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Behavioural economics:

seven principles for policy-makers

Theoretical new economics | 1

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Theoretical new economics

This Briefing forms part of **nef**'s wider programme of work on Theoretical New Economics, which looks at how non-mainstream economic approaches are of relevance to policy-makers. For more information on the programme look at www.neweconomics.org or contact Emma Dawnay (Senior Researcher) at emma.dawnay@neweconomics.org.

economics
real wealth
means well-being

environment
lifestyles must
become sustainable

society
communities need
power and influence

nef (the new economics foundation) is a registered charity founded in 1986 by the leaders of The Other Economic Summit (TOES), which forced issues such as international debt onto the agenda of the G7/G8 summit meetings. We have taken a lead in helping establish new coalitions and organisations, such as the Jubilee 2000 debt campaign; the Ethical Trading Initiative; the UK Social Investment Forum; and new ways to measure social and environmental well-being.

This is the first in a series of briefings from the theoretical new economics programme at **nef**. The aim of these is to summarise the latest academic work in the different branches of more 'alternative' economics into a form that is useful primarily for policy-makers. This Briefing summarises the behavioural economics approach and contrasts it with neoclassical economics where the assumption is made that humans are rational and maximise their individual self-interest.

Contents

Summary

The aim of this Briefing is primarily to be an aid to policy-makers who use economic tools, by providing a summary of the latest thinking from behavioural economics. It should also be helpful to the broader policy-making community by providing a theoretical underpinning for many policy approaches that have, up to now, been used intuitively.

The standard (neoclassical) economic analysis assumes that humans are rational and behave in a way to maximise their individual self-interest. Whilst this 'rational man' assumption yields a powerful tool for analysis, it has many shortfalls that can lead to unrealistic economic analysis and policy-making. This Briefing distils many concepts from behavioural economics and psychology down to seven key principles, which highlight the main shortfalls in the neoclassical model of human behaviour.

The seven principles:

1 **Other people's behaviour matters:** people do many things by observing others and copying; people are encouraged to continue to do things when they feel other people approve of their behaviour.

2 **Habits are important:** people do many things without consciously thinking about them. These habits are hard to change – even though people might want to change their behaviour, it is not easy for them.

3 **People are motivated to 'do the right thing':** there are cases where money is de-motivating as it undermines people's intrinsic motivation, for example, you would quickly stop inviting friends to dinner if they insisted on paying you.

4 **People's self-expectations influence how they behave:** they want their actions to be in line with their values and their commitments.

5 **People are loss-averse** and hang on to what they consider 'theirs'.

6 **People are bad at computation** when making decisions: they put undue weight on recent events and too little on far-off ones; they cannot calculate probabilities well and worry too much about unlikely events; and they are strongly influenced by how the problem/information is presented to them.

7 **People need to feel involved and effective to make a change:** just giving people the incentives and information is not necessarily enough.

In the following pages these principles are described in more detail, the theory is contrasted with that of neoclassical economics, further illustrative examples are given and finally the implications of these principles for policy-making are discussed. Our aim is to change the analytical framework for policy as well as to maximise the impact of policy interventions. We also hope to reduce unintended outcomes arising from making decisions based solely on a neoclassical economic analysis.

Behavioural economics:
seven principles for policy-makers

Principle 1: Other people's behaviour matters

Much of our behaviour is strongly influenced by other people's behaviour. Examples include the clothes we wear or whether we haggle when shopping. Social learning is a process by which we subconsciously take in the behaviour of others to learn how to behave. In more complex situations with which we are unfamiliar, we consciously watch and learn from the behaviour of others – known as 'social proof' – for example, when using a new library for the first time. When we must make a conscious decision on how to behave, our sense of social identity is important – we think: how would other people from 'my group' behave in this situation? In situations where there is high social capital (i.e. where there are strong networks between people and a high level of mutual trust), other people's behaviour and our sense of social identity may be extremely important in influencing our own behaviour. We are particularly open to influence from people in authority or from people whom we respect or like. The influence of people's behaviour on social norms – which themselves influence yet more people's behaviour – gives rise to an ever-evolving system of shifting social norms. Illustrations of the importance of other people's behaviour abound, including fashion, the films we watch, stock market prices and the pursuit of status, which is always socially defined and changes through time.[1]

What neoclassical economic theory would say

The standard economic theory is known as neoclassical economics. Neoclassical economics stops short of trying to explain where people's preferences come from, so it does not take account of the direct influence of other people's behaviour and social norms on our behaviour. The theory assumes we independently know what we want and that our preferences are fixed. This standard theory is very good at explaining short-term decision-making (I want green vegetables and choose beans as they are on special offer) but cannot explain longer-term changes in preferences (I now only choose organic food). Along the same lines the importance of institutions – both formal institutions such as regulations, and informal ones, for example, how people organise markets – and the evolution of the whole economic system are not subjects of neoclassical analysis. This has significant implications for policy design.[2]

What behavioural economic theory would say

The standard neoclassical model also assumes that people carry out a full rational analysis of all their available options. This is not what we do; we often just copy the actions of other people. For example it would require too much effort to look up all the rules when driving in a new country, to find out all the fines/punishments for failing to meet the rules, to work out the probability of being caught and the possible costs, before deciding how to drive there. Instead we just copy other people, and perhaps adjust our behaviour according to the feedback we receive (if someone hoots when I pull out of a junction, next time I might give way at a similar junction).

In contrast to neoclassical economics, many models from psychology attempt to show how social norms influence us. For a useful survey of these, see Tim Jackson's report *Motivating Sustainable Behaviour*.[3] Related theories from the psychology literature include:

- Social learning: Psychologist Albert Bandura showed that people learn by observing what others do.[4] His first experiment showed that kindergarten children were likely to violently attack a 'bobo' doll after having been shown a film of someone attacking a bobo doll. Experiments have been repeated with adults in a wide variety of settings with similar results.

- Social proof: Social psychologist Cialdini has shown that we look to others to see how to behave, especially in ambiguous situations, in crises, and when others are experts.[5] He had some accomplices stare upwards on a street pavement as if looking at something – other people quickly joined in and a large group stayed long after the accomplices had left. Another example of how we look to other people to know how

to behave comes from an experiment where people who didn't know each other were sitting in a waiting room where it was arranged that smoke would pour in through a vent. It was found that the more people sitting in the room, the less likely anyone was to raise the alarm – the people all just looked at each other to try to work out what to do.[6]

- Social identity theory: Psychologists Tajfel, Billig and Turner have shown that part of our social identity comes from those groups with whom we associate.[7] We show a strong bias in favour of 'in-group' members, even when groups are arbitrarily formed. Tajfel demonstrated this in an experiment where he assigned people randomly into groups but, although everyone had seen the assignment was random, they soon showed a preference for members of their group over other people, even giving rational arguments about how unpleasant and immoral the 'out-group' people were.

- Key influencers: Psychologists have identified that we are open to influence from people in authority or people we like. When we are influenced by authority (an expert, someone with legitimate power to direct our actions, someone who can either reward or punish us) the effects are less likely to be lasting than when we are influenced by someone we like.[8] However, care should be taken when using persuasion: knowing that someone is trying to persuade us generally makes us take the opposing view. A famous example of the influence of authority is an experiment by Milgram.[9] A doctor told participants to increase the level of electric shocks apparently being applied to a patient – who screamed louder and louder and showed more and more signs of distress as the level of shock was increased. The participants, however, went on increasing the level as directed by the doctor.

Although they have no independent theories of human behaviour, the 'new' disciplines of system dynamics and agent-based modelling in economics (these are outside the realms of neoclassical economics) can incorporate behavioural traits, and, in particular, dynamic 'feedback' from other people's behaviour into social norms. In systems with feedback – where the output (the typical way people behave in a particular instance) affects the input (how people choose to behave) – there is no single stable equilibrium (as in neoclassical economics), but temporary equilibria occur which depend on the history of the system. For examples of such modelling see Paul Omerod's book *Butterfly Economics*.[11]

Box 1: Why do you wear a seatbelt in your car?

Most of us wear seatbelts as it has become normal behaviour – everyone does it. We neither evaluate the likelihood of having an accident, nor the chance of getting caught without our seatbelt on and incurring a fine. The enforcement of seatbelt wearing is now hardly necessary, as it has become a social norm.

When the compulsory wearing of seatbelts in cars was introduced in the 1970s, there was widespread public resistance. By 2002, when a survey was carried out to assess public support for state intervention, about 94 per cent of the people asked supported compulsory wearing of seatbelts.[10] This shows that policy can affect behaviour and create a new social norm that needs little enforcement to maintain.

What does this mean for policy-makers?

Policy-makers focusing only on neoclassical economic analysis may often devise a system that has an immediate effect; however, this may not last. For example, knowing that there is a fine for speeding and a high likelihood of getting caught I will probably drive more slowly – but I will drive just as fast once I realise the chance of being caught is low. However, if policy-makers can change the social norm – perhaps in this case by encouraging us to frown on others who drive dangerously fast with campaigns against dangerous driving – then less enforcement will be needed after the change. In other words policy-makers might want to take preferences as fixed in the short term, but, as part of a sustainable intervention, they should consider shifting preferences in the medium term. An example where policy appears to have successfully changed people's preferences in the US is banning smoking in public places. This change appears to reduce the 'social proof' (which in some way reinforces smoking behaviour as pro-social) thereby reducing the amount people smoke in private.[12]

Once policy-makers have identified the particular behaviour they are trying to change, they can evaluate the role that social norms play in influencing this behaviour. If other people's behaviour plays an important role, this can be leveraged. Malcolm Gladwell describes how small numbers of key people can have a big impact in his book *The Tipping Point*.[13] He divides such people into three groups: the Mavens, the Connectors, and the Salesmen. The Mavens are people who have such expert knowledge that you would take their advice if given it (and Mavens enjoy giving it for free). The Connectors have many connections, so information they have has the potential to be distributed to a large number of people. The Salesmen are people with the power to persuade us to change our behaviour. Policy-makers may find it useful to focus their efforts to create behaviour change on these specific types of people who will help promote wider change.

Principle 2: Habits are important

When we do something out of habit, we use little or no cognitive effort. Most of us do not spend a long time each morning deliberating on what to eat for breakfast or how to travel to work: such daily routines quickly become ingrained habits. Even when we consciously think about what we do, it can be difficult to change our behaviour. Perhaps I think it is a good idea for people to use public transport, but I don't know where the bus stop is or when the bus runs. I think I should find out, but I don't know how, so I continue using my car. The rewarding feeling – my journey by car was easy and hassle free – reinforces my old bad habit.

What neoclassical economic theory would say

In neoclassical economics the assumption is made that, given their particular preferences, people act rationally to maximise their *utility* (utility broadly means happiness or satisfaction). Doing something out of habit, for example, choosing my normal coffee in the usual-sized jar when shopping, is outside of neoclassical theory, in which I would do a full analysis of all the available coffee/jar-size/price options.

What behavioural economic theory would say

As in the case of social norms, psychologists have long accepted that the frequency of our past behaviour influences our current behaviour (again see Tim Jackson's report *Motivating Sustainable Behaviour*[14]). Just as neoclassical theory does not recognise the existence of habits, it does not acknowledge the effort we need to expend in overcoming them. Psychologists, on the other hand, have done lots of work in this area. They have found a habit is more difficult to change:

- If it is repeated often (it is more difficult to change something I do daily than something I do annually).
- If there are strong related *rewards* (the reward from smoking a cigarette is a satisfying feeling).
- If the reward comes very soon after the action (the cigarette is immediately satisfying).

Psychologists' theories on changing habits generally involve first *unfreezing* the subconscious action and raising it to a conscious level where we can consider the merits of alternative behaviours. This is followed by adopting the new behaviour, which, with time, becomes *frozen* as a new habit. We are more likely to think consciously about something (and thus be able to break our habit) when:

- What we are trying to do is complex.
- The consequences of our decisions/actions are important to us.
- We have enough time, cognitive capacity and knowledge to do so.

Sometimes visual cues can help remind us to change our behaviour. For example, actions such as recycling rather than just throwing everything in the rubbish can become habits. However, when we are used to just throwing things away, it takes a lot of mental effort to think about whether the empty jar in our hand is recyclable or not, and what to do with it if it is. In this case cues, such as visible recycling facilities, or being provided with coloured bins, can help remind us to recycle, as well as making it easier to recycle.[15]

What does this mean for policy-makers?

When aiming to change people's behaviour, the role habits play should be considered. Are there any habits that are likely to be barriers to behaviour change, and if so, how strong are they likely to be? How can any such habitual behaviour be raised to people's conscious awareness? What incentives, financial and non financial, can people be given to help them change their behaviour, and what feedback can be given to help reinforce the new behaviour and cement it as a new habit? Can this feedback be tailored to occur close in time to the action to maximise this learning effect?

For example, a habit-changing policy with extremely successful results has been the introduction of a small charge (15p) for plastic shopping bags in Ireland. Since the introduction almost everyone brings their own shopping bags when grocery shopping. Although most people could easily save a little money on their shopping basket by carefully choosing which brands and quantities to buy, most people don't bother (due to habit). However, when they must *explicitly* pay 15p extra for a plastic bag, this acts as a strong incentive (cue) to bring their own bags.

Box 2: When did you last change your electricity supplier?

Many of us could reduce our electricity bills by changing supplier; however, we simply have not bothered to do it. Why?

The deregulation of the utilities companies and the increase in choice of supplier was meant to reduce prices through competition. This policy has not been as successful as expected as people have been reluctant to change supplier. It appears that habit is key to people's behaviour here, and the barriers to changing these habits are higher than expected: there is the hassle associated with changing (identifying which new supplier, filling out forms, and so on) and there is a perceived risk – perhaps the new supplier will not be so reliable. Conversely, the financial gain, which was expected to dominate, is not immediate but comes as a small decrease in future bills.

Principle 3: People are motivated to "do the right thing"

There are many cases where we do things for other people for which we would be insulted if they paid us; for example, when we invite friends for a meal. In such cases it is clear that a financial reward would be thoroughly de-motivating to continuing the behaviour. Even in less extreme cases, such as doing volunteer work, money can be de-motivating as it detracts from the warm feeling of having done something good.

In cases where we are naturally motivated to 'do the right thing' we feel bad and have a guilty conscience when we fail. This guilt can be offset if we receive a punishment (e.g. a fine) because after being punished we feel we have paid for our misdeed and we have a clean conscience. This can result in punishments having counter-productive effects: we continue with our bad behaviour together with accepting the punishment.

People also have an inbuilt sense of fairness. In situations where one person clearly has a stronger bargaining position, very often they will not use this and will split the gain from the transaction 50/50 rather than demanding more for themselves. Our sense of fairness also drives us to punish the wrongdoing of others, even at a personal cost to ourselves.

What neoclassical economic theory would say

A standard neoclassical analysis would add up the financial costs and benefits, so financial rewards would always be expected to encourage and financial fines would always be expected to discourage. People would also be expected to take advantage of any bargaining position that they had. Further, the fact that people are willing to punish the wrongdoing of others at considerable cost to themselves, without any obvious benefit cannot be explained by neoclassical analysis. In short: altruism in any form is difficult to explain.

What behavioural economic theory would say

Social scientists accept we have intrinsic motivations where we do activities for their own inherent reward, as well as extrinsic motivations where we do things for some external (possibly financial) reason. They find, however, that it is possible for extrinsic motivations to 'crowd-out' intrinsic motivations and thus be counter-productive.[18] That means that financial rewards, deadlines, and the threat of punishment can decrease intrinsic motivation and thus can be counter-productive as motivational tools. An example of this is when small fines were introduced for parents who arrived late to collect their children from a nursery school in Israel. The result was that the parents arrived late *more often* than before the fines where introduced.[19] It appears that by making a payment the parents no longer felt guilty about arriving late, and treated the situation as if they were paying for a service.

Experimental economists have found that 'fairness' is often important, which is not a concept that is expected to have any significance for the rational man modelled in neoclassical economics. For example, people's willingness to pay for a public good has also been shown to be moderated by fairness – people believe that costs should be fairly distributed between those responsible for the necessity of the public good, and those who will benefit from it. With higher perceived fairness, people are willing to contribute more.[20]

Box 3a: Would a monetary payment make you more likely to give blood?

In the 1960s the demand for blood in hospitals was growing rapidly. To investigate how best to meet this demand, the Institute of Economics Affairs commissioned an investigation resulting in a report entitled The Price of Blood *by Cooper and Culyer.*[16] *The authors, applying 'the simplest tools of economics analysis' conclude:*

- *Human blood is an economic good.*
- *Paying donors for blood would increase supply.*
- *Supplies would be provided at a cost advantage in the future, if demand continued to rise.*

In his classic work The Gift Relationship *published in 1970, Richard Titmuss presents strong evidence to the contrary.*[17] *At that time, blood donors where unpaid in England and Wales, but they were paid in various different ways in the US. Titmuss compares the statistics and shows that not only did more people give blood voluntarily compared to donations made with financial incentives, but also that the voluntarily donated blood was of a higher quality (it appears that people who give blood for financial reasons have a strong incentive not to be honest about diseases that they may have which would render their blood inadmissible). He concludes "commercialisation of blood and donor relationships represses the expression of altruism" and that:*

- *in terms of economic efficiency, it is highly wasteful of blood;*
- *it is administratively inefficient and results in greater overhead costs;*
- *in terms of price per unit of blood the American (commercialised) system results in prices 5 to 15 times higher than the British (voluntary) system; and*
- *commercial markets are more likely to distribute contaminated blood.*

Following the publication of this book, blood donations remained voluntary in Britain, and the World Health Organisation adopted a resolution in 1975 urging member states to "promote the development of national blood services based on voluntary nonremunerated donation of blood".

Box 3b: Would small payments encourage you to do voluntary work?

When questioned about volunteering, 97 per cent of respondents believed they were fulfilling an important task for society and less than 25 per cent thought that the work should be rewarded financially. This is consistent with ***intrinsic motivation*** *– people feel the task is worth doing for its own sake, rather than for reward – and as such this feeling can be offset by* ***extrinsic motivations****, such as pay, which can reduce the overall incentive. This is corroborated by a study of Swiss volunteers. The average volunteering time was fourteen hours per week but those who were paid did approximately four hours less volunteering work a week than unpaid volunteers.*[21]

What does this mean for policy-makers?

Policy-makers should consider how people perceive the behaviour they are trying to change. If it is normally considered shameful, it might be counter-productive to introduce fines; if it is normally considered the right thing to do, it might be counter-productive to introduce financial rewards. The size of any financial (dis)incentives should also carefully be considered – a big enough fine will be a disincentive, and paying a volunteer a high enough salary may be an incentive. Consideration should also be given to appealing to people's sense of fairness, and conversely care should be taken not to make people feel a policy is unfair, even if it is of overall benefit. Also, the institution itself should be seen to be fair, as this will have an impact on future compliance.

Several examples relevant to policy-makers are given in the paper *Introducing Procedural Utility: Not only What, but also How Matters* by Bruno Frey, Matthias Benz and Alois Stutzer:[22]

- *The treatment of taxpayers*: Taking into account of the probability of being caught evading taxes, and the size of the punishment if caught, a neoclassical analysis indicates that taxpayers should evade taxes more than they actually do. It appears that people are motivated to 'do the right thing' and further, the more fairly and respectfully the tax authorities treat them, the more willing they are to pay their taxes.

- *Public good allocation*: To overcome the problem of NIMBY (not-in-my-back-yard) projects, neoclassical economics has a solution: as the benefits to the wider community are greater than the costs, the prospective gainers should be taxed and this revenue redistributed to the prospective losers. It has turned out, however, that this approach meets with much resistance as people feel they are being bribed to accept the project, thus undermining their motivation to 'do the right thing'. A more successful approach is to directly address people's concerns. For example, if people object to a new airport being built nearby, then they could be helped to insulate their homes against the noise.

- *Law*: A study of the acceptance of awards from court-ordered arbitration found that the litigants who judge the arbitration process as fair are much more likely to accept the award from the arbitration process and not take the case to formal trial, irrespective of the outcome.

Principle 4: People's self-expectations influence how they behave

We have expectations about our own behaviour, and perceptions about the expectations other people have about our behaviour. We don't like to feel our actions are out of synch with these expectations or our own values or attitudes – it makes us feel uncomfortable. If we find ourselves often doing something that sits uncomfortably with our attitudes, values or expectations of ourselves, then we may well change our *attitudes* and *values* to justify our actions. Where we have expressed our beliefs openly, however, we are more likely to change our *behaviour* to remain consistent with these expressed beliefs. In this way, commitments can be very important: when someone has promised to do something, they are likely to stick to this even without rewards or punishments. Who makes the commitment and how it is made can also have a strong influence: when a whole group with high levels of social capital publicly makes a commitment, this is likely to be more influential on the individuals than when an individual makes the commitment by himself/herself. The more public commitments are, the stronger they are, and written commitments are stronger than spoken ones. People who have made a small commitment (for example, signing a petition) appear to change their view of themselves, and if asked a few days later to make a much larger commitment (for example, donating money) are more likely to agree.

What neoclassical economic theory would say

A standard neoclassical analysis would disregard self-expectations and commitments, as these are expected to influence our preferences; but preferences are taken as 'given' in this analysis. Promises are irrelevant in neoclassical theory unless they are backed by sanctions.

What behavioural economic theory would say

The psychologist Leon Festinger developed the *cognitive dissonance theory*, which proposes that people feel uncomfortable when they feel a clash or 'dissonance' between their actions and attitudes or values.[23] Daryl Bem postulated that we infer our attitudes from observing our own behaviour, which means that when our behaviour is out of synch with our attitudes, we may well change our attitudes (rather than our behaviour).[24] Higgins's *self-discrepancy theory* has built on the cognitive dissonance theory.[25] He maintains we have three views of ourselves: actual, ideal and ought-self (how we have a duty to be). We have corresponding perceptions of how we think other people assess these three views of ourselves, thus we have six distinct types of self-concept. Differences between these give rise to different (negative) emotions, such as guilt, shame or disappointment.[26] It would appear that making commitments, especially publicly, strengthens the feeling of how we should behave, and the shame we feel if we fail to live up to them. A useful guide to using commitments in changing behaviour is given by a psychologist, Doug McKenzie-Mohr.[27]

What does this mean for policy-makers?

Policy-makers should consider whether it could be practical to get people to make commitments, and if so, how to make the commitment as strong as possible. The following examples have been taken from Doug McKenzie-Mohr's book *Fostering Sustainable Behaviour*:

- Emphasise written over verbal commitments.
- Ask for public commitments.
- Seek group commitments.
- Actively involve the person.
- Consider cost-effective ways to obtain commitments.
- Use existing points of contact to obtain commitments.
- Help people to view themselves as environmentally concerned.
- Don't use coercion (commitments must be freely volunteered).

For large businesses the threat of externally imposed regulation has, in some cases, precipitated self-imposed voluntary agreements.[28]

Policy-makers could consider whether it would be beneficial to use such tactics more broadly to encourage small businesses (or better still groups of small businesses) to make commitments. Another alternative could be to get business owners to make a written commitment and then to use the threat of naming and shaming those who don't keep the commitment. In particular, consideration should be given to 'stepping' commitments from the very easy to the more demanding, thus changing identity and self-expectations in the process. For example, small businesses may be asked to register for free information on how to improve their environmental impacts. They might then be invited to a meeting, and then asked to commit to certain actions.

For example, a Canadian programme using a combination of public commitments and visible signals was used to establish a strong community composting-norm. Several months after the start of the project an exceptionally high proportion (80 per cent) of the people originally approached were found to be composting.[29]

Box 4: Do commitments change how you behave?

If a stranger asks you to watch over their belongings, and you agree, does this make you more likely to protect their belongings from obvious theft? For most people, the answer seems to be yes. In a staged crime, individuals who had agreed to watch over a bag were four times more likely to attempt to prevent a theft as individuals who were aware the bag was being stolen but who had made no commitment to watch over it.[30]

Suppose someone asks you if you are going to vote in the forthcoming elections. You consider, and decide that it is the right thing to do as a good citizen, so you tell the questioner yes, you will vote. Will this commitment make you more likely to vote? The answer for most people is again yes, it will. When voters in the US were asked the day before an election "Do you expect you will vote or not?" they all agreed and this action appeared to increase the likelihood of them voting by 41 per cent.[31]

Principle 5: People are loss-averse

People naturally have inbuilt biases:

- People are loss-averse, which means they will go out of their way to avoid losses, while at the same they would not bother to go out of their way to gain something. This can mean people may take large risks to avoid losses whilst at the same time avoiding even small risks to make gains.
- People try to keep something that they consider is 'theirs', even when it is quite arbitrarily given and where the beneficiary's pre-established preferences would indicate that they would prefer to swap it. It is as if as soon as I consider something 'mine', I confer some extra value onto it.

Box 5a: You hold some shares in a firm that has gone down in value. What do you do?

Many people hold on to their shares in this situation, in the hope that they will recoup their losses. Conversely, when shares have gone up in value, people are happy to sell them to realise their gain. A similar behaviour is also observed for professional traders who tend to hold on to shares with a loss for longer than those with a gain. The traders who exhibit this type of loss aversion to a lesser degree tend to be the more successful ones.[32]

Box 5b: How much would you need to be paid to mow your neighbour's lawn?

Is this more than how much you would pay your neighbour to mow your lawn? Most people would need to be paid much more to mow someone else's lawn than they would be willing to pay to have their own lawn mowed. This thought experiment is taken from Richard Layard's book Happiness: lessons from a new science.[33]

What neoclassical economic theory would say

In neoclassical theory people are expected to have a preference on risk (i.e. be either risk-takers or risk-avoiders) but it is usually assumed that people are neutral to loss or gain, meaning that the amount of effort I should put into saving £100 of my money should be the same as the amount of effort I would put into getting £100.

It is also usually assumed in neoclassical theory that someone's 'willingness-to-pay' is the same as their 'willingness-to-accept'. This means they would sell something they own for just about the same price as they would be willing to buy it, if they didn't already own it.

What behavioural economic theory would say

Kahneman and Tversky's *Prospect Theory* developed in 1979 shows that people are not impartial to whether a loss or a gain is involved: they put more effort into preventing a loss than winning a gain. They also show that people generally use a relative assessment of losses and gains (rather than considering their total wealth position) and that they value losses more than gains.[34]

The *endowment effect* shows that someone's 'willingness-to-pay' is *not* the same as their 'willingness-to-accept'.[35] In practise, it is usual for the selling price or willingness-to-accept to be up to 20 times the buying price or willingness-to-pay.[36] An example of a study in which people were willing to pay only a little to have something (or in this case maintain it) compared to demanding a lot to give it up concerns duck-

hunters in the US. It was found that they would pay $247 each to maintain a wetland suitable for ducks, but asked for $1044 to give up the wetland.[37]

This discrepancy between willingness-to-pay and willingness-to-accept can lead to an intriguing effect on indifference curves, a key concept in neoclassical economics. Indifference curves plot how much of one good we are willing to give up to get more of another good. An early lesson from neoclassical economics is that they should never intersect. In one experiment, however, students were randomly given either pens or money and from observing the subsequent trade, *intersecting indifference curves* were generated. This was because the group of people who were given ('endowed with') pens wanted more dollars per pen than the group given money were prepared to pay.[38]

What does this mean for policy-makers?

This is a case where the theory is directly applicable within economic cost-benefit-type analyses that include valuations of non-market goods, such as valuations of pollution damage. Policy-makers have a choice as to whether to use willingness-to-pay or willingness-to-accept, and as these may vary by up to a factor of 20, the outcome of such an analysis may well depend on which value is chosen. David Pearce has written a useful paper addressing this issue.[39] He proposes that where people reasonably have a 'right' to something that might be taken away from them, the willingness-to-accept value should be used. On the other hand, when people only reasonably have a 'right' to the status quo and an improvement is proposed, then the willingness-to-pay is the correct value to use. (An alternative approach is not to use a cost-benefit approach, which people can find alienating, but a participatory negotiation process – see Principle 7.)

More generally, when punishments or rewards are being planned, policy-makers should consider the implications of this Principle. A fine is a much stronger disincentive than a similar-sized reward is an incentive. The threat of loss of reputation can also count as a strong incentive not to do something. The risks that people are likely to take to avoid a loss can be large, so punishments designed to curb slightly-bad behaviour could have the adverse effect of encouraging people to do something much worse to avoid being caught. For example, to avoid being caught with an old bottle of a polluting chemical that is now banned, people might well do something drastic (for example, pour it down the drain) rather than admitting to having it.

Loss-aversion has implications for tax collection: taxes taken at source may cause less resentment and therefore be easier to introduce than taxes that must be actively paid.

Principle 6: People are bad at computation

We are naturally very bad at calculating things, especially probabilities, and our choices are strongly influenced by how a problem is presented to us. Our usual internal biases are:

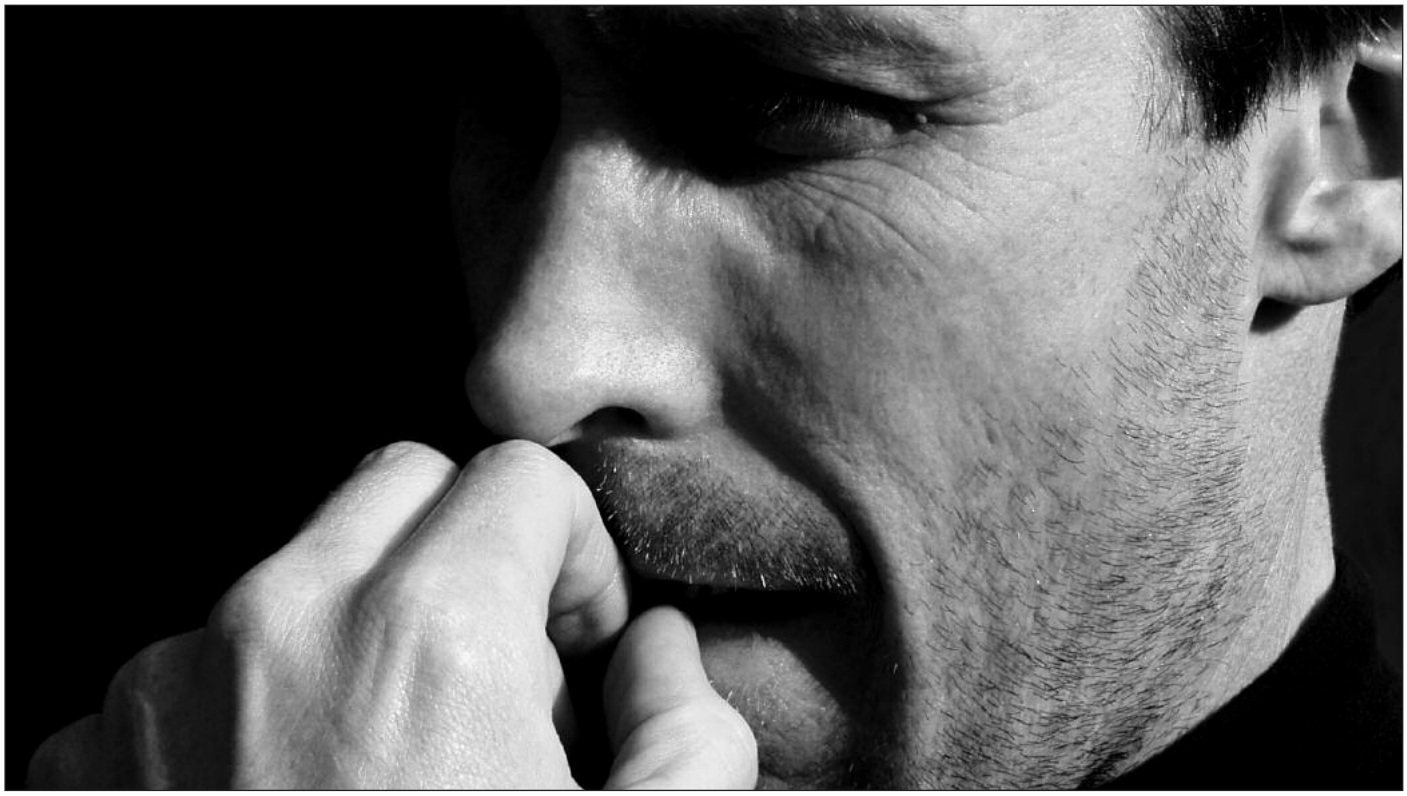
- **Salience:** We overestimate the likelihood: of something that we can easily imagine, especially if it would be particularly frightening, like a plane crash, or particularly exciting, like winning the lottery; of something that has given us a short-lived extreme experience; or of something we have recently experienced. Likewise we underestimate the likelihood of things that happen relatively often.

- **Discounting:** We often underestimate the importance or relevance of something that might happen in the distant future. Our preferences are inconsistent over time: if asked to do either 5 hours of an unpleasant task today compared with 5½ hours tomorrow, we often put off the unpleasant task; if asked, however, whether we would choose 5 hours in a month's time, or 5½ hours in a month and a day's time, we would choose the former. This often manifests itself in people choosing short-term gratification over longer-term rewards, leading to policy issues, such as obesity or lack of savings for old age.[40]

- **Framing:** If we must make a decision between two actions, we are strongly influenced by how the two possible outcomes are presented to us. If one is dressed up as a loss, and the other as neutral or as a gain, then we will avoid the apparent loss – even when the two outcomes are mathematically identical. Framing, although often combined with loss aversion, can be applied together with any of the other six principles. For example, a toothpaste advertisement from a few years ago used the slogan "more dentists choose Colgate". This combines *framing* with the principle that *other people's behaviour matters*.

- **Defaults:** We are strongly influenced by 'defaults' set for us by authorities. For example, when money is transferred into a voluntary pension scheme by default, few people choose to opt out, and the pension contributions are much higher than when people have to opt in.[41] Sunstein and Thaler argue strongly in favour of using this bias when designing policy, which they call *Libertarian Paternalism*.[42]

- **Intuition:** We jump quickly to intuitive answers, which can be wrong, even to very simple mathematical questions. However, where an outcome is particularly important to us, we are more likely to engage our active conscious thinking to evaluate the situation and get the right answer. An example of such a mathematical problem where our intuition is often wrong is given in



Kahneman's paper:[43] "A bat and a ball cost $1.10 in total. The bat costs $1 more than the ball. How much does the ball cost?" Most people answer 10 cents, including 50 per cent of Princeton students. This answer is wrong!

- **Fundamental attribution error:** We like to think we have control over situations, so we often assume that when something happens to someone it must be their fault – rather than it being an unfortunate random event.[44]

- **Price can signal value:** When offered 'something for nothing' we tend to undervalue what we are offered. For example, in Australia, when a course on social entrepreneurship was offered free to a number of government people, no one signed up. When it was re-advertised three months later for AUD$2,500, however, more than 20 people enrolled.

What neoclassical economic theory would say

In standard neoclassical theory the assumption is made that people act rationally and logically. As well as having all the necessary information at their fingertips, they are fully capable of making the complex calculations to compute their optimum best choice from the many possible choices available to them. In other words, the biases above are not expected to be significant.

What behavioural economic theory would say

Psychologists have long established that people do not make decisions in the way assumed by neoclassical economics. In particular, David Kahneman – who went on to win the Nobel Prize in Economics – showed that people use 'rules of thumb' to make decisions, and these give rise to the internal biases listed above.[47] Frederick, Loewenstein and O'Donoghue have published a thorough review of studies on people's preferences regarding time discounting and they conclude that the discounted utility model, which continues to be widely used by economists, has little empirical support. They propose a multiple-motive approach which takes account of the interplay between the disparate and often competing psychological motives.[48]

Box 6a: Would you agree to undergo a medical operation if your doctor told you: *"of those who have this procedure, 10 per cent are dead after five years"?*

*Would it have made a difference if the question had been phrased differently: **"of those who have this procedure, 90 per cent are alive after five years"**? Redelmeier has researched this and he finds that more people (including doctors) agree to undertake the risky procedure when the question is positively framed.[45] This shows that framing makes a difference: the prospect of a 90 per cent chance of living is, for most people, better than a 10 per cent chance of dying.*

Box 6b: What would you expect as financial compensation for lending $15 for periods of one month, one year or ten years?

The median answers are $20 in one month (i.e. $5 interest), $50 in one year, or $100 in ten years.[46] The standard economic theory would predict that if you are happy with $100 after ten years, then you should be happy with $18 after one year or $15.24 after one month.

What does this mean for policy-makers?

Policies that involve financial incentives or disincentives should take account of people's biases and intuition about probabilities, and positively make use of framing effects:

- If punishments are to be used for non-compliance, information published about them should be vividly described to trigger the imagination into thinking 'how horrible' it would be to be to be punished. Conversely, if rewards are to be used to enhance compliance, these should also be very salient.

  The Royal Mail has successfully used salience to encourage employees not to take sick leave by entering all staff who had not taken sick leave for a six-month period into a lottery to win a car or a holiday.[49] This reduced absenteeism in the 170,000-strong workforce from 6.4 per cent to 5.7 per cent meaning approximately 1,000 more people were working every day. The cost of the prizes was about £500,000. A neoclassical analysis would wrongly predict that as the expected value of the lottery ticket is small (about £6) compared to the utility of an extra day's free time when 'taking a sickie' (presumably a day's pay) then not many people would be influenced by the incentive, unless people placed a huge value on the 'fun' of participating in the lottery. The behavioural economics approach is that we are influenced by salience: as with all lottery prizes our imagination is caught by the idea of winning the holiday or the car thus we overestimate the chances of winning.

- Immediate losses are stronger incentives than long-term rewards. Programmes should, if possible, be devised to avoid immediate losses.

  For example, in Barry, Canada, a water conservation scheme that avoids up-front costs has proved very successful. To encourage people to install ultra-low-flow toilets and showerheads, the City offered purchasers an interest-free loan to be paid off as part of the water bill. As the water is metered, the water saving offset the cost of the repayments making the equipment appear effectively free. The added incentive was that water bills would be cheaper in the future.[50]

  An interesting medical example concerns women's behaviour relating to breast self-examination.[51] As detection behaviour can lead to the undesirable knowledge that they have a lump (which can be thought of as a type of loss), the short-term incentive is not to have a test. Of course, taking account of the longer-term outcome and choosing to do detection tests is by far the most rational approach for women who value longevity. Research on messages to promote detection behaviours found that framing the message to emphasise the possible long-term loss (of not doing detection tests) is particularly effective in this case.

- The use of libertarian paternalism devices could be very influential. Default options for individuals could be set to promote the relevant policy, for example, smaller servings of food in restaurants to counteract obesity. Further, in order to help people counteract the natural tendency to overly discount the future, *small barriers,* or what Avner Offer has called "commitment technologies", can be created or should be preserved.[52] (An example of this is that students find it easier to write an essay with an externally imposed deadline.) This might suggest, for example, that people should not be allowed to raid their pension funds easily for present-day expenditure.

Principle 7: People need to feel involved and effective to make a change

People hate feeling helpless and out of control and, when they have such feelings, they feel incapable of doing anything to change the situation. Conversely, when they feel in control, they can be highly motivated to change things for the better. This has implications on information, choice and the importance of participation:

- Information overload: Too much information can lead to a feeling of helplessness and inaction. For example, I care about the planet and climate change, but it is all just so complicated to solve that I don't know where to start, so I will continue behaving as before.

- Too much choice can also have a counter effect. We feel overwhelmed and don't know what to choose, thereby often not making any choice at all. Even when we do choose something, we are often dissatisfied, thinking we have probably made the wrong choice.[53]

- A participatory approach to problem solving can be highly motivational and effective in encouraging behaviour change, as well as making people happier.

What neoclassical economic theory would say

In neoclassical theory, people are expected to rationally make the 'best' choices given their preferences, independent of how these choices are presented. Therefore, more information and choice is always considered good. Using this theory, policy-makers should ensure that people always have as much information and as many things to choose between as possible; the process of introducing policy is irrelevant. Ideas from behavioural economics indicate, however, that this is not the right approach.

What behavioural economic theory would say

We know from experimental economics (see example in Box 7) that more choice and more information can be overwhelming and lead to a feeling of helplessness or reduced self-efficacy. In 1977 Bandura published a theory on how self-efficacy or "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" affects our behaviour.[55] He argues it affects the choices we make, how much effort we put into what we do, how long we persist with a task before giving up, and how we feel. Kaplan, a psychologist, has proposed a participatory approach to problem solving.[56] He suggests that telling people what to do is demotivating (reducing self-efficacy), is likely to encounter resistance, and ignores the possibility that the local knowledge people have may yield better solutions to a problem. Instead, providing people with "opportunities for understanding, exploration and participation" engages "powerful motivations" for "competence, being needed, making a difference, and forging a better life". In summary, people's self-efficacy increases and they are motivated toward implementing the solutions – i.e. changing their behaviour in a desired way.

A participatory approach not only improves policy, it also makes us happier. This is the finding of research comparing Swiss cantons (districts), which differ in the extent to which they use referenda for making major decisions.[57] Most interesting of all, around two-thirds of the well-being effect can be attributed to actual participation itself, and only one-third to the improvement in policy as a result of the participation. This was discovered through looking at the well-being of foreigners resident in Switzerland, who get the well-being benefit from the improved decision-making, but not from the participation itself. This implies that an increased ability to participate may have positive well-being dividends.

Box 7: How does having more to choose from affect your choice?

Have you ever felt so daunted by the amount of different things to choose from, that you ended up not choosing anything at all? If so, you are not alone as the results from the following experiment show. A stall was set up in a supermarket for jam tasting. On one day the stall had twenty-four jams, and on a different day only six jams. Although the stall with more jams attracted more attention (60 per cent of the people passing by stopped, compared with only 40 per cent for the small-selection stall), of the people who stopped only 4 per cent at the stall with the extensive selection subsequently bought a pot, whereas 30 per cent of the people who stopped at the small-selection stall went on to buy a pot.[54]

What does this mean for policy-makers?

Policy-makers should note that, contrary to standard theory, too much information or choice could be counterproductive. They should make sure that the target individuals are not bombarded with information or long manuals of regulations. In particular, policy-makers should be aware that people do not necessarily want more choice. The freeing-up of the market for telephone directory enquiries is an example of counter-effective choice. Since the introduction of over 100 new directory-enquiry numbers to try to promote competition, the use of the service has fallen. This is thought to be due to increased confusion and perception of higher costs, although increased use of Internet services is also thought to play a role. Also, most residential customers are paying more than they did before (although a quarter of the new numbers offer

cheaper services), with no increase in the quality of the service.[58]

Emphasis should be placed on helping people to believe that they have it within their power to change their behaviour in a desired way. This is confirmed by a study on environmentally friendly behaviour. Out of a group who expressed they were interested in environmental issues, the most important factor in whether they actually behaved in an environmentally friendly way was "personal control" which was defined as "the extent to which participants felt their actions could benefit the environment".[59] Another study published by the National Consumer Council on ways to promote sustainable behaviour analyses 19 case studies and finds that in every case "once enlisted, people have been persuaded to make major changes in their lives" and that in the UK:

> *"Consumer-facing policies have largely been limited to traditional information provision and awareness-raising. These policies have not had a transforming effect on mainstream society. Only now is it being recognised that preaching to people is a poor substitute for enlisting them as active partners."*[60]

Where possible government could identify problem areas and encourage groups of people affected by the issue to work together with experts to clarify the problem and find solutions. In particular, government should build on existing groups and initiatives, rather than creating new processes and structures without buy in.

Concluding comments

These seven principles have been distilled from the many observed human traits coming from the fields of psychology, behavioural and experimental economics. They have been chosen as they are thought to be the most relevant to policy-makers.

In most cases these principles cannot be used directly as part of any mathematical economics analysis, but highlight situations where this standard analysis will not accurately describe human behaviour and therefore might have unintended consequences when implemented in policy.

The academic research is well developed to support the theory behind the seven principles. There are, however, research gaps around the reality of the application of the principles. These fit around three related areas:

1. **Consideration of the relevance and materiality of the principle** – Relevance (*is one or more of the principles applicable?*) could be left to the judgement of the policy-maker. Materiality (*does the principle make a significant difference?*), however, requires judgement to be informed by more case studies and research.
2. **Work on the different policy interventions that flow from the principles, and their efficacy** – The sections on policy implications in this Briefing are indicative. The academic research has not focused particularly on the translation of the principles into practice. There is a need for far more systematic work to take place looking at how to best translate the principles into policy, and how to make them most effective. Our research review does suggest, however, that the policy implications could be quite powerful as the behavioural approach provides quite different lines of analysis to the standard economics model.
3. **Understanding of the interplay between the principles** – There is little research on how the principles interact, where they might conflict and how they can be combined to maximum effect. However, many successful interventions combine several of these principles.[61]

It is heartening to see policy-makers focusing more on the psychology of behaviour when devising policy. There are a number of recent indications of more sophisticated consideration of the kinds of approaches put forward in this Briefing. The Prime Minister's Strategy Unit has put together a paper on behaviour change.[62] The Government's new sustainable development strategy *Securing the Future* has one of its seven chapters devoted to "helping people to make better choices".[63] Similarly, the public health white paper launched in 2004 is called *Choosing Health: making healthier choices easier*.[64] Our hope is that this Briefing will enable this kind of approach to be taken up more broadly by policy-makers through the use of the seven principles. We believe that this will lead to better and more cost-effective policy.

Further reading

Tim Jackson's report *Motivating Sustainable Consumption* has an extensive survey of models of consumer behaviour and behaviour change, most of which are applicable to a far wider field than sustainable consumption.[65]

David Halpern's report *Personal Responsibility and Changing Behaviour: the state of knowledge and its implications for public policy* gives theories of behaviour change and examples of where these are being applied to public policy.[66] He argues that: policy outcomes will be much enhanced with the participation of citizens; there are strong moral and political arguments for protecting and enhancing personal responsibility; and behaviour-based interventions

can be significantly more cost effective than traditional service delivery.

Doug McKenzie-Mohr has developed a tool, *Community-Based Social Marketing,* to change people's behaviour towards environmentally friendly behaviour.[67] This is underpinned by psychological theories of human behaviour.

A useful text on bounded rationality is David Kahneman's Nobel Prize lecture *Maps of Bounded Rationality: A Perspective on Intuitive Judgement and Choice.*[68]

Many relevant papers from behavioural economics can be found through Joe Pomykala's website *Behavioural Economics: a crash course.*[69]

The paper, *Libertarian paternalism is not an oxymoron,* by Cass Sunstein and Richard Thaler, references many psychological and behavioural-economic texts to argue that choice should be allowed but the default option should be what the authority thinks is 'best'.[70]

In the paper, *Regulation for Conservatives: Behavioural Economics and the case for "Asymmetric Paternalism"* by Colin Camerer, Samuel Issacharoff, George Loewenstein, Ted O'Donoghue and Matthew Rabin the authors argue that regulations should be 'paternalistic' and take account of behavioural economic ideas (especially Principles 5, 6 and 7 in this Briefing) when the benefits to less-rational people – who may take decisions that are not in their own self interest – are much larger than the costs of such regulation to fully-rational people.[71] Licencing professionals, such as doctors, is an example of this: there are low implementation costs borne by taxpayers and otherwise no extra costs for the people who would have anyway chosen someone competent to give them medical treatment, but there are large benefits for the people who would not.

The paper, *A better choice of choice,* by Roger Levett, Ian Christie, Michael Jacobs and Riki Therivel argues that the choices that consumers make lead to other choices no longer being available.[72] For example, giving people the choice of shopping at an out-of-town superstore as well as having local shops can lead to the local shops shutting down, which then reduces the choice of shops available – an outcome no individual would have chosen.[73] In this case allowing 'freedom of choice' can disadvantage the elderly and people without cars. This effect cannot be modelled with the static approach taken by neoclassical economics, but has significant implications for policy design.

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One of the other things we do

environment
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