



JRC SCIENTIFIC AND POLICY REPORTS

# Applying Behavioural Sciences to EU Policy-making

2013

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EUR 26033 EN



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## Summary

Policy-making can greatly benefit from a better understanding of people's behaviour. Often the assumption has been that people are 'rational'. However, this assumption has been shown to be unrealistic, and perhaps explains the limited effectiveness of some policies in the past.

Well-designed behavioural studies can offer useful insights to policy-makers by generating the evidence required to improve policies. Such studies are applicable to a wide range of EU policy areas, wherever a behavioural element exists. Whether policy-makers aim at changing behaviour or designing better regulations, greater knowledge on how people are likely to behave should serve them well.

## Introduction

People's behaviour is relevant to EU policy. Sometimes, the objective of a policy will be to change behaviour for the common good, for example getting people to quit smoking or recycle more. In other cases, it will be to prevent citizens from behaving against their best interest, for example by falling victim to misleading marketing practices. Or it might be to encourage consumers to take better into account the future consequences of their current behaviour (e.g. smoke less today to stay healthy tomorrow).

In all these cases, behaviour is a key element for the success of a policy initiative. The policy can be said to have a relevant *behavioural element*. Good policy-making should identify this element, assess its importance for the effectiveness of a policy, and try to understand it better. Sometimes this will be a straightforward task, sometimes not.

This report is intended as a guide for policy-makers wishing to introduce a more refined understanding of human behaviour into the policy-making process.<sup>1</sup> It begins by discussing the background to the current popularity of applied behavioural science and goes on to cover specific issues that should be taken into account when incorporating behavioural insights into the design, implementation and monitoring of policies.<sup>2</sup>

1. This report discusses the application of behavioural science to EU policy-making. Good accounts of the merits of behavioural insights, in general and as applied to policy-making, can be found elsewhere in the literature (see list of recommended readings at the end of this document).

2. This report uses the term applied behavioural science instead of behavioural economics, following the suggestion of Daniel Kahneman in his preface to *The Behavioral Foundations of Public Policy* (see recommended readings).

## I. Not assuming rationality

Applied behavioural science studies human behaviour and applies its findings to policy analysis. It questions the assumption that people act ‘rationally’, making choices that lead to the best possible outcome for them. However, empirically – and anecdotally – this assumption does not hold. People sometimes make foolish decisions, which are ultimately not in their self-interest. We smoke. We eat too much. We save too little. We get heavily into debt.

Public policy has often relied, tacitly perhaps, on this assumption of rationality when accounting for human behaviour. This may have led to suboptimal policies in the past. For example, the amount of information passed on to consumers (through product labelling or mass media campaigns) has tended to increase continuously, under the assumption that they will be able to process it to their best advantage. This has not always worked, and may have even been counterproductive in some cases.<sup>3</sup>

In the behavioural science literature, deviations from rationality in decision-making are well documented.<sup>4</sup> Moreover, these deviations tend to be consistent across time and populations. For example, people dislike losing something (say €20) more than they like gaining it, whereas this should not be the case if they were ‘rational’. Or, for example, when making decisions, people tend to give disproportionate weight to information that readily comes to mind (a recent conversation, for example). Again, this shouldn’t happen to ‘rational’ agents.

The question emerges: if people’s behaviour is not rational, then how can it be explained? The scientific literature is full of attempts to provide explanations. Many factors are taken into account. However, there is no single alternative model of human behaviour, no unifying and all-encompassing theory which can predict it. Any attempt at explaining behaviour in a particular context needs to rely on specific empirical observations. And this is probably a good thing.

A proper understanding of human behaviour requires reality checks. In a policy context, this approach makes sure policy-makers rely on evidence, not assumptions. It results in a more grounded policy-making process, where ideas about people’s expected behaviour are first tested and then reassessed. The original policy initiative can then be implemented, dropped or modified.<sup>5</sup>

Take the public health example of smoking. What policies should be put in place to curb smoking? Apart from higher taxes and smoking bans in public places,

<sup>3</sup> Some studies, for example, have shown that calorie labelling in New York restaurants have not led to a decrease in calorie consumption, and in some cases have even led to an increase in calorie consumption among certain groups of people.

<sup>4</sup> The term commonly used to describe such deviations is biases and heuristics (mental shortcuts, or ‘rules of thumb’), following the work of Kahneman and Tversky in the 1970s. They are also sometimes referred to as anomalies.

<sup>5</sup> See *Test, Learn, Adapt* (in the list of recommended readings) for a good account of this approach.



### System 1 vs. System 2

One of the most policy-relevant lessons to come out of behavioural economics is the distinction between automatic and in-depth thinking. Kahneman (2011) refers to these as System 1 and System 2, respectively. We go about most of our daily lives using System 1 (e.g. recognising facial expressions, driving our cars). System 2 requires greater mental effort and is used only on specific occasions (e.g. calculating a tip). System 1 will make judgments subject to biases and heuristics, while System 2 will opt for detailed calculations relying on mathematics and statistics.

Take the following example: a bat and a ball together cost 1.10 Euros. The bat costs 1 Euro more than the ball. How much does the ball cost? System 1 will lead you to believe, if for a moment only, that the answer is 10 cents. System 2 will take a bit longer, but will eventually make you arrive at the correct answer, which is 5 cents.

By challenging the assumption of rationality and by introducing notions such as System 1 vs. System 2, applied behavioural science has immediate policy implications. For one, changing behaviour does not necessarily mean changing minds. It is well-documented that people can think one way but act in another way (e.g. smokers continue to smoke even though they are aware of the health risks). So the focus of any attempt to change behaviour should be behaviour itself, not the thought process that is presumed to lead to behaviour.

Another immediate implication is that information is not enough to change behaviour. Since much of behaviour is automatic, instinctive and habitual, information will have no bearing on it. The success of policy initiatives such as mass media campaigns and product labelling, therefore, cannot be guaranteed.

#### System 1

- Regulates automatic behaviour
- Thinks fast
- Uncontrolled, unconscious, effortless
- Relies on stereotypes
- Gives immediate responses to frequent and familiar situations
- More prone to biases and heuristics
- Examples: driving a car, brushing teeth

#### System 2

- Regulates reflective behaviour
- Thinks slow
- Controlled, self-aware and effortful
- Solves problems through calculation and deliberation
- Takes well-thought out decisions
- Less prone to biases and heuristics
- Example: calculating a tip, planning the day

warning messages on cigarette packets are an option. In Europe, such warning messages are regulated by the EU. However, which messages will be most effective in discouraging smokers? Will it be simple facts expressed in clear language, or will pictures be more effective? Perhaps none of these options are as good as plain packaging, without any kind of labels at all.

If smokers were 'rational', a label with clear information about the hazards of smoking might be a good idea. But since they are not, alternative options need to be considered and tested. For example, an experiment could be conducted in which some subjects are exposed to traditional packages and others to new package types (with new messages or pictures or plain packaging). Their reactions to the different packages could be measured and compared.

This is only one example of how applied behaviour science could help identify the best policy option (more details about the different methods available for studying behaviour are listed below). The same approach can be applied to other EU policies where human behaviour is relevant.

## When should behavioural science be applied to policy-making?

Behavioural science can be applied to policies whenever there is a behavioural element to them. It can help design new policies, suggest improvements to existing ones, or provide ex-post explanations of why the target group of a policy reacted in a particular way.

There is a behavioural element to a policy:

(a) When behaviour change is the main objective of the policy, for example getting people to select an appropriate retirement savings plan, quit smoking or waste less food. This is the main thrust of the argument presented in *Nudge*, the bestselling book that is largely responsible for the popularity of applied behavioural science in policy circles today.<sup>6</sup>

(b) When people's behavioural response affects the effectiveness of a given policy, even if the aim of the policy itself may not be to change behaviour. Policies intended to protect the consumer are a case in point. They do not seek to change consumer behaviour, but to prevent abuse by industry. Knowing, for example, that consumers are particularly vulnerable to pre-set default options allowed EU regulators to take action and limit their use.

(c) In the policy-making process itself. Decision-makers are also subject to biases, heuristics, and a number of other influencing factors (such as social norms and in-group vs. out-group hostilities). Being aware of these potential pitfalls can help when developing and pushing forward new policies.<sup>7</sup>

<sup>6</sup> See list of recommended readings for a full reference.

<sup>7</sup> Guided by the conviction that policy-makers can apply behavioural insights reflexively to develop better policies, the European Commission's Joint Research Centre established a 'Summer School' in behavioural economics for EU policy-makers in 2012.

### UK tax letter example<sup>1</sup>

In 2011, the UK Behavioural Insights Team (BIT) conducted a trial to see whether and how the repayment rate of overdue taxes could be increased. Every year, substantial public resources are taken up to chase people who haven't paid their taxes on time. Moreover, the delay in payment of these taxes implies a loss in interest on these amounts which, added up over the entire population of the UK, can be quite significant.

BIT proposed harnessing the power of social norms in order to get people to pay their taxes on time. Humans are social animals and it has been confirmed empirically that they are strongly influenced by the behaviour of others. They conform to the norm, especially if they feel they are in a minority.

BIT tested different types of reminder letters to be sent to those who were in arrears. Instead of a menacing letter warning of the potential consequences of not paying on time (the traditional way), a tailored letter was sent explaining that most people paid their taxes on time.

This trial boosted repayment rates by up to 15% in the first 6 weeks. It was estimated that this would advance £160 million of tax debts over the six-week period of the trial. This would generate £30 million of extra revenue annually by freeing up resources allocated to collecting debt and improving cash flow.

Moreover, the trial showed that the more specific and targeted the message in the tax letter, the more effective it would be. If the recipient was only told that most people in Britain paid their taxes on time, repayment rates increased by 5%. But if they were told about people in their town, the figure increased to 15%.

<sup>1</sup> For more information on the application of behavioural insights to taxation, see *Applying Behavioural Insights to Reduce Fraud, Error and Debt* in the list of recommended readings.

A word of caution is necessary at this point. Applied behavioural science will help to better understand and anticipate behaviour, and perhaps nudge people in a particular direction. By showing what does (and what does not) affect behaviour, it can make policy interventions more effective. However, it is intended to complement existing initiatives, not replace them. Because of its growing popularity, applied behavioural science may be expected to solve problems it is not meant to address.<sup>8</sup>

The possibility of behaviourally-inspired policy solutions should not discard options that could be more appropriate and direct. Take the issue of tax avoidance. The UK government managed to accelerate tax declaration with smart framing of reminders, as in the tax letter example above. The premise is that people are fine with paying taxes and just need a friendly nudge to do it quicker. However, increasing

<sup>8</sup> See the New York Times article *Economics behaving badly* (in the list of recommended readings) for more along this line of argumentation.

the rate of tax compliance is something very different, as the intervention would address citizens who are in principle unwilling to pay their taxes. Such non-compliance may be due to social norms, to disappointment with the quality of public services, or to a lack of trust in institutions. Tackling this problem, therefore, would require different and bolder interventions, though behavioural science could still help.

### **Behavioural studies in the European Commission**

Behavioural insights began to be formally applied in the European Commission in 2009, when the Consumer Rights Directive recognised the power of default options. The Commission proposed limiting the use of pre-checked boxes in consumer contracts (the kind that made consumers purchase travel insurance even if they did not want it) in order to save consumers money by default<sup>1</sup>. Also, in a landmark case against Microsoft, the Commission relied on behavioural insights to arrive at a solution which offered consumers a sensible choice of Internet browser. This solution proved effective and is still in place today, offering a limited, but expandable, choice of browsers upon the installation of Microsoft Windows. This was the first instance where a supply-side issue was tackled by acting on demand side, while letting the market find its own natural outcome.

In 2010, DG Health and Consumers (SANCO) conducted a pilot study entitled Consumer Decision-making in Retail Investment Services. Through a series of laboratory experiments, the study observed how consumers reacted when faced with a choice between different investment products. It found that people struggled to make optimal investment choices even in the most simplified of environments. It also showed that subjects were prone to biases and framing effects (i.e. the way in which choices were presented). One of the conclusions of this work was that simplifying and standardising product information would significantly improve investment decisions.

Encouraged by the success of this study, and responding to expressions of interest from across the Commission, in 2012 DG SANCO set up the Framework Contract for the Provision of Behavioural Studies, open to all Commission services. Its purpose is to facilitate the running of behavioural studies in support of EU policy-making. However, given the interest raised across Commission services and the number of studies expected to be launched in the first years, DG SANCO requested assistance from the Joint Research Centre to provide scientific support. This collaboration started in 2012 and will continue for the foreseeable future, covering a wide range of policy areas, from CO<sup>2</sup> labelling in cars to package travel regulation.

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<sup>1</sup> The Consumer Rights Directive was ultimately adopted by the European Parliament and the Council of the European Union in November 2011.

## II. Issues to consider when applying behavioural science to policy-making

There are a number of key issues for policy-makers to consider when thinking about applying behavioural insights generally or conducting a specific behavioural study.

### (a) Identifying at what stage behavioural science should be applied to the policy-making process

In principle, behavioural science can be applied at any stage:

- At the design stage, when having a clear, evidence-based, understanding of how people may respond to a policy is a valuable asset. Wrong assumptions at this stage may restrict the spectrum of available policy options and jeopardise the success of the policy.
- Later in the process, for example when deciding how to implement a policy initiative. In the EU policy-making cycle, this would be the Impact Assessment Stage.
- It is also relevant once a particular option has been decided. For example, it may be sensible to run a small behavioural pilot study before committing to full-scale implementation.
- Finally, applied behavioural science is not only relevant to the design of new policy initiatives; it is also relevant to the critical evaluation of existing ones.

The earlier in the policy-making process behavioural science is incorporated the more effective its contribution is likely to be. An early application would not only ensure the soundness of the policy design (from a behavioural perspective), but it will also allow for more time to conduct behavioural studies in support of that policy.

### (b) Defining the role of behaviour in a policy initiative

Before applying behavioural science to a policy issue, the relevant behavioural element needs to be defined in as much detail as possible. Imagine a behavioural study is being considered for an EU policy initiative on effective labelling of food products. Since labels are intended for consumers to read, understand, and act upon, there is clearly a behavioural element here. However what, in particular, should the aim of such a study be? Discovering how consumers understand the label or finding out how their behaviour changes as a result of the label?<sup>9</sup> The choice will depend on the objective of the policy itself. This process of narrowly defining the objective of the policy and the role of behaviour, therefore, is necessary

<sup>9</sup> It cannot be assumed that just because consumers understand the label, they will change their behaviour. This is just an assumption, not supported by evidence (scientific or anecdotal).

### **Behavioural studies in the framework of an impact assessment process**

The European Commission has established some practices for better regulation, which include an impact assessment process to improve the design of European policy proposals.<sup>1</sup> The goal is to have more evidence-based European policy initiatives.

An impact assessment (IA) is a structured process, resulting in a formal document, which needs to follow specific guidelines.<sup>2</sup> By playing a role in this process, behavioural studies can effectively contribute to the push for better regulation in the EU.

Behavioural insights will be most effective when placed early in the roadmap of the policy initiative, before an IA study is even set up. The earlier, the better: ideally when there are no concrete ideas yet on how to solve a problem and when new, innovative policy options are welcome. A behavioural study with a narrow focus which comes too late in the IA process may turn out not to be very useful.

The earliest stage of the IA process where behavioural insights can be introduced is the problem definition section. In IA terms, individual behaviour can be one of the drivers of a policy problem that a new initiative tries to tackle. For example, drinking too many sugar-sweetened beverages (individual behaviour) could drive obesity (a problem that a public authority would like to tackle). This should be reflected in the problem tree, the IA standard illustration of how problems develop and their potential solutions.

When analysing the policy options for tackling a problem, actions with a behavioural approach can be identified. These actions could be self-standing policy initiatives which attempt to nudge individual behaviour. Alternatively, they could be 'softer' contributions to larger, more complex pieces of 'hard' legislation.

Finally, behavioural studies have a role to play in the impact analysis, which lies at the core of the IA process. This is where the effects of an intended policy are estimated. Quantification of impacts, whenever possible, is expected. Behavioural studies might not provide a precise calculation of an intervention's impact on variables such as Gross Domestic Product (GDP) and employment, but they will establish the direction of the impact and help estimate its overall magnitude.

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1 See EC brochure Better Regulation – simply explained, 2006  
[http://ec.europa.eu/governance/better\\_regulation/documents/brochure/br\\_brochure\\_en.pdf](http://ec.europa.eu/governance/better_regulation/documents/brochure/br_brochure_en.pdf)

2 See the 2009 impact assessment guidelines  
[http://ec.europa.eu/governance/impact/commission\\_guidelines/commission\\_guidelines\\_en.htm](http://ec.europa.eu/governance/impact/commission_guidelines/commission_guidelines_en.htm)

for adequately designing a research project and allowing for effective behavioural support to policy.

### **(c) Reviewing the available evidence**

The attitudes and behaviour of citizens with regard to the policy issue need to be well understood before any behavioural study is considered. This may imply carrying out a thorough literature review or consultation with stakeholders. Such a preliminary phase is necessary to get a first impression of people's attitudes and behaviour, and of the possible policy options available. This will provide a sound basis on which to begin designing a behavioural study.

### **(d) Estimating the value added of a behavioural study**

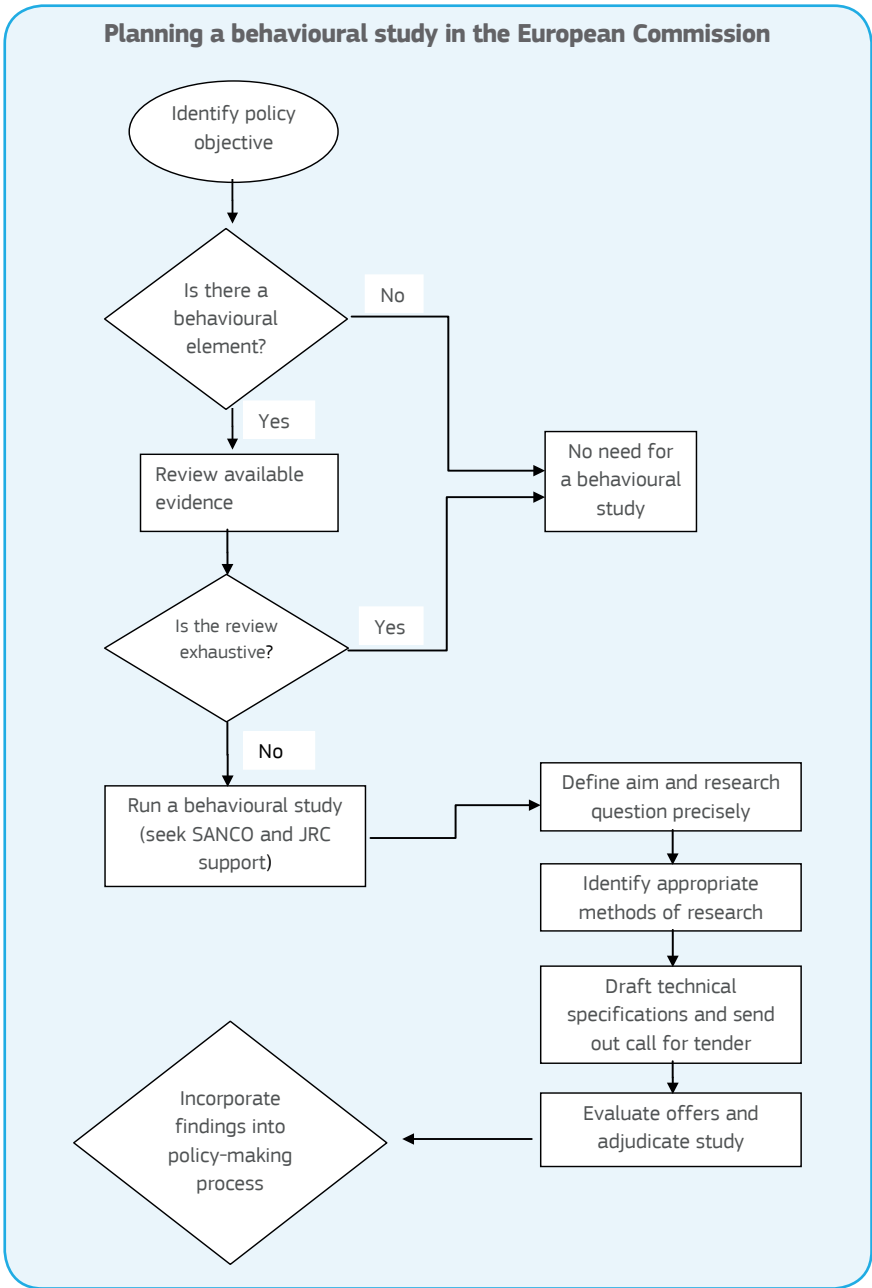
A sound preliminary reflection of the aims of a specific study and its possible results is absolutely essential. Without it, the study could well fail to deliver useful information. Other kinds of studies (e.g. a data-gathering exercise on economic indicators) can generate large amounts of data, which in turn might lead to analyses that were not anticipated. Other types of study can afford 'casting a wide net' in the hope of landing valuable information. Not so with a behavioural study. An internal foresight exercise must be conducted, and a series of questions need to be asked. What do we expect from this study? What if the results are not what we expected? What if we don't get any statistically significant results (i.e. if the various policy options are equivalent in terms of influence on behaviour)?

### **(e) Specifying the unit of analysis**

Usually the unit of analysis for a behavioural study will be the individual (not a firm, not a family, not a group of people). It is the individual who is subject to biases and heuristics in his or her thought processes, the individual who feels emotions, the individual who has a set of preferences, and the individual who is ultimately responsible for his or her actions.

However, there is a demand for behavioural studies to be applied to firms (and other complex bodies), since their behaviour is such a vital component of economic activity. This is a difficult task. Complex bodies, especially large ones, tend to behave 'rationally'. They rely on the expertise of many experienced and trained professionals and often have structured and formalised decision-making processes. Complex bodies cannot be nudged, as a nudge works well when individuals take decisions using their System 1, the fast and spontaneous way of thinking. Complex bodies do not think fast or spontaneously; rather, they slowly and deliberately seek to maximise their utility taking reasoned decisions.

However, small enterprises (particularly micro-enterprises, with fewer than 10 people) are often less structured when it comes to formal decision-making. Sometimes owners of companies – human beings themselves – will make decisions on behalf of the company, without the benefit of a support structure, in the same way they make decisions about their lives. Also, small groups of people organised





around a common task or objective, such as research teams applying for funding, will sometimes respond to incentives in a similar way to individuals. Therefore, while not common, there is scope for applying behavioural insights to small groups of people, especially if they lack formalised decision-making mechanisms.

#### **(f) Considering time constraints**

Behavioural studies, like most studies, require time to be conducted properly. The exact problem to be investigated needs to be narrowly defined and translated into a research design. If the study is based on an experiment, the proper experimental treatments and controls, the appropriate size of subject pool, and the right level and form of incentives all need to be established. Moreover, after the collection of data, time is needed to analyse and interpret the results.

The simplest version of a project of this kind, with some lab experiments or on-line surveys, needs at least 6 months. If a randomised control trial (RCT) is considered, the project can run for a year or more. In the context of the usual time horizon of the policy-making cycle, this would present a challenge. Hence, studies of this kind must be considered early in the game, if they are to be a realistic option.

### III. Commissioning a behavioural study

Imagine a Directorate-General (DG) of the European Commission is convinced of the value of a behavioural approach and decides to commission a study to gather evidence in support of a policy initiative. While the study itself will be conducted by a contractor, the DG in charge will need to address some specific questions before issuing a call for tender.

The main issue to be cleared regards the type of study to be carried out. The aim of a behavioural study is to gain a better understanding of how people act (or perhaps think and feel too). Following this definition, a number of different types of study are possible.

#### **(a) Experiments**

Well-conceived experimental studies provide consistently reliable results that are replicable in different places and different times. In an experiment, the researcher will manipulate one element, something resembling a policy intervention, while measuring people's specific behaviour or reaction. The aim is to draw conclusions on the effect of the manipulated element on participants' actual behaviour. For example (as mentioned earlier), people can be shown different types of warnings on tobacco packages to see which one provokes the strongest reaction.

A good experimental design will include monetary incentives – actual money that people get to keep after the experiment – whenever appropriate. This is not done for the purpose of recruiting subjects, but rather to ensure that the decisions made

in the experiment are as realistic as possible. Without such monetary incentives, subjects might participate carelessly, without paying too much attention to what they do (i.e. there is no incentive to put genuine effort into the task).

An experiment is systematic and rigorous, as it allows for an almost clinical control of all the relevant elements. Moreover, by manipulating these elements and measuring their impact on behaviour, the investigator is able to identify cause-and-effect relationships (and not simply correlations, which is a common limitation with surveys).

In a laboratory experiment, the researcher can draw statistically significant results from relatively small samples. This is a particularly attractive feature for policy, as it saves time and money. However, whether a single experiment can be representative of the 28 EU Member States remains an open question at this stage. Some results (e.g. loss aversion) might apply equally to all Member States, while others (e.g. social norms on collaboration) might differ according to different cultures.

An additional benefit of experimental methodology is that results can be applied to a broader range of policy issues. For instance, while a survey can only give an answer on which images are the most effective deterrents to include on cigarette packets, experimentalists in a laboratory can possibly reveal the corresponding emotion, feeling or reasoning (such as fear or disgust) behind this effective image. This result could then be applicable in other settings, different to smoking.

Experiments have been challenged because of concerns about their internal and external validity, as well as the implicit trade-off between these two.<sup>10</sup> However, the already expanded experimental literature, together with cautious experimental design, can minimise any loss of internal validity. At the same time, consistent results, replicated in different situations and settings, help establish experiments' external validity.

### **(b) Randomised controlled trials (RCTs)**

Ideally, people's behaviour should be observed in their natural environment without any interference from observers. This is the purest and most accurate observation of behaviour, unlike experiments which take place in a laboratory. Following this rationale, and taking inspiration from the drug industry, where the effects of new drugs are tested with large numbers of patients, RCTs have been established as a methodological option in applied behavioural science.

In its simplest form, a RCT divides a target population in two groups: the control group and the treatment group. The control group receives the equivalent of a placebo (i.e. nothing is changed substantially), while the treatment group faces something new. In the UK tax letter example, mentioned earlier, the control group received the same letter as always. The treatment group, however, received a

<sup>10</sup> An experiment is said to have internal validity when the outcome of the experiment is not due to external factors that were not measured in the experiment. It is said to have external validity when its outcome can be generalised to a real-world setting, outside the laboratory.

### Setting up treatment groups in experiments

In a behavioural experiment, the main results will come from measuring and comparing the behaviour of different treatment groups (and a control group). Knowing some aspects of how these groups are set up, therefore, is useful when commissioning a behavioural study.

An experiment can either

- compare the behaviour of two sets of people, one of which was exposed to the variable, the other not ('between-subjects' design) or
- measure the behaviour of the same group of people at two points in time, before being exposed to the variable and after ('within-subjects' design).

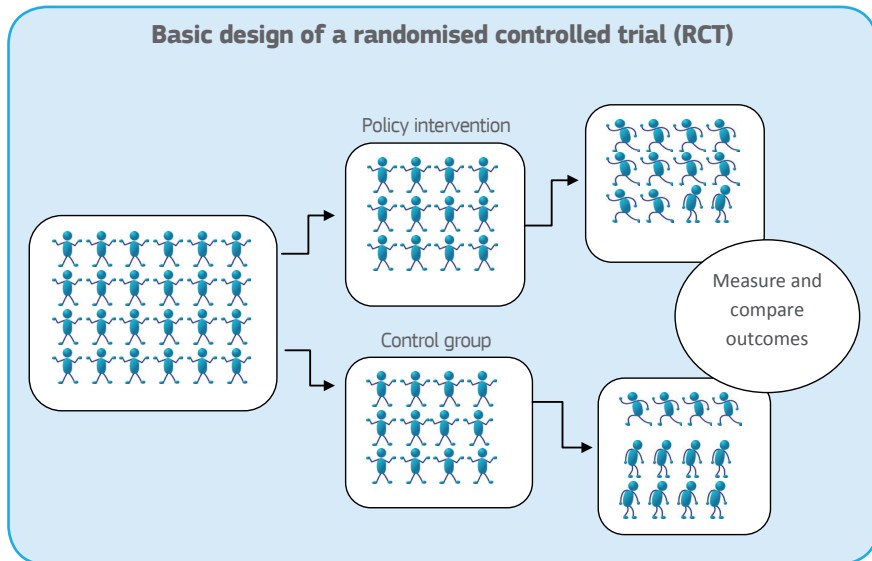
In both cases, the observed behaviour after being exposed to the relevant variable is a key aspect to measure. Subjects cannot be exposed twice to such variables, as this would lead to habituation and learning, and would bias the results .

Regarding the size of treatment groups: the larger, the better. A larger size will make it more likely to identify differences between groups when these exist (i.e. greater statistical power) and less likely to detect differences when these do not actually exist (i.e. greater confidence intervals). It will also allow for detecting smaller differences between groups (i.e. smaller effect size). However, as sample size is directly proportional to invested money, a balance needs to be struck. Considering these elements, the adequate sample size can be computed according to mathematical formulas.

Another consideration is the number of treatment groups to be included. Every time an additional element (condition or variable) is included in a behavioural experiment, a new treatment group must be created to test its effect. This can quickly lead to an exponential growth in the number of treatment groups.

Take the example of product labelling and consumers' purchasing behaviour. Say one of the variables expected to have an impact is the size of the label: whether it is big or small. Testing the effect of label size would require two treatment groups, one for each size (plus one control group). Testing, in addition, the effect of two colours (say red or blue), would require 4 treatment groups (big-red, big-blue, small-red, small-blue), plus one control group (no colour or size alteration). Add another variable (e.g. large vs. small font) and the number of treatment groups rises exponentially to 8 plus a control group. By making comparisons between the behaviour in each treatment group with the behaviour in the control group, a behavioural study can draw conclusions about the effect of size, colour and font size on consumers' behaviour.

letter with a different wording. Both groups were followed to see who paid their taxes earlier. The differences in repayment rates can be credited to the different wording of the letter in the treatment group.



The use of this methodology for EU policy support, however, needs to consider a few issues. For one, given the complexity of social systems, the result of a RCT is valid for a specific point in time, location and target group. A policy initiative that proved valid in a RCT in Baden-Württemberg might completely fail in Andalucía. Even minor differences in social norms could lead to completely different outcomes somewhere else. Therefore, a RCT would have to be conducted at EU level, which can be very costly in terms of preparation, data collection and data processing.

Moreover, as with other experimental designs, RCTs are susceptible to the usual false positive (showing a causal relationship where there is none) and false negative (failing to show one, where in fact one exists) results. To ensure that the results of a RCT are valid, therefore, it would need to be repeated, preferably twice, which would further increase the cost. In sum, while they provide robust evidence for policy-making, proper RCTs at EU level can be expensive and time-consuming.

### (c) Surveys

An extensively-used method of research for policy support is the survey: questioning a large sample of people about their attitudes, beliefs, expectations, etc. One of the reasons for its popularity is its external validity (i.e. it effectively captures how

people ‘out there’ think), since it will often have a sample that is representative of the larger population.

However, the way a questionnaire is designed will limit the richness of the information collected. In surveys, respondents express their ideas, thoughts and feelings through a set of pre-established questions. There is also no guarantee that respondents will be open, honest, and unaffected by the conditions of the survey itself (e.g. the particular effect of being approached for a survey, self-censoring in responses, providing socially acceptable answers). Moreover, the survey is not the ideal way of gathering data about behaviour, as it collects self-reported behaviour, amounting to respondents’ own account of what their behaviour has been or will be, rather than their actual behaviour.

#### **(d) Qualitative research**

A number of research methods that are widely used in the ‘softer’ behavioural sciences (such as social psychology and anthropology), but which are less common in policy support, fall under the umbrella term of qualitative research. These include, but are not limited to, focus groups, semi-structured interviews and participant observation.

Their main advantage is that they allow for richer, more nuanced data on how people think, act and feel. Participants are not constrained by a set of pre-established questions (as in a survey) nor are they observed in an artificial setting (as in laboratory experiments). Rather, they are given ample room to demonstrate their behaviour or express their thoughts. In participant observation, for example (the method of choice in anthropology), participants are simply observed in their natural setting, going about their daily lives, with practically no intervention from the investigator.

The problem with such qualitative methods is that their external validity is often questioned. There is no guarantee that what is learned from observing a limited number of people will apply to the rest of the population. And this is particularly delicate in policy-making, as results can often be contested on these grounds.

However, this should not lessen their value. This is especially true if the aim is to observe and describe behaviours or thoughts that are shared among a population.

One need not observe how a representative sample of the population justifies their decision to smoke, for example, to hear most the arguments that exist (‘you have to die of something’ or ‘I only smoke very little’, etc.). A representative sample would only be required if the aim was to establish the prevalence of these arguments among a population of smokers.

Because they do not necessarily require a large sample, qualitative studies also have the advantage of being potentially very cost-effective. They are also appropriate for some specific cases, such as testing the user-friendliness of an

eGovernment website interface (software or automobile companies, for example, do not rely on representative samples for testing their products). And, finally, they are very useful for gaining insights ‘from the bottom-up’, untainted by presuppositions and prejudice, which can later be tested by other methods with greater external validity.

In the end, the decision on which type of behavioural study to be commissioned will depend on the issue to be studied and the available time horizon. If, for example, information is needed about European citizens’ attitudes on a particular issue, a survey or qualitative research might be appropriate. Behavioural experiments or

<b>Type of study</b>	<b>Pros</b>	<b>Cons</b>	<b>Minimum time horizon needed</b>
Experiments	Can establish causality (not only correlation) Can provide statistically significant results from a relatively small sample size Core findings can apply to other contexts	Representativeness for EU-28 not feasible A laboratory is an unrealistic and artificial environment	6 months
Randomised control trials (RCTs)	Can establish causality, not only correlation Allow for observations in natural settings	Very expensive to run at EU level (and to replicate in order to validate results) Results from one location not generalizable to others	12 months
Surveys	Representativeness for EU-28 is feasible Relatively cost-effective	Respondents are limited by pre-established options to questions Respondents might not be truthful Only gather data on self-reported behaviour Cannot establish causality, only correlation	4 months
Qualitative research methods	Provide richer, more nuanced data about behaviour Often take place in realistic settings Participants are given freedom to express themselves, with limited intervention by researcher	Data collected is generally not representative of the larger population Usually have small samples due to the time and cost involved	4 months

RCTs, on the other hand, can be used when there is a need to directly observe behavioural reactions to a policy intervention.

The timing also needs to be considered. Sound empirical investigation requires a proper preparatory phase, a design period, pilot testing, revisions to the original design, etc. If the aim is to better understand how European citizens would react to new policy, and the time horizon is greater than 18 months, a RCT is possible. If the time horizon is less than 9 months, then a laboratory experiment will probably be the best option. It will not provide a perfect picture of reality, but it will shed light on the fundamental elements of citizens' reaction.

There remain a number of issues to consider in the process of commissioning a study, but most of these are common to any study in support of policy. Perhaps the one issue which is specifically relevant to behavioural studies is the degree to which findings of a non-representative sample can be generalised to the entire population.

On this matter it is worth noting that:

- If the purpose of the study is to identify and describe behaviour, without establishing their prevalence in the general population, a representative sample is not required.
- Evidence collected from a sample which is representative of only a segment of the population will be sufficient if the policy is aimed at that particular segment (e.g. teenage pregnant women) or if success in that segment will automatically imply success elsewhere (e.g. vulnerable consumers).
- The findings of a study whose sample is not representative of the general population can be generalised if the study can be replicated, with similar findings, in different contexts.

Caveats such as these must be kept in mind when analysing results and preparing policy recommendations from behavioural studies. In the end, a behavioural study will not offer a silver bullet to solve policy issues. But it can provide robust evidence on how people behave – and this evidence should contribute towards more effective policies.

## Recommended reading

### Books

- *Advances in Behavioral Economics* (2004) by Colin Camerer, George Loewenstein and Matthew Rabin (eds.). Collection of articles which have shaped behavioural economics as a discipline.
- *The Behavioral Foundations of Public Policy* (2012) by Eldar Shafir (ed.). Collection of interdisciplinary essays challenging the hegemony of cost-benefit analysis as a policy analysis tool.
- *The Black Swan* (2007) by Nassim N. Taleb. Book on the notion of 'narrative fallacy': people's limited ability to look at sequences of facts without weaving an explanation into them.
- *Influence: The psychology of persuasion* (2006) by Robert B. Cialdini. Classic book on the psychology of why people say 'yes' (and how to apply this understanding).
- *Nudge: Improving decisions about health, wealth and happiness* (2008) by Richard H. Thaler and Cass R. Sunstein. Seminal introduction to the use of nudges in policy-making.
- *Thinking, Fast and Slow* (2011) by Daniel Kahneman. Authoritative review of how people actually make choices, summarising a lifetime of Nobel prize-winning research.

### Policy reports (all available on-line)

- *Applying Behavioural Insight to Health* (2010) by the UK Cabinet Office Behavioural Insights Team. Presents possible policy interventions on public health inspired by behavioural insights.
- *Applying Behavioural Insights to Reduce Fraud, Error and Debt* (2012) by the UK Cabinet Office Behavioural Insights Team. Builds on the UK tax letter example mentioned in this report.
- *Behaviour Change and Energy Use* (2011) by the UK Cabinet Office Behavioural Insights Team. Examines a series of policy tests which have been conducted in the field of energy savings.
- *Better Choices: Better Deals* (2011) by the UK Cabinet Office Behavioural Insights Team. Explains how consumers can be empowered through better deals.
- *"Green Nudges": New incentives for ecological behaviour* (2011) by Centre d'Analyse Stratégique. Introduces efforts to encourage ecological behaviour with innovative tools inspired by behavioural economics.



- *MindSpace: Influencing behaviour through public policy* (2010) Institute for Government. Provides a summary of factors affecting human behaviour and explains how this knowledge can be applied to policy-making.
- *Test, Learn, Adapt: Developing public policy with randomised controlled trials* (2012) by the UK Cabinet Office Behavioural Insights Team. Explains how to design randomised controlled trials for testing policy options.

## Articles in the press

- 'Successful public service design must focus on human behaviour', *The Guardian*, 17 January 2013. Provides an account of the successes of the UK Cabinet Office Behavioural Insights Team.
- 'We can make you behave', *The Guardian*, 28 January 2010. Expresses the willingness by the UK government to implement policies inspired by behavioural insights.
- 'Economics behaving badly', *New York Times*, 14 July 2010. Argues that behavioural economics is being asked to solve problems it was not meant to address.
- 'Nudge nudge, think think', *The Economist*, 24 March 2012. Describes achievements in UK, France and Denmark in applying behavioural insights.
- 'The nanny state's biggest test', *The Economist*, 15 December 2012. Illustrates and comments on policy attempts to reduce obesity, with special attention to options based on behavioural insights.
- 'Beware stubby glasses', *New York Times*, 10 January 2013. Highlights some psychological insights with good potential to shape policy-making.





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