to

The gap between will and action, as observed in numerous areas, is also present in environmental issues⁽⁵⁾. Although 93% of French people view climate change as a 'serious' or even 'very serious' problem, only one-third of them use a low-CO₂ emission means of transport on a daily basis⁽⁶⁾. Thus, ecological standpoints are not necessarily mirrored in corresponding forms of behaviour, especially if this would require making significant changes to daily habits. To explain this ambivalence, some have suggested individuals' lack of knowledge with regard to the risks run and the appropriate behaviours to deal with them. This hypothesis is partially based on a common premise in political policies: "an informed person will make the right choices."

The reality is more complex. Being aware of the ecological virtues of a form of behaviour does not necessarily result in that behaviour being adopted and, in parallel, being in possession of relevant information on behaviours harmful to the environment does not necessarily cause an individual to abandon that behaviour.

Since being conscious of risks is a fluctuating and limited process⁽⁷⁾, the interest devoted to ecological issues is often "reduced" in favour of events the consequences of which can be felt more immediately or more intensely in daily life⁽⁸⁾.

Moreover, even if the intent to act is present, that intent can be frustrated by certain realities of an economic, psychological and pragmatic nature⁽⁹⁾.

Virtuous behaviour often goes against lifestyle and consumer habits and has to overcome *inertia to change*.

[1] Sunstein C. and Thaler R.H. (2003), "Libertarian paternalism is not an oxymoron", *The University of Chicago Law Review*, vol. 70 [4].

[2] Oullier O. and Sauneron S. (2010), "Improving public health prevention with behavioural, cognitive and neuroscience", *Rapports et documents*, Centre d'analyse stratégique (192 p.). www.strategie.gouv.fr/IMG/pdf/NeuroPrevention_English_Book.pdf

[3] This branch of the economics uses findings from psychology in order to gain a better, and more realistic understanding of the discrepancies between the actions observed at an individual level and the predictions made based on the standard models in economics.

[4] Stephens J. (2009), "Green nudges: an interview with Obama regulatory Cass Sunstein", *Grist Magazine*.

[5] Kollmuss A. and Agyeman J. (2002), "Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior?", *Environmental Education Research*, vol. 8 (3), 239-260.

[6] European Commission (2009), "European attitudes towards climate change", Eurobarometer 72.1.

[7] Linville P.W. and Fischer G.W. (1991), "Preferences for separating and combining events: a social application of prospect theory and the mental accounting model", *Journal of Personality and Social Psychology*, vol. 60.

[8] Slovic P. (1987), "The perception of risk", *Science*, vol. 236 [4799].

[9] Gertner J. (2009), "Why isn't the brain green?", *The New York Times*, 19 April edition.

Adopting it thus requires a *proactive approach* (such as separating rubbish for recycling), and sometimes not everything is done to facilitate this approach (for example, some cities do not provide adequate receptacles for sorting and disposing of recyclable materials). Furthermore, such an approach generally involves a cost, whether financial (such as the higher price of a hybrid vehicle) or temporal (such as the duration of journeys made by public transport).

Since the (individual and collective) benefits of these actions cannot be observed in the short term, feelings of powerlessness and the difficulty of assessing the 'return on investment' are heightened accordingly⁽¹⁰⁾. Finally, even the most motivated people may be discouraged by the existence of paradoxical situations, largely due to 'free riders' – people who 'do not play along' and take advantage of the acts of others (for example, a cyclist riding in city traffic might be more heavily exposed to the harm caused by urban pollution than someone driving a car with the windows closed).

The scope of these various obstacles is all the greater if the forms of behaviour to be adopted are in the minority and do not constitute the perceived *social norm*.

Green nudges as a new type of incentive

These examples show the **multifactorial character of the elements making adopting ecological forms of behaviour** more difficult.

In this context, knowledge of the psychological mechanisms of decision-making, gleaned from work done in behavioural sciences, could make it possible to facilitate **behavioural changes**.

Such an approach appeals to the sensitivity of our actions and our decisions to their surrounding context, and particularly to the social norms at play. As illustrated by findings in social psychology, what each person perceives as the behaviour generally adopted and/or approved by the group in which they are active will heavily influence their decisions and their actions.

The operationalisation of this behavioural approach occurs through strategies referred to as 'nudges', a concept introduced by the Americans Richard Thaler and Cass Sunstein⁽¹¹⁾ to illustrate the 'helping hand' leading someone to do something...and *in fine* to make better choices for themselves and for the public interest.

Nudges are non-guilt-inducing and non-prescriptive, since the individual always has the option of not following them.

Successful use of nudges has already been made in sectors such as savings accounts⁽¹²⁾ or public health campaigns⁽¹³⁾ (*Box 1*). **Extending these campaigns to the field of ecology seems to hold promise, especially since the psychological factors on which nudges rely, the most important of which are social comparison and inertia to change, are particularly prominent with relation to environmental issues.** They are then referred to as 'green nudges' or 'ecological nudges'.

Box 1.

Nudges to promote healthier eating habits

Of the numerous fields of application for behavioural strategies, public health campaigning is one of the most well-developed. As an illustration, three nudges were recently tested for the purpose of promoting healthy eating habits. The first nudge involved asking the employees of a company to plan their menus for the whole of the coming month. Viewing the succession of meals as part of a schedule led them to avoid planning the same menu for multiple days in a row and thus to diversify their choices of food. In another example, adding one red crisp at regular intervals between normal chips packaged in cardboard tubes led to a reduction in consumption by 50%. Using these visual markers draws the attention of the eater, gives them points of reference for their own consumption and causes them to interrupt that consumption. Finally, removing the trays for people who eat at the self-service restaurant on a university campus had the immediate result of reducing the portions the students took for themselves and reducing food wastage by an average of 50%⁽¹⁴⁾.

[10] Weber E.U. (2006), "Experience-based and description-based perceptions of long-term risk: why global warming does not scare us (yet)", *Climatic Change*, vol. 77 {1-2}.

[11] Thaler R.H. and Sunstein C.R. (2009), *Nudge: Improving decisions about health, wealth and happiness* Penguin (329p.).

[12] Thaler R.H. and Bernartzi S. (2004), "Save more tomorrow: Using behavioral economics in increase employee savings", *Journal of Political Economy*, vol. 112{1}.

[13] Oullier O. and Sauneron S. (2010), *op. cit.*

[14] For more details on these experiments, see Oullier O., Cialdini R., Thaler R. and Mullainathan S. (2010), "Improving public health prevention with a nudge", in Oullier O. and Sauneron S. (2010), *op. cit.*

➤ GREEN NUDGES ALREADY IN ACTION

Certain green nudges have already been trialled abroad (mainly in California, a State famed for its commitment to ecological issues) using various *modi operandi* and with various objectives.

(Respecting the environment as the default option

One strategy that is easy to implement and has been proven to be effective is to **offer the most environmentally friendly option as the default choice**. This method relies on inertia to change and the relative laziness of people with regard to adopting an approach that does not come naturally to them.

▶ Paper-saving

Thus, in the USA, some banks, energy suppliers and telephone operators now send bills in electronic format by default. If clients want to receive them in hardcopy, they must specifically ask, and they will be charged for this service. This strategy is interesting when compared with the one implemented in France by the majority of service providers, which requires clients to take action themselves to make sure they no longer receive bills in paper form.

Another illustration is the simple fact of printing two sheets on one page, or printing double-sided as the default option, which meant that American Rutgers University saved over seven million sheets in a single semester, or 620 trees⁽¹⁵⁾.

It should be noted that in France, a similar measure was adopted by a large number of ministries as part of the "Exemplary Administration Plan" launched in early 2009⁽¹⁶⁾.

▶ Reducing the number of plastic bags

The third well-known example is the fact that not providing customers with plastic bags at checkouts obliges them to ask for or even pay for them, as has been the case in China since 2008⁽¹⁷⁾ and in Italy since January 1st, 2011. This dual obligation constitutes a powerful restriction on overconsumption and encourages people to favour alternative options, such as reusable bags.

For example, the city of Washington DC introduced a tax of 5 cents per plastic bag on January 1st, 2010. This measure probably contributed toward reducing the number of bags found in Potomac river by 66% between the annual cleaning operation of 2009 and the 2010 operation. In California, the governor is seeking to go even further, as he is currently advocating a law before Congress aimed at prohibiting the distribution of free plastic bags in shops and taxing the distribution of paper bags.

In France, initiatives along this line depend entirely on the will of distributors⁽¹⁸⁾. In March 2010, the Ministry for Ecology stated that, thanks to the efforts made by shopowners, *"the number of disposable checkout bags distributed in shops went from 10.5 billion in 2002 to 1.6 billion in 2008"*⁽¹⁹⁾. These provisions are effective, as well as being popular, according to recent opinion polls⁽²⁰⁾, and their positive results are in contrast with the initial scepticism with which the draft law was welcomed⁽²¹⁾.

(Promoting ecological best practices so they become social norms

Several interventions based on spontaneous adherence to social norms have been launched for various environmental purposes.

[15] Source: Rutgers University.

[16] Circulaire "from the Prime Minister no. 5351/SG of 3 December 2008 on *"the exemplarity of the State with regard to sustainable development in the operation of its departments and its public establishments"*.

[17] For China, this measure has led to a reduction of around 40 billion plastic bags used between 2008 and 2009, representing a saving of 1.6 billion tonnes of oil. Source: Watts J. (2008), "China plastic bag ban 'has saved 1.6m tonnes of oil'", *The Guardian*, 22 May.

[18] The federation of Trade and Distribution Companies signed a convention on November 19, 2009 under which it undertook to remove all disposable checkout bags from distribution by the end of 2011 (www.fcd.asso.fr/index.php?page=17). In December 2010, the French Senate stated that a tax of 10 euros per kilogram of bags would be introduced in 2014.

[19] Source: Ministry for Ecology, Energy and Sustainable Development (2010), *Consommation durable, des engagements aux actes*.

[20] <http://www.nouschangeonsavecvous.com/2010/04/sacs-plastiques/>

[21] Article 47 of the agricultural framework law of January 5, 2006, which prohibited the single-use checkout bags, was held to be in breach of a European directive (see the report on the application of this law: www.assemblee-nationale.fr/13/rap-info/i0628.asp).

► Recycling waste

On the same principle, researchers carried out a pilot experiment on waste recycling in the town of LaVerne in California⁽²²⁾. Every day for four weeks, a note was placed on the door of 120 homes informing the occupants of the number of their neighbours who participate in domestic waste recycling and the quantity of recycled material that that represents. The impact was immediate: the volume of recycled materials increased by 19%. Furthermore, this effect was durable, as it continued for four weeks after the campaign of placing notes on doors was discontinued. The strength of this strategy lays in providing informational feedback on the behaviour of the neighbourhood, and thus of the social norm applicable in the district. An interesting fact is that the figures mentioned on the printed note were handwritten, thus emphasising the human factor, which is crucial in this type of initiative.

► Energy-saving

The area of energy consumption can also benefit from this type of strategy. An experiment carried out in California compared the effectiveness of four messages placed on front doors in an attempt to entice 290 households into using fans rather than air conditioning⁽²³⁾. The first message informed consumers that by adopting such a change, they would save 54 dollars on their monthly electricity bill. The second informed them that doing so would enable them to avoid generating around a two hundred pounds of greenhouse gases every month. The third message highlighted the fact that using fans was the most responsible behaviour, as it consumed the least amount of energy. Finally, the fourth message informed people of the high percentage of neighbouring households using fans rather than air conditioning, a statistic accompanied by the comment: *“the most popular choice in your community”*. The result was that the households receiving this fourth message were the ones that reduced their consumption by the greatest amount – 10% less by their following electricity bill – and the most durably.

► Water-saving

Social psychologist Robert Cialdini and his colleagues carried out an experiment that illustrates how the development of more economical behaviours with regard to water can be based on changes made to the minimum cost. Here, the intervention consisted of placing a note in the bathroom of a hotel indicating the percentage of clients who reused their towels instead of having them changed every day. The result was that 44.1% of clients reused their towels, as against 35.1% when the arbitrarily chosen and deliberately high statistic (75%, *Figure 1*) was not communicated to the client⁽²⁴⁾.

▼ **Figure 1.**

Example of an effective encouragement to reuse bath towels in hotels
Adapted from Goldstein *et al.*, *op.cit.*]



[22] Schultz P.W. (1998), “Changing behavior with normative feedback interventions: A field experiment on curbside recycling”, *Basic and Applied Social Psychology*, vol. 21{1}.

[23] Nolan J. et al. (2008), “Normative social influence is underdetected”, *Personality and social psychology bulletin*, vol. 34.

[24] Goldstein N.J. et al. (2008), “A room with a viewpoint: using social norms to motivate environmental conservation in hotels”, *Journal of Consumer Research*, vol. 35{3}.

This statistic concerning the behaviour of others has become a much more effective social norm in terms of encouraging people to reuse towels than the mere appeals to protect the environment traditionally displayed in hotels. However, such a strategy can raise ethical concerns since it relies on providing a percentage of behavioural adoption that does not exist⁽²⁵⁾ in order to help the consumer change his towel reusing behaviour. Some might consider this a form of manipulation that the ends cannot justify.

► **Clean streets**

Moreover, being conscious of social norms does not necessarily involve comparative statistics and can be based on a simple perception of the surrounding reality. For example, a person living in an urban environment in which a large amount of rubbish is encountered on the ground will be more likely to litter themselves. A result such as this, which has been scientifically proven⁽²⁶⁾, might seem obvious. Its consequences are no less significant for all that. At the city level, for example, a major investment to clean up pavements creates a social norm of cleanliness that is more likely to encourage passers-by to practice ecologically responsible behaviour and can in the long run result in savings on cleaning bills. In addition, this observation promotes the use of communication campaigns setting out the positive consequences of the behaviour they seek to encourage rather than the negative consequences of failing to adopt that behaviour.

➤ **PARTIALLY SURMOUNTABLE LIMITATIONS**

However interesting they might be, strategies based on ecological *nudges* still raise a number of questions.

(**The boomerang effect of social norms**

The first is the **adverse effects caused by nudges, which have an impact on comparison weightings**. In fact, social norms work in two directions: they can promote

sensible behaviour on the one hand, but also increase activity that is not environmentally friendly if they are presented and/or perceived as being the behaviour of the majority in any one population.

For example, in an experiment carried out in California, around 1,000 households received data on their energy consumption and that of their local neighbourhood⁽²⁷⁾. As expected, the comparison of these two sets of information visibly reduced energy consumption in households that initially consumed a lot of energy. More surprisingly, the impact was the opposite in households that used less energy from the start when compared to the average for their area: the green nudge led to an increase in their consumption.

Figure 2. Information added to an energy bill (Adapted from OPOWER⁽²⁸⁾)



However, this adverse or boomerang effect was avoided by showing initial consumption in the form of a graphic symbol (smiling face or frowning face) on the bill. The

[25] The results of the experiment cannot possibly be provided before the end of the experiment itself.
 [26] Cialdini R.B. et al. (1990), "A focus theory of normative conduct : recycling the concept of norms to reduce littering in public places", *Journal of Personality and Social Psychology*, vol. 58(6).
 [27] Schultz P.W. et al. (2007), "The constructive, destructive, and reconstructive power of social norms", *Psychological Science*, vol. 18.
 [28] The OPOWER company (<http://www.opower.com>) works with the British government on the implementation and evaluation of *nudges* in public policy.

households who “got a smile” reduced their energy bill over subsequent months, irrespective of their original level of consumption (above or below the average) (Figure 2).

We can draw a number of conclusions from these results. A normative message can help people who are less respectful of the environment to adopt more constructive behaviour patterns. On the other hand, for people who already have a pro-environment attitude, this kind of information can make them give up their efforts if it makes them think, “I’m doing better than other people”. However, these undesirable effects can be avoided by using symbols (graphic ones in this case) expressing social approval (the message then becomes positive: “I’m setting a good example”).

Finally, in spite of criticisms of the temporary nature of the effects of ecological nudges, these results lasted for several weeks after the initiative: they are not therefore based, or totally based, on the element of surprise or novelty.

Sensitivity to individual characteristics

It is also often said that *nudges* are greatly derived from individual personality traits. Effectiveness greatly depends on the initial readiness of individual citizens to follow the recommended direction. In the United States, empirical studies have shown that response to green nudges varies according to the level of altruism in individuals, their support of the ecological cause⁽²⁹⁾ or their political awareness⁽³⁰⁾.

There are also those who are concerned that behavioural strategies cannot be transposed and still be effective in other cultures. For example, is the influence of comparison with other people as powerful in other societies? Although understandable, this doubt is not borne out

by the results obtained in countries with highly diverse cultures, especially in Asia. For example, a recent study showed that it was more effective to inform a Chinese farmer of the high number of his colleagues who had adopted environmentally friendly agricultural practices than to pay him to do the same⁽³¹⁾.

The difficulty of transposing initiatives to a bigger scale

Finally, there is the problem of the general application of these initiatives that, though effective, appear to be limited as regards extending their scope.

Thus, the LaVerne experiment on waste recycling previously referred to was reproduced on the scale of a local community in California, this time providing information on the behaviour of all within the administration. The result was not as conclusive as the experiment conducted at neighbourhood level. In fact, the figures provided were so extensive that they didn’t mean anything concrete to those involved. These results verified the social psychology rule that says that social norms are even more constraining (and effective) when they concern people close to you.

However, encouraging avenues for widening the scope of such good practices are currently under development. Hunt Alcott and Sendhil Mullainathan, among behavioural economists leading lights, have just issued proposals in the journal *Science*⁽³²⁾, for example one involving the use of data mining techniques. The idea is to cross-reference data not directly relating to ecological behaviour (number of children, income, etc.) but that might have an influence on responses to *nudges*. In this way, they hope to be able to identify homogeneous social groups where comparison, even on a grand scale, will have greater impact.

[29] Schultz P.W. and Zelezny L. [2003], “Reframing environmental messages to be congruent with American values”, *Research in human ecology*, vol. 10[2].

[30] To do this, researchers used electricity bills with or without statistical data on consumption in the local area and advice on saving energy. Initial results from the study published in the summer of 2010 show that the green nudge leads to a 3.1% reduction in electricity consumption amongst Democrats as against only 0.7 % amongst Republicans. Costa D.L. and Kahn M.E. [2010], “Energy conservation nudges and environmentalist ideology: Evidence from a randomized residential electricity field experiment”, NBER Working Paper, n°15939.

[31] Chen X. et al. [2009], “Linking social norms to efficient conservation investment in payments for ecosystem services”, *Proceedings of the National Academy of Science USA*, vol. 106[28]. For an example in India, see also Simon S. [2010], “The secret to turning consumers green”, *The Wall Street Journal*, 18 October issue.

[32] Alcott H. and Mullainathan S. [2010], “Behavior and energy policy”, *Science*, vol. 327[5970].

➤ WHAT ARE THE PROSPECTS FOR USING BEHAVIOURAL SCIENCES FOR ENVIRONMENTAL ISSUES?

If *nudges* have their limitations, these can still be attenuated where properly identified and anticipated. So using them does open up a number of promising avenues.

Developing and structuring political and academic initiatives

Overseas, there is now a real desire to structure initiatives spread across a range of ecological *nudges* via coordinated programmes.

With this aim the University of Columbia New York has developed the “Centre for Research on Environmental Decisions” (CRED), bringing together experts in economic and behavioural sciences dedicated to ecological issues. CRED is part of a national and international network of institutions where effort is focused on the psychological bases of environmental protection, funding and conducting laboratory research, field experiments and the publication of guides and articles on the topic⁽³³⁾.

In addition to this, coordination has taken concrete shape in the United Kingdom through the creation of a public structure unique at this time. A *Behavioural Insights Team* was set up in July 2010 within the British Government, headed by Prime Minister David Cameron. This institutional body brings together behavioural scientists tasked with developing, managing and evaluating *nudges* in the sectors of the economy, finance, public health, education and energy. The direct link between the structure and the Prime Minister means experiments can easily be launched rapidly (stand-alone or as partnerships with public and private institutions) and then be evaluated. If they prove to be conclusive, they are then suggested to the authorities in charge of this work for application on a bigger scale. **This type of structure would appear essential in terms of governance**, with a view to transposing the most interesting experiments onto a large scale⁽³⁴⁾.

In France, it appears to be appropriate to develop measures identified as being the most promising in terms of experience abroad.

1. Draw attention to and praise the sensible behaviour of “neighbours” or members of the same “community” in order to make ecological behaviour a social norm that consumers will adopt spontaneously.
2. Propose energy consumption options by default that are environmentally friendly, and encourage people to engage in a costly procedure, at least in terms of time, if they choose the option that causes the most pollution.
3. Task behavioural science specialists with creating public awareness campaigns.

PROPOSAL 1

- Encourage people to save energy through the use of utility bills which compare energy consumption.
- Develop default electronic rather than paper communications from public operators.

Capitalise on the possibilities offered by smart technology

The development of *smart phones* and the applications they offer for the spreading of intelligent electronic networks and *smart meters*, can offer promising perspectives for green nudges.

There are a number of examples of devices combining smart technology with behavioural strategies.

- ▶ In 2008, Fiat and Microsoft launched the *Eco:Drive Blue&Me*⁽³⁵⁾ programme. Using a USB port available in all cars the driver can collect a series of data on his journey, fuel consumption, CO₂ emissions, etc. Once the data has been downloaded onto his computer, he

[33] Center for Research in Environmental Decision: <http://cred.columbia.edu>

[34] The British initiative might attract other countries quickly, starting with the United States, where a proposal to develop a sector dedicated to behavioural sciences within the Government's Energy Department has been submitted to Congress [Bill HR 3247]

[35] Source: <http://www.fiat.com/ecodrive/>

has direct access to it and can obtain advice on how to optimise his driving style in order to produce as little pollution as possible. The driver can also log on to a community site to take part in eco-citizen driving contests to measure himself against other drivers.

- ▶ *DIY Kyoto*, a London-based company, is currently developing a web site that will enable everyone with a special unit⁽³⁶⁾ to compare his electricity consumption. Also, the unit has the special feature of being able to change colour instantly in response to energy consumption. This indication given to everyone in real time is an undoubted plus for encouraging behavioural change (*Figure 3*).
- ▶ When plugged in, devices known as *ploggs* are used to record electricity consumption and send it to a computer, where statistics for each appliance in a household can be shown. Based on these tools, the Fraunhofer Institute⁽³⁷⁾ has developed a *smart phone* application that enables the user to view the consumption of an electrical appliance on his screen if he points at it with his phone.
- ▶ In France, ERDF's experimentation with Linky meters offers hope for a number of possibilities⁽³⁸⁾. In fact, these "smart metering systems" will make it possible to update energy suppliers with information on consumption every half-hour and send the user his exact energy use curve. Also, the meter will ultimately offer the option, via a disconnection relay and a large number of contactors, to control the periodic activation of seven appliances. To do this, based on the same principle as switching on the immersion heater during off-peak hours, users can choose to operate their appliances only at certain times: for example, during hours when renewable energy is usually available.

Figure 3.
Electricity sockets showing the consumption of the appliance connected
(Adapted from Insic Wall Socket by Muhyeon Kim)



Finally, ERDF's Linky meters will be able to communicate with display panels installed in homes to show real-time consumption. These devices, which could be used with text messaging consumption alert systems, are likely to achieve considerable energy savings. However, as the French Environment and Energy Management Agency⁽³⁹⁾ recently discovered to its cost, the price of such devices (the user pays around fifty euros) could "prevent people on modest income from accessing this information"⁽⁴⁰⁾.

So how can we offer these smart devices at a lower cost to all consumers? The cost could be spread across the public electricity network user tariff, with adapted tariffs for people on modest incomes. In other cases, **the State could partially finance the installation of the devices (or totally in the experimental phase)** as per the system set up in California. Over there, electricity suppliers (who have a legal obligation to encourage users to reduce consumption) have received support from a fund (3.4 billion dollars) provided by President Obama to roll out smart meters and associated equipment.

[36] <http://www.diykyoto.com/fr>
[37] <http://www.ise.fraunhofer.de/about-us>

[38] 300,000 Linky meters are currently being trialled in the Lyon and Tours/Angers regions until 31st March 2011. National rollout across 35 million French households could happen between 2012 and 2017. <http://www.erdfdistribution.fr/Linky>

[39] Agence de l'Environnement et de la Maîtrise de l'Énergie (ADEME).

[40] "ADEME questions use of new smart meter", *Le Monde*, Thursday 11th November 2010 issue.

Due to these various mechanisms, consumers are now actively involved: smart appliances (two-way, real-time, etc.) now provide constant feedback on the effects of their behaviour. French and, in a more general sense, European industries are now way ahead in terms of green smart technologies, and it would appear opportune to use this reserve of expertise to develop public-private partnerships.

PROPOSAL 2

Create public-private partnerships to devote the potential of smart technologies for green nudges. For example, a display unit connected to a smart electricity meter could be installed in private homes to give consumers a better realtime feedback of their energy consumption and savings.

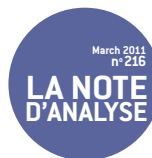
Encourage everyone to bring creativity and experience to the table

At this point in time, tried and tested nudges are mostly the result of a limited number of academic studies, mainly in the US. It would therefore seem to be a good idea to vary what is available and find as many original strategies as possible to increase overall impact.

So a public competition asking for ideas and developing a website devoted to the topic could produce solutions that are both innovative and pragmatic, being derived from the experience of the consumers themselves.

CONCLUSION They may not be miracle solutions to ecological problems, but green nudges are still an interesting approach as an addition to traditional tools of environmental policy (awareness campaigns, education in sustainable development, normative/financial tools, new technology). In fact, *nudges* have the advantage of being operational strategies, which are both effective and adjustable. They also make it easier to adopt new behaviour and go against the recurrent notion associating “environmental action” with “effort”.

However, to be truly effective and more than just anecdotal, the use of *nudges* needs to be incorporated into a consistent environmental policy. One might consider how *nudges* could be associated with tax measures. This could be the appropriate compromise between a desire to raise awareness through the rather “laissez-faire” approach often found in the US, and the more regulatory approach traditionally preferred in France.



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La Note d'analyse n° 216 - mars 2011 est une publication du Centre d'analyse stratégique
Directeur de la publication : Vincent Chriqui, directeur général
Directeur de la rédaction : Pierre-François Mourier, directeur général adjoint
Secrétaire de rédaction : Delphine Gorges
Service éditorial : Olivier de Broca
Impression : Centre d'analyse stratégique
Dépôt légal : mars 2011
N° ISSN : 1760-5733

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