

STEER

MASTERING OUR BEHAVIOUR THROUGH
INSTINCT, ENVIRONMENT AND REASON

MATT GRIST
JUNE 2010

RSA Projects

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ACKNOWLEDGEMENTS

The research described in this report was made possible by funding from the Department for Communities and Local Government's Empowerment Fund, for which we are very grateful.

Thanks must go to RSA colleagues Alasdair Jones, Jonathan Rowson, Rebecca Daddow and Rohan Talbot who helped facilitate the research workshops. Thanks also go to Matthew Taylor, Julian Thompson and Steve Broome for their feedback on various drafts of the pamphlet, and to David Rosenberg, Nina Bolognesi and Katy Evans for editing the final draft.

CONTACT US ABOUT THIS REPORT

Matt Grist has led the Social Brain project since its inception in 2008. This report marks the end of the second phase of the project, and upon its completion Matt left the RSA to take up related work in this field.

The Social Brain project continues at the RSA into its next phase under the direction of Dr. Jonathan Rowson, Senior Researcher. All queries relating to this report or project should therefore be directed to him in the first instance at jonathan.rowson@rsa.org.uk

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EXECUTIVE SUMMARY

The RSA's Social Brain project explores how people might gain more power over themselves by using knowledge from behavioural science to improve their decision-making, and to guide their own behaviours in ways that enrich their lives.

This, the second phase of the project builds on the first by applying the latter's theoretical account of behaviour change and decision-making in a real world setting. The research described in this report involved deliberative workshops to teach people about the ways we make judgements and form habits. Participants then attempted to apply this knowledge in their own lives and qualitative research was used to gauge the effect this had.

In our research we adopted and applied a particular approach to behaviour change which is reflexive, holistic and self-directed. We have called it "Steer". This report argues that such an approach, if applied more widely, could help realise the more active model of citizenship that the RSA argues is vital for a flourishing 21st century society.

The report makes the following arguments and recommendations:

THE APPLICATION OF BEHAVIOUR CHANGE AND BRAIN SCIENCE

1. The brain science that is particularly relevant to behaviour change is that which describes how the brain works via a co-operation between two kinds of functional systems: the controlled and the automatic. However, it is mistaken to see these two systems as operating separately. Rather, they are intertwined to varying degrees depending on the kind of behaviour in question.
2. None of the various models that have been advanced (including the much discussed ‘Nudge’) provide a universal basis for encouraging better decision-making and behaviour change. Their relevance and application is highly context-specific
3. The very act of ‘thinking about thinking’, in which people develop an understanding of how brains and behaviours work, has the potential to empower people as part of a new model of active, 21st century citizenship
4. This reflexive approach is also integral to a progressive (in its non-partisan sense) political agenda. As part of this agenda, we advocate an approach which empowers citizens to better guide their decisions and habitual behaviour by navigating their automatic, controlled and environmental impulses, and which we call ‘Steer’

RESEARCH FINDINGS

1. Our deliberative and qualitative research suggests that when people are informed about how their brains and behaviours work, they find this information interesting, useful in tackling

immediate dilemmas and helpful for reflecting on the areas of their lives that they have found most problematic over time (e.g. quitting smoking).

2. People find learning about how habitual behaviour works the most useful element. They find the idea of changing habits incrementally through reordering their social and physical environments, as opposed to relying on willpower alone, both liberating and inspiring.
3. People seem comfortable switching between intuitive and reflective modes of decision-making.
4. They are also open to the idea of ‘mulling over’ important and difficult decisions – a useful way to engage their automatic systems in support of the controlled.
5. Participants generally report a rise in confidence about their decision-making when they learn that it can sometimes be sensible to trust their instincts

HOW COULD THE STEER APPROACH BE APPLIED FOR THE COMMON GOOD?

1. Introducing the Steer approach into mainstream education through classes on ‘thinking about thinking’.
2. Using the Steer approach to inform professional practice that involves a combination of intuitive judgement and self-monitoring (a practice like social work for example). This might include staff training or the design of working practices.
3. Using the Steer approach in professions (such as social work and financial trading) where discussing decisions in a critical but supportive environment is important. The Steer approach could help create an environment where the frailties

of individual judgement are checked without ‘personalising’ problems.

4. Incorporating the Steer approach into rehabilitative programmes such as those involving offender-management. An understanding of how to guide habitual behaviour could be invaluable here, not least by reducing feelings of self-loathing.
5. Incorporating the Steer approach into behaviour change initiatives where the behaviour in question is habit-based, such as health-related initiatives (for example, attempts to tackle obesity).

The Steer approach complements other behavioural change models such as ‘Nudge’. It encourages people to be mindful of the rational, instinctive and contextual drivers of their behaviour. It also gives them the power to shape their decisions and habits through a set of everyday principles, which we have distilled from the behavioural science literature. This report describes our first attempt at applying these principles to practical problems. We look forward to further exploration in the next phase of the Social Brain project.

INTRODUCTION

Julian Thompson, Director of Projects, RSA

By the time Sigmund Freud died in 1939, aged 83, he had undergone more than 30 surgical procedures to tackle the oral cancer that was the result of a 20-a-day cigar habit, sustained over the length of his career. This early pioneer in our understanding of motivation and the mind ultimately resorted to sleeping in a mosquito net to reduce the insect-borne attacks on his ravaged mouth. Yet he smoked his beloved cigars until the end¹.

As a species which has evolved by surviving on its wits, we humans seem both wonderfully adept and strangely inept at marshalling our brains and bodies to act in ways that serve our best interests. We are capable of such inspiring feats of creativity, ingenuity and insight, yet often struggle (and regularly fail) to adjust our habits in simple ways that we know would reduce harm, or maximise benefit, to ourselves and others.

This paradox is not some obscure problem for behavioural psychologists. As we make our way in the world, we strive to maximise our capabilities and offset our limitations. We may do so for many possible reasons – power, love, status, fulfilment and

1 Hafner JW, Sturgis EM (2008). "The famous faces with oral cavity and pharyngeal cancer" (PDF). *Tex Dent J* 125 (5).

wealth to name just a few. But what is common to all such human experience is a restlessness in pursuit of satisfaction.

This obvious, but no less significant fact of human existence suggests three things about our predicament:

Firstly, that we are a long way from a comprehensive account of how our deep-seated behaviours and habits interact with our rational, perceiving minds, and with other factors (such as our history, context or environment) that may defy our attempts at control. We may never achieve this, but given the centrality of this issue to our future, any progress is to be welcomed.

Secondly, our restless nature suggests that it is common for us to aspire to something better. And the idea of betterment itself suggests that we are prone to entertaining a vision of how we should live, against which we judge our current reality. Anything short of that ideal tells us implicitly that we are failing to fulfil our potential. Contrary to some arguments this general pursuit of progress is not a uniquely Western concept, and neither is it an exclusively religious or secular one. It is central to the idea of enlightenment, whether understood in the Eastern or Western traditions.

Thirdly, an account of how our brains and our behaviours interact, and the means to apply it effectively, could help us unlock our potential. It could do so by enlightening us (if only partially) as to the mysteries that surround our intractable habits. And in doing so, we might reasonably expect to become more effective, however marginally, in pursuing a fulfilling life.

All these elements are integral to a broader ideal of citizenship that is more autonomous, more purposeful and ultimately more fulfilled.

Ambitious, but pragmatic about this promise, the RSA is an organisation recently committed to the pursuit of what it calls a “21st century enlightenment”. Founded in 1754 during the historical Enlightenment, its purpose - realised through its projects, public lectures and Fellowship activity - is to identify and release untapped human potential “for the common good” and in so doing foster a society in which citizens are more capable of acting confidently, altruistically and collaboratively.

The concept of 21st century enlightenment proposes that human fulfilment is necessarily bounded by the limits imposed by human nature and the finite capacity of the natural world, but that these limits should not be cause for fatalism. Human efficacy is about understanding and adapting to those limits and encouraging positive human development: not believing that we can ignore or defy our biological or ecological constraints but neither accepting less than we are capable of. At the heart of 21st enlightenment is the idea of sustainable citizenship: the way we might live to create the future we want.

Playing its part in this wider goal, this report marks the end of Phase 2 of the RSA’s Social Brain project. Its overall aims are as follows:

- Phase 1: to synthesise, communicate, and contribute to the growing theoretical account of the connections between brains and behaviours that has been developed by a range of new and

established disciplines over recent years. This theoretical element was covered in the first report published in November 2009²

- Phase 2: to put this enlightened thinking to work in practical ways. This applied element is described in this report.

For Phase 2, we engaged a small sample of the general public in a process of deliberative discussion, teaching and personal reflection as the means to bridge the gap between the theoretical and practical strands of this project. This involved instructing people in the way (the evidence suggests) their brains, behaviour and environment interact, so that they can better ‘think about thinking’ and also ‘think about behaving’.

This approach stems from evidence that in an educational setting such ‘thinking about thinking’ is a powerful tool for engaging and empowering pupils which also seems to raise attainment and improve behaviour.³ There is also limited evidence that it aids teachers in honing their pedagogy.⁴ The Social Brain project is keen to test the idea that forms of ‘thinking about thinking’ could be utilised more widely. The small piece of qualitative research carried out for this phase of the project tentatively suggests that this strategy could be successful.

In addition to the evidence from formal educational settings, a broader idea behind the Social Brain project is that encouraging ‘thinking about thinking’ is a powerful way of giving people more control

2 *Changing the Subject*, RSA Projects, 2009

3 See for example, C.S. Dweck, *Mindset*, New York, Random House, 2006.

4 <http://www.bris.ac.uk/education/people/academicStaff/edpahj/publications/construct.pdf>

over their behaviour. We believe that giving people more knowledge about themselves, in an accessible form, will result in them using it beneficially. This is because most people are intrigued by their own nature, and as we have suggested, interested in bettering it.

For these reasons, we decided early on that this knowledge must be applicable as well as accessible if it is to be relevant. We built this into our research design, for example, by asking participants from our deliberative workshops to keep a diary for two weeks detailing how they applied the knowledge we gave them in their everyday lives.

We have evolved, and are therefore naturally equipped, to think and act instinctively in response to the constant stream of behavioural stimuli that we experience. And the idea that we could benefit from ‘thinking about our thinking’ is a tradition that has deep historical and intellectual roots.

So we are naturals at thinking about thinking, and the very idea is nothing new. But the contention of this report is that a new and richer account of human agency – which we call “Steer” – could complement, rather than deny, our natural gifts, and our historical understanding. Rather than relying excessively on instinct, environment *or* reason as our default basis for judgement, or regard them as unconnected, Steer provides both a holistic model and a set of behavioural strategies which may be more adaptive, albeit only under particular conditions.

Our report attempts to describe this model, provide a very simple ‘operator’s manual’ and trial it with people facing real life-choices.

Our indicative evidence is that such learning and application provides people with some measure of subjective 'enlightenment'. That is, through greater understanding it enables them to feel more confident and able to control their behaviour.

The models and applications emerging from The Social Brain's initial theoretical phase, and now its practical phase, teach us to recognise the limits of the rational model of thinking and decision-making that was so central to the original, historical Enlightenment era. If a 21st century enlightenment is partly about developing the strongest possible account of our brains and behaviour, then we can already use it to emphasise a) our continuity with nature rather than separateness and distinction from it and b) the extent to which our emotional faculties are inextricably linked to our rational ones.

This is not to say that 21st century enlightenment is about 'dumbing down' or denying the importance of reason. To use reason to realise its own limits is still to harness its power.

The ultimate question for the Social Brain project is whether a change in how we think of ourselves can lead to a change in our culture, which in turn can lead to effective responses to our shared problems. In the original Enlightenment, knowledge about how the world functions led to changes in the way human beings conceived of themselves. Most notably, the success of scientific knowledge led to people beginning to view themselves as not governed by divine powers, but as capable of shaping their own destinies through the power of reason. The Social Brain project is interested in how new knowledge about brains and behaviour

might lead to a similarly powerful invigoration of people's ability to shape their own destinies.

In future, it is to be hoped that by acquiring these and other insights we might attain some marginal, but notable improvement in the mastery of our behaviour. But at the very least, it is to be hoped that by gaining such self-knowledge we also gain the determination and encouragement to persist in the face of our many frailties.

SECTION 1

UNDERSTANDING BEHAVIOUR CHANGE

1.1 BRAINS AND BEHAVIOUR

In order to be clear about the different approaches to behaviour change we first need to understand that the human brain can be usefully divided into two systems. The first is the controlled system, the second the automatic system.

The controlled system appears to be more or less unique to humans and comprises the abilities to think, set and pursue goals, and deliberate.

The automatic system is shared with animals, and consists of a battery of intuitive and instinctive behavioural responses.

However, it would be wrong to see the human brain as an animal brain with the controlled system tacked on top. In fact, the two systems work together in humans in a very sophisticated way so that our emotions (as compared to animal emotions) are far more complex and cognitive (consider the social emotions of admiration and respect).⁵

⁵ For more on how the two systems work together, see *Changing the Subject*, RSA Projects, 2009, pp. 38-41

The automatic system does not require conscious control. It is fast, can process information in parallel, and tends to be associative rather than logical. For example, when you cross the road safely while talking on your mobile phone, your automatic system is doing all kinds of processing to make this possible.

It is probably right to say that most of our behaviour is guided by the automatic system. We think, deliberate and plan much more rarely than we would care to admit. This apparent truth underpins the shift from the Enlightenment era’s lionisation of reason, to the 21st century enlightenment position of making the best of our limited rational powers.

Figure 1 lays out the characteristics of each brain system and some examples of their usage.

Figure 1: Characteristics of brain systems

System	Controlled	Automatic
Characteristics	Effortful	Effortless
	Logical	Associative
	Rational	Emotional
	Slow	Fast
	Self-aware	Unconscious
Examples	<ul style="list-style-type: none"> • Working out a budget • Planning an unfamiliar journey • Reading an instruction manual 	<ul style="list-style-type: none"> • Getting ready for work in the morning • Speaking your mother tongue • Feeling empathic towards a friend

1.2 BEHAVIOUR CHANGE MODELS

In this section we lay out six models of behaviour change that focus on one or both of the two systems in the brain as outlined above.

Describing these models or approaches firstly helps us identify how they utilise the two systems in the brain so that we can better understand where they are appropriate. For example, if rehabilitating offenders requires changing emotional reactions and ingrained habits then an approach directed purely at the controlled system will not gain much traction, since much of such rehabilitation occurs at the deeper level of the automatic system.

Another important reason for considering these models is to understand where the Reflexive Holistic Model – which takes centre stage in our research – fits within the context of other approaches.

Figure 2: Behaviour change models

Type of approach	Example	Type of Engagement
Rational Controlled Model	Taxation	Part Passive/Part Active
Deliberative Controlled Model	Citizens' Juries	Active
Reflexive Controlled Model	CBT interventions	Active
Reflexive Holistic Model	Teaching principles of 'happiness'	Active
Contextual Automatic Model	'Nudges'	Passive
Deep Automatic Model	<ul style="list-style-type: none"> • Youth at Risk • The Scouts • Family Nurse Partnership 	Part Passive/Part Active

Each approach to behaviour change outlined in the above table is distinguished by the brain systems with which it works, how it works with them, and its view of how the systems work together in a person and between people.

The Rational Controlled Model

This has been the standard approach to influencing behaviour in the

last thirty years or so. It is based on the ideas of the game theorist John Nash and was adopted by the ‘public choice theory’ of governance, as well as by most neo-liberal theories of market interactions. Its basic idea is that people will act for their own self-interest on the basis of reasonably stable preferences. It presumes that people are highly rational – if you feed them information they will act on it to avoid costs and maximise benefits to themselves. On this model, sanctions (such as taxes and prison sentences) discourage certain behaviours, whilst incentives (such as tax breaks), encourage others.

This model works on the ‘controlled’ system – it influences the decisions we make largely with the logical and self-aware parts of our brains. But it works with the controlled system in a mostly passive manner: when sanctions or incentives are introduced, people will often simply adjust their behaviour accordingly, so that they are not thinking for themselves about what they should do. For example, an individual might resist stealing money from his boss because he doesn’t want the ‘cost’ of going to prison. Yet he has not necessarily reflected on this possibility, nor on the wider context of property rights and so on. However, where more complicated information has to be processed and courses of action decided upon, this approach will engage people actively. For example, a businesswoman might have to think creatively about how to best exploit the tax breaks offered to her company.

The view of how the controlled and automatic systems work together in a person according to this approach is that the controlled system is dominant and free from the ‘irrational’ biases that might plague the automatic system. For example, the boss of a company might need to make redundancies to stay in profit, and although she might

feel sad at this prospect the theory will expect her to make the cuts. In reality however, she may well balance a rational self-interest with emotional concerns for others and her own reputation as a 'decent person'. This example illustrates how the controlled system is rarely free of the 'irrationalities' of the automatic system.

In fact, as the neuroscientist António Damásio has pointed out, all our decisions, however rational they might seem, are imbued with emotions. People with damaged brains, incapable of feeling the effect of emotions, cannot make any decisions at all.⁶ We need the sway of emotions to help us decide one thing is better than another. Moreover, a lot of our behaviour doesn't seem well explained by self-interest. It seems we also care deeply about fairness and the plight of others.⁷ Just how self-interested and how concerned with others we are will depend on social conditions. For example, research carried out in the US suggests that people who are disposed to act 'pro-socially' when in their own neighbourhood will quickly adopt a self-interested strategy for interaction once in neighbourhoods they consider to be 'anti-social'.⁸

These considerations seem to imply that the idea that we are wholly or even largely rational and self-interested is wrong. However, neuroscientist and psychologist Chris Frith asserts that forms of behaviour regarded as 'irrational', such as caring about fairness and acting altruistically, may well be considered rational once we shift

6 António Damásio, *Descartes' Error: Emotion, Reason and the Human Brain*, New York, Harper Perennial, 1995.

7 See *Changing the Subject*, RSA 2009, pp54-57.

8 David Sloan Wilson, Daniel Tumminelli O'Brien, Artura Sesma, 'Human prosociality from an evolutionary perspective: variation and correlations at a city-wide scale', *Evolution and Human Behavior*, vol. 30, 2009.

to the group level.⁹ That is, they may confer advantage in terms of cohesiveness and the ability to work together to common ends. This suggests that the Rational Controlled Model is useful, but should not be taken as all-encompassing.

The Deliberative Controlled Model

The political scientist Gerry Stoker usefully compares ‘Nudge’ to ‘Think’.¹⁰ As has been stated, ‘Nudge’ is the shaping of choices through changes in the context in which they are made. It operates solely on the automatic system.

Nudging emanates from behavioural economics, which shapes behaviour by informing approaches to policy and practice with knowledge from psychology and neuroscience. ‘Think’, on the other hand, stems from normative theory and political science. It is based on the idea that people can collectively think their way to shaping their future behaviour through discussions of ethical commitments and valued outcomes. So for example, a tenants’ association, meeting to discuss how to improve the estate they live on, might decide to hire a cleaner, complain to the Council, start a community gardening project and so on. They are deciding these courses of action based on various commonly-held normative views – they are re-imagining how their estate could be so that it better reflects their values and preferences.

There is a long history of political scientists and philosophers who have held that collective deliberation should be the dominant means

9 Professor Frith has made this point in conversation and at an event at the RSA.

10 P John, G Smith and G Stoker 2009, Nudge, Think Think: Two Strategies for Changing Civic Behaviour, *The Political Quarterly*, 80:3, 361-369.

of a society shaping its own destiny. Perhaps the most recent proponent of such an approach is German political philosopher Jürgen Habermas. His ‘discourse ethics’ tries to ascertain which ethical commitments should be favoured in order to allow for genuinely empowering and reasonable discussion to take place between citizens.¹¹ The idea is that if we get the conditions for discursive engagement right, citizens will be free to take on the continuing endeavour of negotiating with one another over what they should do in order to achieve the normative outcomes they desire. The tenants’ association meeting just cited is an example in miniature of such endeavour.

‘Think’ is not always directly concerned with shaping behaviour, as it may focus on more abstract activities like designing a constitution. But ‘Think’ can certainly be employed as an approach to changing behaviour as it has been in deliberative workshops and Citizens’ Juries. The Department of Transport, for example, carried out some deliberative research on climate change.¹² Over several months individuals learnt about the facts of human-made global warming (such as they are known) by attending workshops. The researchers found that this learning and discussion changed people’s attitudes to global warming and in some cases their behaviour.

So the Deliberative Controlled Model brings people together to decide for themselves how to change their behaviour. It would be wrong to say that it works only on the controlled system because

11 See for example, Jürgen Habermas, *Justification and Application: Remarks on Discourse Ethics*, Polity Press, 1995.

12 <http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/pgr/scienceresearch/social/climatechange/attitudestoclimatechange.pdf>

when people meet to discuss all sorts of automatic social interactions are in play (for example, the mimicking of body language). But like the Rational Controlled Model this approach is based on the idea that the controlled system is dominant – that people can employ their deliberative powers of reason to reach a consensus on how they should behave, and then change their behaviour accordingly. Obviously this means the Deliberative Controlled Model engages people actively, getting them to think for themselves.

‘Think’ is a laudable and powerful way of shaping behaviour and wherever effective and possible it should be practised. However, there are concerns about how extensively it can be used. One only has to acknowledge the negative connotations of ‘focus groups’ – groupthink, domineering individuals, and false consensus – to recognise the limits of ‘Think’. As Gerry Stoker has argued there are also doubts over its lasting effects – getting agitated about something at a meeting does not guarantee that behaviour will change afterwards.

Another point against the Deliberative Controlled Model is the simple fact that deliberating takes time and effort and demands a lot from people. In short, ‘Think’ cannot be an across-the-board approach to changing behaviour because it relies on appealing mainly to our controlled systems. Effortful deliberative engagement is hard to sustain and has less power over changing behaviour than has perhaps been thought. This is not to say it cannot be sustained at all, or has no power to change behaviour, but it cannot remedy every ill.

An explanation of 'reflexivity'

Before moving on to explain the Reflexive Controlled Model it is worth clarifying what we mean by 'reflexivity'. The British political sociologist Anthony Giddens coined the term 'reflexivity' as it is being used here:

'Social reflexivity is both a condition and outcome of a post-traditional society. Decisions have to be taken on the basis of a more or less continuous reflection on the conditions of one's action. 'Reflexivity' here refers to the use of information about the conditions of activity as a means of regularly reordering and redefining what that activity is.'¹³

According to Giddens, reflexivity has two aspects to its meaning. The first is recognition that once people become aware of the governing *principles* of an activity (what Giddens calls 'the conditions of activity'), they are able to change it. Giddens cites the example of anthropology.¹⁴ As people become aware of the principles of anthropological investigation, they may react differently to being studied by it. For example indigenous tribes in the Amazon, aware that anthropology claims to study the intrinsically valuable variety of human life in an objective way, may use the latter principle to argue for land rights or ecological preservation. But this means that anthropology itself changes: previous 'subjects' now become practitioners and the principle of a dispassionate pursuit of objective knowledge is changed to one of 'identity politics'. So reflexivity stands for an understanding of the underlying principles of some activity that yields the power to change it. This change is achieved by using the underlying principles for a different purpose: using them in a different way than has previously been the case; or replacing them with other principles.

13 Anthony Giddens, *Beyond Left and Right – the future of radical politics*, Cambridge, Polity 1994, p86.

14 *ibid.*

The other aspect of reflexivity as Giddens used the term is autonomy. As people become more aware of the principles governing activities, they are often forced to deploy those principles themselves. Giddens cites the example of marriage.¹⁵ As binding tradition loses its grip, people become aware that marriage is a choice people make to accrue certain benefits. Individuals often choose marriage (if they do) in light of the principles it is said to embody – commitment to a loving relationship, the sustenance of companionship, the fulfilment of individual potential, and so on. But once a person is aware of the principles of marriage within a non-traditional context, she can choose other options that might meet these underlying principles better – for example, a long-term relationship that is not agreed to be life-long. Choosing to get married in a ‘post-traditional’ setting - having to a certain extent thought through the choice for oneself and adjudged its value – is choosing reflexively and thus autonomously.

A ‘reflexive’ approach to behaviour change is one where someone becomes aware of the general principles that underlie behaviour. For example, one could learn that eating fat is bad for one’s heart. Alternatively, one could learn that eating fat is bad for one’s heart and that, for reasons x, y and z, it is very hard for humans to resist eating it, but by doing a or b one can best avoid temptation. The latter is a reflexive form of learning – learning about what might be done and *why and how it is done*.

So the reflexive approach to behaviour change is like the rational and deliberative approaches in that it expects people to think for themselves (its type of engagement is ‘active’). But it is different because it involves learning about the underlying principles that govern behaviour. Therefore it might be considered more empowering than the deliberative approach. It not only allows people to think for themselves, but better equips them to effect change i.e. to be more autonomous.

¹⁵ *ibid*, pp. 6-7.

Moreover, as Giddens is wont to point out, reflexivity is unpredictable. Once people understand the principles of an activity their relationship to it is potentially changed, as is the activity itself.

The Reflexive Controlled Model

An example of the Reflexive Controlled Model would be the programmes that use Cognitive Behavioural Therapy (CBT) to teach school children emotional resilience. CBT focuses on changing harmful moods and emotions through goal setting. The goals set are changes in thoughts that have in the past led to 'incorrect' beliefs. These changes in turn are supposed to lead to changes in emotions that affect behaviour. For example, every time a young person finds something difficult at school she might think 'this is just another illustration of how useless and worthless I am.' CBT would seek to set the goal of changing this thought because it is based on an incorrect belief. The child would (for example) be set the challenge of thinking instead 'this is hard but I'll do my best'. The hope is that by changing the 'trigger thought', the emotions that lead to depression, anger and anxiety will not be set in train.

CBT interventions have been shown to work quite effectively¹⁶ (to reduce disruptive behaviour) although we do not have the longitudinal data that would confirm the long-term benefits or measure how quickly the effect of such therapy 'decays'. These interventions work by teaching people some of the underlying principles that govern their behaviour and setting them the task of using those principles to change a specific behaviour. This is why

16 <http://priory.com/psych/CBTchildhood.htm>

they are 'reflexive'. They work on the controlled system because they teach people how to use thought processes and goal-setting to change behavioural patterns. So they actively engage individuals.

Reflexive Controlled approaches view the controlled system as dominant. This view perhaps explains the limitations of CBT therapeutically – it cannot deal with deep-seated emotional behaviours because these are not triggered by thoughts and beliefs but operate at an unconscious level.

The Reflexive Holistic Model

The Reflexive Holistic Model is holistic because it is not limited to the controlled system, but spans the automatic system too, and perhaps most importantly, is based on a degree of understanding about how the two systems interact. So, for example, well-being education as it is practised at Anthony Seldon's Wellington School consists of learning philosophy to understand how to set different life goals (controlled system), learning what in the environment causes unhappiness (automatic system) and techniques such as meditation for relieving stress (the controlled system setting goals for the automatic system to achieve through practice).¹⁷ The idea is that when pupils have learned these principles and techniques, they will apply them throughout their lives. So this approach to behaviour change actively engages people.

Another example of this kind of intervention is the positive psychology inspired well-being education pioneered by Martin

17 <http://www.guardian.co.uk/education/2007/may/29/schools.uk>

Seligman. Seligman is running a programme teaching well-being in three areas in the UK, across 22 state schools, for three years.¹⁸ This teaching deals with internal barriers to happiness (grouped under the heading ‘learned helplessness’) as well as external barriers such as stressful environments. Initial indicators are that teaching well-being increases educational attainment and improves ‘social skills’. Perhaps most importantly, pupils seem to enjoy the teaching.

Reflexive holistic approaches to behaviour change are quite new and largely untested in terms of long-term benefits. In Section 3 we explore in greater depth our own perspective on this approach which we term ‘Steer’. We argue that it should be added to the battery of approaches listed above for both evidence-based reasons and an ethical desire to sustain progressive politics.

The Contextual Automatic Model

‘Nudging’ took the policy world by storm in 2008 (though this fervour generated very few concrete policies).¹⁹ As has been mentioned, this approach guides behaviour by changing the *context* in which choices are made, and it works because ‘choices’ are not perhaps what we might have thought them to be.

Over the last three decades those who work in policy have tended to think in terms of the ‘rational man’ model.²⁰ But as Thaler and Sunstein put it, this is to think in terms of ‘Econs’ rather than

18 <http://www.guardian.co.uk/society/2008/sep/10/mentalhealth.happiness>; http://www.timesonline.co.uk/tol/life_and_style/education/article3391035.ece

19 See Richard H. Thaler, Cass R. Sunstein, *Nudge: Improving Decisions about Wealth, Health and Happiness*, Yale, 2008

20 http://en.wikipedia.org/wiki/Homo_economicus

Humans.²¹ Econs are economists whose behaviour is driven by calculations of the costs and benefits of any given course of action. Econs are always in control when they make choices and always rational. As Thaler and Sunstein show, Econs are largely a fantasy: Humans act like Econs only very occasionally. Most of the time they employ irrational short cuts in thinking, are swayed by feelings and other people, and often don't deliberate at all about making a choice.

Nudging works on the principle that by making changes in the way choices are presented (changes in 'choice architecture'), the automatic system in the brain is guided to produce certain kinds of behaviour. So for example, whether information is presented in terms of losses – '*10% of patients who receive this treatment die*' – or gains – '*90% of patients who receive this treatment survive*' – will affect emotional responses to it. Information presented in terms of losses is far more likely to lead to risk aversion because human beings fear losses more than they prize gains.²² This fear appears to be an emotional tendency that has evolved with the automatic system and which underpins much of our behaviour.

The automatic system is a wonderful thing that runs most of our behaviour: from getting out of bed in the morning to finding our way to work, to getting through the working day. By understanding its predictable biases and tendencies, behavioural economics aims to create policies that can guide it. So if you read some information presented as a gain rather than a loss, and you take a risk based on

21 See Richard H. Thaler, Cass R. Sunstein, *Nudge: Improving Decisions about Wealth, Health and Happiness*, Yale, 2008, passim.

22 See Kahneman, D. & Tversky, A. (1979), Prospect Theory: An Analysis of Decision under Risk, *Econometrica* 47, 263-291.

that information, you have just been ‘nudged’ by the way a choice was presented to you. The unseen hand of ‘choice architects’ has guided your automatic system.

So the Contextual Automatic Model works on our automatic brain system alone. It views that system as dominant – guiding most of our behaviours – and controlled deliberation as the exception rather than the rule. By definition, it engages citizens passively – it cannot get them thinking for themselves because it does not get them thinking at all.

There are some nudges that appear to actively engage individuals. For example, where choices are contextualised as public commitments, changes in behaviour tend to be more pronounced.²³ This looks like active engagement whereby a person thinks for herself in order to change her own behaviour. But this change in behaviour is actually driven by various emotions that are triggered in the automatic system; emotional responses such as wanting to maintain one’s reputation, avoiding the shame of not sticking to one’s commitment, and wanting to appear consistent (for one’s behaviour to align with what one has said).

The Nudge approach can only work on very simple behaviours: ones where the automatic system can be guided without any input from the controlled system; for example, placing a picture of a pair of eyes above an honesty box for coffees and teas can increase payments because people feel on some unconscious level ‘watched’.²⁴ Very few behaviours are simple enough to be influenced in this manner

23 See McKenzie-Mohr D, Smith W, *Fostering Sustainable Behaviour: An Introduction to Community-Based Social Marketing*, (1999), New Society Publishers.

24 ‘Cues of being watched enhance cooperation in a real-world setting’, Bateson et al., *Biology Letters* 2006, vol 2, pp 412–414

and that is why Nudge as an approach has not actually resulted in that many new policies. Moreover, work by researchers at Manchester and Southampton Universities suggests that nudging may only be effective on a limited proportion of the population and may be ineffective as a means of guiding ingrained behaviours.²⁵

The Deep Automatic Model

Whereas the Reflexive Holistic Model works by engaging people in the process of actively ‘sculpting’ their behaviour through an awareness of its underlying principles, the Deep Automatic Model works in a far more passive manner. This model builds up capabilities by *doing things* without there necessarily ever being any explicit goal in mind.

To use Michael Oakeshott’s distinction, the Deep Automatic Model deals in ‘practical’ rather than ‘technical’ knowledge.²⁶ Practical knowledge is the knowledge we acquire by doing things – knowledge internalised by our automatic systems through imitation, empathy, establishing habits and refining skills. For example, a carpenter learns how to plane a piece of wood by watching someone do it and trying it for herself. What is important in acquiring this ability is not a focus on ‘technical knowledge’ (the fully articulated knowledge of the instruction manual), but a focus on getting the ‘feel’ of the process right and absorbing hints and clues from what other people do. ‘Getting it right’ in this sense is ‘getting the hang of it’ through repeated practice. In this kind of activity one *may* explicitly guide one’s own behaviour (i.e. ‘*I am going to keep the movement of the plane in line with the grain of the wood*’), but generally speaking, the automatic system is left to

25 <http://www.civicbehaviour.org.uk/>

26 Michael Oakeshott, *Rationalism in Politics*, Indianapolis, Liberty Fund Inc., 1991

its own devices, making lots of micro-adjustments that are below the level of consciousness. Much of what a carpenter learns falls under the Deep Automatic Model – learning by bringing about changes in capabilities operated by the automatic system.

Oakeshott's point was not that we have some forms of knowledge that are inherently practical as in bodily or material. It was rather that *all* our knowledge involves an element of practical knowledge, and that most of our knowledge is far more practical than technical. For example, mathematical knowledge might be considered the paragon of technical knowledge. But mathematicians learn by intuitively grasping similarities and differences between different kinds of operations. And as the philosopher Wittgenstein showed, much of mathematical knowledge is far more practical than we might think.²⁷ For example, explaining to a child how to 'add up' involves saying '*look, you do this and then that happens*'. If one tries to explain what addition is without reference to the actual practice of adding, one will soon be stumped. So even in the most abstract of human subjects of study, practical knowledge is all-important.

The Deep Automatic Model does not deny the utility of the technical knowledge used by the controlled system. Rather, it holds that until a capability is developed through the automatic system, then it is often a waste of effort to try to get the controlled system to set goals that rely on this (as yet undeveloped) capability. For example, a person cannot simply decide to be a good footballer. Her initial thought 'I will be a good footballer' is just so much wishful thinking.

27 See Ludwig Wittgenstein, *Philosophical Investigations*, Oxford, Blackwell, 1991, sections 140-200.

What she must do is train, get fit, and join a team. When she has done this for long enough she may come to possess the abilities to make good on her initial goal (in the economist Amartya Sen's terms, she now has the 'capability' to achieve 'the functioning' of being a good footballer).²⁸ In other words, she has trained her automatic system so that the capability is properly developed.

Not all capabilities are predominantly driven by the automatic system but many are. And where they are, the Deep Automatic Model holds that the best way to achieve behaviour change is to put the emphasis on training that system. Of course the controlled system can be engaged along the way in the setting of goals, but the focus is on training the automatic system through *practical activity*.

The Youth at Risk charity demonstrates an example of the Deep Automatic Model at work.²⁹ In their project '*Ballet Hoo*' they challenged a group of young people from deprived backgrounds to perform a ballet to classical standards within one year.³⁰ The young people rose to that challenge and, through the experience of doing so, their attitudes towards team-working, trust and self-respect were positively changed. They *practised* behaviour that built these capabilities, and their attitudes followed suit.

The approach of the Deep Automatic Model is probably far more effective than all the others where capabilities are being *built* or *seriously enhanced* rather than simply *utilised*. For example, a group

28 See for example, Amartya Sen, *Development as Freedom*, OUP, 1999.

29 <http://www.youthatrisk.org.uk/>

30 http://www.youthatrisk.org.uk/latest_news/BalletHoo.html

of confident young people in a trusting, respectful environment where teamwork is the norm, will be able to simply *utilise* the capabilities they already possess. Whereas a group of unconfident young people in a suspicious, disrespectful environment, where teamwork is not the norm, will be unable to simply utilise existing capabilities. They will have to garner capabilities in the first place.

Another feature of the Deep Automatic Model is that it is often indirect. Many of the models of behaviour change discussed above are used in symptom-focused and direct ways. For example, young people take drugs, so we tell them about the harm drugs cause in order to try to stop their taking them. Or we feel that young people should respect one another and value co-operation, so we explain the benefits of doing so through education. It is doubtful whether such direct approaches have much lasting impact on behaviour.

On the other hand, one would not naturally connect learning ballet with gaining self-respect, trust, confidence and the 'grit' to stick at things. But these were all indirect benefits of learning how to pirouette. This indirectness helps to bypass the natural human instinct to disobey and do the opposite of what is commanded. This instinct is especially pronounced in young people, and there are many reasons to celebrate this natural heterodoxy. But where it is destructive and we want to guide behaviour, the Deep Automatic Model is to be preferred. A young person might start learning ballet because it is fun or just what her mates are doing. Yet in time she will have indirectly picked up all sorts of capabilities and attitudes to life that she may have rejected had they been forced down her throat didactically.

In summary, the Deep Automatic Model works through practical activity that builds capabilities but engages people largely in a passive manner. They do not explicitly think for themselves *'I should do x because it will yield y'*.

1.3 DEGREES OF DIFFERENCE, NOT DIFFERENCES OF KIND

All the models outlined above should be seen as placed on sliding scales. They differ in emphasis not in kind. The Rational Controlled Model does not contend that the controlled system operates in complete isolation, only that it is more dominant. Similarly, the Deep Automatic Model does not claim that people can garner capabilities completely automatically, only that a large element of gaining capabilities consists in training the automatic system. The same sliding scale conception goes for the type of engagement each model adopts. The Rational Controlled Model, for example, engages people largely passively, but it can on occasion spark people to think for themselves.

Some distinctions between the models are a little fuzzy too. For example, the Deliberative Controlled Model changes behaviour ostensibly not by teaching underlying principles, but by disseminating information. But some of that information will consist of underlying principles. In the example of deliberative workshops on the science of climate change cited earlier, some underlying principles that structure scientific practice, such as the principle of sufficient evidence, would quite naturally be discussed. Participants may well then start to use these principles 'reflexively' – thinking for themselves about the very role of science in modern life. This reflexivity may prompt them to think about evidence-gathering in their daily lives and how it informs

their behaviour. Thus what starts as an information-disseminating exercise may also end up as a reflexive exercise.

So the models outlined above should not be regarded as strict philosophical definitions but useful categories for thinking about behaviour change. In the next section we try to examine how behaviour change approaches operate within the wider context of a society and polity. We ask what the side effects of different approaches might be for (broadly speaking) progressive politics. Presuming that we see social progress (rather than the fetishisation of progress as a process) as desirable, it is worth examining whether the emphasis placed on the value of some models over others be re-weighted to serve this process better. Spelling out the characteristics of the models should be helpful in working out which ones might be presently overused, as well as which might be underused.

We argue that there seems to be a case for expanding the use of the Reflexive Holistic Model. In Section 3 we present some indicative evidence the RSA has gathered to support two contentions:

1. that the Reflexive Holistic Model has the potential to be an effective tool for changing behaviour;
2. that this model has the potential to serve a progressive politics that fits with the needs of a 21st century citizenry.

In other words, we have gathered some evidence to support the contention that ‘thinking about thinking’ in terms of brains can be a useful component in encouraging a more enlightened society.

SECTION 2

FROM 'NUDGE' TO 'STEER'

2.1 THE THREEFOLD SYSTEM OF THE SOCIAL BRAIN

The debate over behaviour change can be viewed simply as a choice between 'Nudge' and 'Think': between passive engagement with the automatic system or active engagement with the controlled system. But this accepts a false dichotomy: that either choices are controlled and rational or they are automatic and irrational. This dichotomy gives us the wrong picture of how the human brain works. Each 'rational' choice is in fact imbued with 'irrational' emotion, and also relies in some way on automatic processing. So it is not even simply a case of two systems working together. There is one self-organised system that operates at different levels. 'You' and 'me' are not just the controlled parts of these systems, *we are the whole system*.³¹

Our desktop research suggests that there are three levels to the holistic system that governs behaviour.³² At the most basic level there are automatic responses such as fight or flight, which are largely impervious to training. They can be *conditioned* – for example, one can momentarily

31 For more on this see *Changing the Subject*, RSA, 2009, pp38-41.

32 See Ben Seymour, Tania Singer and Ray Dolan, 'The neurobiology of punishment', 2007, www.fil.ion.ucl.ac.uk/~bseymour/papers/nrm2119.pdf

overcome the flinch reflex to put a contact lens in – but they cannot readily be trained to any extent. At the next level there is habit-based behaviour – behaviour executed with no particular goal explicitly in mind, but which is already proven to work. Habits can be guided and trained and it is probably fair to say that the vast majority of human life consists of just such training. At the third level is the controlled and goal-directed system designed for deliberating and thinking.

An example of habit-based behaviour is getting up and getting ready for work in the morning. You never explicitly set yourself any goals or deliberate, you simply act through habits that are proven to work. Yet although habits operate at the automatic level they are susceptible to guidance from the controlled system. For example, when a cricketer faces a 90mph delivery from a bowler he is acting only through a combination of habit and basic automatic responses, for only these can process information quickly enough to be effective. Yet he can still set himself the goal of attacking the bowling, or hitting to the on-side, or playing defensively, so that his habits are guided by a prior controlled decision.

The example of the cricket player shows how controlled decision-making can guide and improve the automatic system through training habits. This also works the other way round: when you stop to *think* to plan an unfamiliar journey, you are relying on automatic and habitual behaviour to help you do this (reading the map with habitual ease while you think about alternative routes, for example).

If we highlight the threefold nature of the automatic and controlled systems in the brain, and show how they are integrated together in

actual use, this can prevent us from falling into the false dichotomy of thinking solely in terms of automatic *or* controlled behaviour. We can avert the danger of thinking up interventions that *either* influence the controlled system *or* the automatic one, when there is actually scope for interventions that work with both. The key is to recognise that habits span both systems – although habitual behaviour is automatic in execution, it can be guided and refined by controlled deliberation. When a carpenter tries to make a new kind of cabinet, she relies constantly on her habitual behaviour to fashion the wood. But at the same time she engages her controlled system in fine-tuning that behaviour in order to do something new.

Thinking of how the brain drives behaviour in this holistic way is not to argue for a definitive theory of mind. It is rather to take the best available evidence and put it in a useful framework for the layperson to understand. The three levels of behavioural responses (completely automatic, habitual, and controlled) seem to be easily identifiable in the brain and long-evolved, as well as chiming with actual experience. So there seem to be good reasons for adopting this framework.

2.2 'STEER'

With this three-fold behavioural system in mind, we should consider 'Steering' as a genuinely useful way of thinking about the Reflexive Holistic Model (capitalising 'Steer' hereafter will serve to indicate the technical usage about to be explained).

Our behaviour can be Steered by the environment (as in 'given a steer'), which is how 'nudging' works. For example, when drivers

approach a bend in the road they tend to slow down automatically if white parallel lines are painted across the asphalt with decreasing gaps separating them.³³ This is because the lines give the impression that the car is speeding up, which drivers counteract by slowing down. In this case automatic behaviour has been Steered from without. When we drive, most of our behaviour is habit-based and automatic. This is why we can drive perfectly safely while talking to a passenger – we are not ‘thinking’ about what we are doing, we are just doing it. But we can still Steer our automatic behaviour – we can set ourselves the goal of driving the car at high speed, in a fuel-efficient way, or carefully because we have a box of crockery on the back seat. In this way we Steer our automatic behaviour internally, with the goals we set. So thinking in terms of Steer, is thinking about both the internal and external guidance of behaviour, through an understanding of its underlying principles.

An even clearer way to think about Steering behaviour is to take Jonathan Haidt’s image of an elephant and a rider.³⁴ The elephant represents our basic automatic responses and habits. The rider is our goal-directed and controlled decision-making capacity. The rider is certainly not an all-powerful master – it is no easy thing to guide the elephant. In fact, some of what the elephant does we cannot control very easily at all. For example, if the elephant is hungry he may do nothing we want. Other aspects of the elephant’s behaviour we can train over time and guide fairly well once we have learnt how. But most importantly ‘we’ are not simply the rider that sets goals and gradually masters the elephant. We are the elephant

33 <http://nudges.org/?s=lake+shore+drive>

34 Jonathan Haidt, *The Happiness Hypothesis*, 2007, Arrow Books, passim.

too, and Steering our behaviour in certain directions means training ourselves through repeated practice as well as setting goals.

To complete the image of elephant and rider we need to add the cultivated forest through which the elephant walks. This represents the social and physical setting of behaviour. Changes in this setting affect how the elephant behaves and what he is able to do. Nudging works by changing the layout of the forest. Steering can work by either changing the forest, or changing the guidance of the rider. Both these kinds of Steer can help train how the elephant behaves.

Someone thinking in terms of this image of Steering an elephant through a cultivated forest will accept that changing the context of choices can influence her behaviour (that ‘nudges’ are useful tools), but also that an external Steer can be reinforced by her own internal Steering of the elephant. By becoming aware of the limits of controlled decision-making we become better able to use its meagre resources. We can learn both to rely more on changing the setting of our choices (as with Nudging), and how choices can be shaped for the better by guiding the habits they spring from. So citizens can Steer their behaviour through goal-setting, repeated practice and changing the context within which they make choices. Thus we might say that the paradox of controlled decision-making and thinking is that the more we are aware of its limitations, the less limited it becomes in shaping behaviour.

2.3 BUT IS STEER CONTRADICTIONARY?

The idea of Steer is a way of making vivid and comprehensible the Reflexive Holistic Model of behaviour change. Yet even though

the threefold system that drives behaviour supports the approach of Steer, it may still appear to be contradictory. If so much of our behaviour is influenced by social settings and automatic processes, how can *thinking* about underlying mechanisms and psychology help? But although much of our behaviour does not spring from explicit thought, thought *can still* guide behaviour. And by learning about how brains drive behaviour, people are not merely thinking. They are also entering into a different emotional relationship with themselves and others – they are changing the way they *feel* about behaviour, for example, feeling more able to talk to others about what they should do.

Having said this, we found enough evidence to suggest that knowledge about brains and psychology was useful in its own right in terms of informing how participants guided their own behaviour. There seems to be something about the subject matter – brains – that changes the way people feel. As Sarah-Jayne Blakemore remarked at a talk at the RSA,³⁵ neuroscientific explanations seem to possess a ‘seductive allure’, persuading people even when they add no explanatory value.

Our research suggests that talking about brains facilitates a trusting and productive relationship between intervener and intervened, as well as a more positive attitude towards guiding behaviour. One conjecture is that we all have brains and so feel closely associated with any learning about them. As has been alluded to, Carol Dweck’s studies of teaching school pupils about the plastic nature

35 <http://www.thersa.org/events/audio-and-past-events/2009/the-science-of-lifelong-learning>

of the brain – that it literally changes by strengthening connections when we learn something – led to markedly positive educational and emotional outcomes. Work by Paul Howard-Jones in the UK also suggests that learning about brains enhances educational performance.³⁶

There have been studies of ‘metacognition’ (thinking about thinking) that seem to show that it is essential for many cognitive and emotional abilities.³⁷ For example, imagine trying to remember things without having some knowledge of how memory works.³⁸ If we weren’t aware that we often confuse one memory with other similar ones (which is a piece of knowledge about *the process of remembering* not about the specific content of a memory), it would be hard for us to imagine using our faculty for memory at all. The same is true for relating to other people emotionally. If we weren’t aware that our interpretation of others’ emotions can often be coloured by our own mood, we would be pretty terrible friends, colleagues and relatives. And again, this is knowledge about *the process of relating to others in general*, not knowledge about some particular relation to another person.

It is both essential and commonplace for human beings to think about the underlying principles that govern their behaviour in the ways just described. It is very natural for humans to ‘think about thinking’, where ‘thinking’ is taken in the broad sense that includes

36 <http://www.thersa.org/events/audio-and-past-events/2009/the-science-of-lifelong-learning>

37 Arthur P. Shimamura, ‘Toward a Cognitive Neuroscience of Metacognition’ *Consciousness and Cognition* 9, 313–323 (2000)

38 Shimamura, A. P., & Squire, L. R. (1986). Memory and metamemory: A study of the feeling-of-knowing phenomenon in amnesic patients. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 12, 452–460.

any cognitive activity, encompassing emotions (human emotions are cognitive – they possess meaning and they convey information, as well as being capable of directing action). So by our very nature as thinking, emotional and social beings we employ the Reflexive Holistic Model – we think about the underlying principles that govern the smooth interaction of the controlled and automatic systems in our brains. Metacognition is not yet particularly well understood by neuroscientists – but we know that it is extremely widespread across cognitive functioning.

Metacognition is also a form of reflexivity because it is a kind of understanding that changes what it understands. For example, a simple kind of metacognition such as understanding how memory works changes *what memory is* for the person in question. A small child will not necessarily understand that she sometimes confuses similar memories. But once she does realise this, her faculty of memory will change – it will be more under her control and she will realise that it has the potential for deception. So metacognition will also yield the second quality of reflexivity – autonomy. The child will now not only be better equipped to think for herself, she will have no choice but to employ memory in such a way as to be in part responsible for how well she uses it.

The Steer approach simply attempts to enhance this ‘natural reflexivity’ by bringing into better focus the full extent automatic processes play in governing our behaviour. As conscious beings we tend to focus on what is apparent to consciousness. For example, we are conscious of confusing memories or hurting others’ feelings, and we learn to correct these failings by grasping the underlying

principles that govern memory and social interaction. Steer interventions can make us aware of the underlying principles of behaviour that are perhaps not so easily given to consciousness, or not given at all. For example, if we learn that when we develop a new habit in line with our goals we will get a dopamine reward, but that this reward will drop away after the first few times we indulge the new behaviour, we are being made aware of something we are ‘dimly’ rather than fully conscious of. This is how the Steer approach extends our natural reflexivity, through learning about the underlying principles that govern habitual behaviour.

One might conjecture that as a form of metacognition, learning about how brains drive behaviour is a highly prized form of knowledge that our evolution has disposed us to value (metacognition is essential to most of the cognitive abilities that distinguish us as more intelligent than other mammals). This may be a more prosaic version of Aristotle’s claim that the pinnacle of human life is contemplation or thought about thought, something which he argued led to the happiest life.³⁹

Whatever we conjecture regarding the appeal and value of metacognition, it is clearly a potentially powerful tool for changing behaviour, since it seems to be intrinsically rewarding and of interest to most human beings.

These considerations bring us to research into ‘mindfulness’. Mindfulness is a kind of thinking about thinking – a sensitivity

39 See Book X of the *Nicomachean Ethics*.

to one's thoughts and emotions which enables their better management.⁴⁰ Mindfulness can be practised through meditation but is not limited to it. It can also be used therapeutically to combat depression, anxiety and stress. Research into mindfulness suggests that people who practise it are generally happier than most. This is backed up by neuroscientific evidence which suggests that areas of the brain concerned with positive emotions are more fully activated and developed in people who practise mindfulness.⁴¹

2.4 STEER AND PROGRESSIVE POLITICS

There is so much talk today about behaviour change that one wonders if policy is concerned with anything else. But we should remember that policy has always been about behaviour change to some degree. Incentives and sanctions have always been used to influence behaviour: low start-up taxes for businesses encourage enterprise; paying National Insurance ensures that people contribute towards pensions.

In recent years there has been a concerted movement to extend the range of behaviours that might be shaped. Areas such as personal health, parenting and emotional well-being have all been subject to behaviour changing policies, for better or worse. But again, this is nothing new: from the inception of the mass media, governments have tried to shape our behaviour; it was simply called 'public education' rather than the 'behaviour change agenda'.

40 See for example, <http://www.mindfulness.com/>

41 See Davidson et al., 'Alterations in Brain and Immune Function Produced by Mindfulness Meditation', *Psychosomatic Medicine*, 65:564-570, (2003).

A factor in our discomfort is that what is often meant by behaviour change is a *behavioural approach* to shaping behaviour. Broadly speaking this means working with the Contextual Automatic Model outlined earlier, rather than changing the minds of citizens through information and explicit incentives.

It is outside the scope of this pamphlet to assess the merits of ‘Nudging’. However, we will argue that approaches to behaviour change should at least not put in jeopardy the tenets of progressive politics, which can be summarised very roughly as:

Autonomy – Citizens need to be able to take control of their own lives in order to achieve their fullest potential wherever this is possible.

Responsibility – Citizens need to be capable of playing their part in ensuring common goods such as a clean environment and trusting social relationships.

Democratic engagement – Citizens need to be able to view forms of governance (whether national or local) as open to them and as reflecting their interests.

Communal action – Citizens need to have ways and means of negotiating and collaborating with one another over achieving common goods and dealing with shared problems.

This pamphlet contends that Steer is an approach to behaviour change that dovetails with progressive politics. As a form of the Reflexive Holistic Model, Steer is an active engagement of individuals that allows them to take ownership of the principles that underlie their behaviour. This means Steer is empowering – it hands over the tools of behaviour change from policy wonks to people themselves.

In common with all reflexive interventions Steer is unpredictable. Remember that reflexive understanding changes the activity that is understood. The child who learns that her faculty of memory can be deceptive has a changed faculty of memory. So we might ask: when citizens learn about the prevalence of habitual behaviours and how they can be best guided, will they be less beholden to habits? Will they be better equipped to establish new habits or cope with novel situations? If their behavioural control were to become enhanced in these ways then our image of the elephant, rider and cultivated forest would itself change slightly. It would (somewhat paradoxically) become easier for the rider to direct the elephant, by being aware of his or her inherent weaknesses.

In other words, because the Steer approach is reflexive, it is itself (as an approach) open to revision and evolution. This seems to be a far more progressive conception of behaviour change than Nudge because it does not simply guide long-evolved tendencies in the brain such as aversion to losses, it actually offers citizens the possibility of reaching a new threshold of behavioural competence, from which new, unseen possibilities might emerge.

In the most recent Social Brain pamphlet, *Changing the Subject*, we argued that new social institutions were needed that would enable people to develop the capabilities to be more autonomous, and to work together to find solutions to shared problems (to take responsibility for the choices they make), as well as to generate higher levels of trust and connectedness, which seem to be necessary for human happiness.⁴²

42 *Changing the Subject*, RSA, 2009.

A core argument supporting the need for such institutions was the frailty of individualism. There is a wealth of evidence to suggest that people do not develop capabilities central to responsibility and autonomy, such as self-control and ‘application’ (sticking at things), without adequate social support.⁴³ Similarly, in the UK plunging levels of trust seem to correlate to a retreat to the private sphere: people simply do far fewer things than they once did through communal means.⁴⁴ We are left with an individualist society that tends to make us lonely and unhappy. But also such a society does not provide adequate means for communal action – ‘spaces’ where we can negotiate with one another over how to respond to the shared problems we face.

This argument about the weakness of individualism is pertinent to both the development and sustenance of autonomy, responsibility, democratic engagement and communal action. That is, it is pertinent to the very possibility of progressive politics.

Steer, as it employs the Reflexive Holistic Model of behaviour change, may well help to combat the frailties of individualism. In teaching people about the underlying principles of behaviour, it has the potential to engender autonomy – for people to take better control of their behaviour from an informed position. But also, with the image of the cultivated forest, it makes people aware of their interdependence with others and thus the need for social support

43 See *Changing the Subject*, RSA, 2009; ippr, *Freedom’s Orphans: Raising youth in a changing world*, 2006; *Building Character*, Demos, 2010; Avner Offer, *The Challenge of Affluence: Self-Control Britain since 1950*, Oxford University Press, 2007; Daniel Goleman, *Emotional Intelligence*, New York, Bantam Dell, 1997.

44 See Daniel Dorling, *Injustice: Why Social Inequality Persists*, Bristol, Policy Press, 2010.

in shaping behaviour, as well as of the need for ‘spaces’ in which to tackle shared problems.

2.5 THE VALUE OF LEARNING ABOUT OURSELVES

Reflexive understanding, as has been indicated, is a kind of understanding that has the potential to change the activity that is understood, concomitantly engendering the potential for autonomy. ‘Natural’ reflexivity – such as learning to monitor one’s deceptive memories – changes the activity understood and engenders autonomy in one fell swoop: once a child is aware of the principles that govern memory use, her faculty of memory *eo ipso* changes in a way that forces her to take more of a role in controlling it.

Steer, on the other hand, is a form of understanding that is only *potentially* reflexive. In contrast to the ‘natural reflexivity’ involved in mastering memory use, one could learn about the governing principles of behaviour and simply ignore them or put them out of mind. So Steer does not guarantee a change in the activity that is understood, and it does not guarantee greater autonomy. A person might feel that she was changed forever on learning some of the underlying principles of her behaviour – that she could not ‘see things in the same light again’. And she might feel that this change gave her more autonomy with regard to her behaviour.

On the other hand, she might not. We meet here the question raised in the introduction to this pamphlet, which boils down to whether knowledge about brains and behaviour is *useful* and *relevant*. If the underlying principles that people learn through a Steer approach bring about a positive change in people’s relation to their own

behaviour – one that engenders more autonomy – then some distance will have been covered in answering this question.

To begin to understand if Steer has the potential to be a genuinely reflexive intervention, we carried out a small piece of research, which is explored in the next section. This was qualitative and deliberative research, designed to provide exploratory insights rather than quantitative research directed towards ‘external validity’. Therefore our findings – that Steer seems to work and that participants felt empowered by a changed relation to their own behaviour – are offered in the interests of further investigation and inquiry.

By explaining to participants how decision-making processes work in the brain we found that confidence rose with regard to Steering behaviour, both internally (guiding behaviour through decisions) and externally (deciding to change the context of choices). Sometimes this rise came through using more controlled deliberation, sometimes less. And sometimes it simply meant acknowledging that what participants were doing already worked pretty well.

This rise in confidence amongst participants provides indicative evidence that Steer might be a useful incarnation of the Reflexive Holistic Model, and a useful complement to approaches such as Nudge, while acknowledging that there are limits to its application, just as there are limits to the application of Nudge.

SECTION 3

TEACHING STEER

3.1 OUR RESEARCH QUESTION

We carried out a small qualitative study to explore whether people felt empowered by becoming aware of the underlying mechanisms that drove their behaviour. In other words, ours was a study to test whether knowledge about brains might be empowering *at all*. The conclusion we have drawn from the research is that it might be. However, we view this study as merely laying the ground for further studies that investigate the effects of a Steer approach to changing behaviour.

3.2 THE FIVE STEER PRINCIPLES

The participants in our research learned five simple principles of decision-making. These principles were explained in terms of brain functioning and were accompanied by images. The principles were not meant to be exhaustive, simply useful ‘rules of thumb’ for understanding and guiding behaviour through decision-making. They were derived from thinking about the basic and uncontroversial ways in which the brain is known to function – for example, that automatic processing occurs in parallel, is very fast and makes its results known through ‘hunches’ and ‘gut feelings’.

The impact of the principles on the participants will obviously have been bound up with how well they were communicated. This could be controlled in future research on reflexivity, although excellence in communication shouldn't be ruled out of any policy recommendations around reflexive interventions. Communicating knowledge well is integral to any implementation of Steer, and building a 'warm' rapport between 'teacher' and 'learner' should be considered inherent to the approach, not an incidental variable to be controlled away.

The research, however, was not entirely based on the communication of information. During the two workshops, participants had plenty of time to discuss and share their thoughts and feelings about the knowledge taught and how it applied to them. This gave participants the chance to understand the knowledge for themselves. Moreover, in between the two workshops we held, the participants kept a diary where they detailed their attempts to apply the learning in their everyday lives. Letting participants properly discuss and apply the knowledge in this way, so that it is properly absorbed, is central to it being able to guide behaviour by being easily called to mind.

The descriptions of the Five Principles we outline are more or less as they appeared to participants. They are explained in brief terms here because they were originally conveyed at a single workshop lasting three hours. At the workshop we called them 'rules', but on reflection we feel 'principles' is a better moniker. In what follows we have changed 'rules' to 'principles' apart from when it relates directly to participants' quotes.

Principle 1 – Habit is King

Automatic System (limbic system) – The automatic system tends to work through instinctive decisions based on feelings and ‘hunches’. This system can do many things simultaneously, is extremely fast, and is constantly at work picking out patterns in the world. It is brilliantly efficient but can make mistakes. For example, based on the limited experience of only ever hearing a male airline pilot over the intercom of a passenger jet, one might surmise; ‘if it’s an airline pilot, it’s a man’. This error turns an inductively based assumption into a deductive truth. The automatic system tends to encourage this kind of mistake.

Controlled System (largely based in the pre-frontal cortex area of the brain) – The ‘blackboard of the mind’ – this system is controlled, consisting of deliberate thinking and planning. This is where we hold things in mind and think about them – *‘Should I go to an RSA research workshop? It might be interesting, so why not.’* We also solve problems with this part of our brain by thinking creatively about them, and we set ourselves goals.

Decision-making results from these two systems working together, rather like a pilot and autopilot. The autopilot can do all sorts of things in parallel, is very fast and efficient, and flies the plane most of the time. The pilot takes the controls when problems need to be solved or plans made.

Good examples of decision-making where the two systems work together are decisions based on ‘insight’. If you are deciding what move to make in a game of chess your pre-frontal cortex (your pilot)

directs your auto-pilot toward a goal like *'trap my opponent's queen'*, and your autopilot does thousands and thousands of calculations. Then moves will 'pop' into your head with a feeling of *'what about this one?'*⁴⁵

Most decisions we make are actually based on habit – we don't set ourselves a goal, we just do things we are used to doing. For example, we come out of work, we get on the bus, we go home and we make a cup of tea. We don't think at any point 'taking the bus will get me home so I'll take it', or 'drinking a cup of tea will relax me so I'll make one'. We just do these things because they are proven to work and we are used to doing them. In other words, we are running on autopilot a lot of the time.

You might think the way to change your habits would be to wake up your pre-frontal cortex (your pilot) and to set yourself the goal of behaving differently. So every time you reach for a biscuit, or every time you don't go to the gym, your pilot would step in and direct you to behave differently.

But that strategy will probably not get you very far on its own for these reasons:

1. **Autopilot rules** – Your brain tries to make things easy all the time – to make the majority of your behaviour automatic. It wants to keep the pilot fresh for when he/she is really

45 See 'Unconscious thought precedes conscious', www.economist.com/sciencetechnology/PrinterFriendly.cfm?story_id=13489722; Jonah Lehrer, 'The Eureka Hunt', http://www.newyorker.com/reporting/2008/07/28/080728fa_fact_lehrer

needed, and it wants to keep you running as smoothly and efficiently as possible with the supercomputer that is the autopilot.

2. **The pilot is weak** – In some experiments that were carried out, when people exercised self-control (when the pilot stepped in to direct behaviour), it was discovered that subjects found it harder to exercise self-control again soon afterwards.⁴⁶ The pilot tires very quickly.
3. **Novelty wears off quickly** – The autopilot is always trying to understand and do new things. This is because the more you can understand and do, the more likely you are to survive and succeed. So when you do something new, such as going to the gym, you'll get a reward – a hormone called dopamine will make you feel good. But after a few times, this reward will disappear.⁴⁷ The autopilot succeeded in getting you to do something new and has moved on.

You have to struggle really hard to change habits simply by using your pilot. You should not give up, but try to change other things as well – think about what social and physical contexts will best support you to change habits. For example, arrange to go to the gym with a friend – this means you're more likely to keep the commitment because you'll let your friend down if you don't. Going with someone else means you might enjoy it more, make it easy to drop into the gym as part of your routine or promise yourself a reward for going that will act as motivation.

46 Jonah Lehrer, *How We Decide*, Edinburgh, Canongate Books, 2009

47 Schultz W, 'Getting formal with dopamine and reward', *Neuron*, vol 36, 2002, pp 241-263.

Schultz et al., 'a neural substrate of prediction and reward', *Science*, vol 275, pp 1593-1599

The key is not to think of changing habits as a case of applying willpower alone. It is better to conceive of changing them by altering the context in which the automatic system operates, because it is that system that drives habitual behaviour.

Principle 2 – Go with your gut, but take a moment to think when something new is happening

Your autopilot is so fast and efficient precisely because it is automatic. Unlike your pilot it can run through thousands, even millions of bits of information at the same time, rather than being limited to the few bits of information you can keep in mind at any one time. This means the autopilot is a very good guide to making decisions. If you go to a restaurant and something on the menu jumps out at you, that might be because your autopilot has taken into consideration lots of different pieces of information in an instant – what you have eaten recently, what your stomach feels like, what combinations of ingredients work well together, whether you've liked something similar before and so on. Often you should trust your 'gut' feelings, because they are the result of a complicated set of calculations. Your gut is actually very intelligent.

Two of the parts of the brain that link the autopilot into decision-making are the anterior cingulate cortex (ACC) and the orbitofrontal cortex (OFC). They make you aware, through feelings, of what options it would be good to choose at the restaurant. This is your 'gut' instinct, your 'hunch'.

Think of a footballer on the pitch. He decides he wants to pass forward, but he doesn't use his pilot to decide to whom and when, he

follows his gut. What happens is his autopilot quickly calculates all the factors – which players are available, which blocked off, which about to move one way and which the other, and in an instant, the pass is made. If the player had to stop and think, the moment would be gone.

In an experiment students were shown the room of a stranger for 15 minutes. Afterwards, they ranked the personality of the occupant of the room according to a psychological test. Their descriptions were more accurate than those of the person's close friends.⁴⁸ The autopilots of the students had picked up all sorts of subtle cues from the way the room looked and built a picture of the occupant's personality that manifested in hunches.

But if you follow your gut unthinkingly, you will make bad decisions. Your autopilot is predicting what will happen, and what to do, based on habits and past experience. But what about when something new comes up? Then you need to question the assumptions your autopilot has made. This is because it has made them on the basis of limited experience. It also has a tendency to associate things – for example, being an airline pilot with being male. One should be wary of taking such associations as gospel.

There is a story of the fire-fighter Wag Dodge.⁴⁹ He was with a group of other fire-fighters in a valley with a raging wall of fire heading towards them in high winds. Everybody tried to run to get to a ridge and hide on the other side. Wag Dodge realised the ridge was too far, that the fire was coming too fast. So he stopped still, lit a little fire

48 Malcolm Gladwell, *Blink*, London, Allen Lane, 2005

49 Jonah Lehrer, *op.cit.*, 2009

on the ground, and then lay down with a scarf over his mouth and nose. This meant around him there was nothing to burn, because there was no combustible material and no oxygen, except for a small layer at ground level. So he was lying in a small area that the raging fire would pass over. What he did was think instead of listening to his gut. Nearly all his colleagues were killed and he survived because he was able to use his pre-frontal cortex (his pilot) to think creatively about a new situation.

Principle 3 – When it's difficult, just let it sit

Although it is amazingly fast and efficient, even the autopilot needs time to think sometimes. Studies have shown that when people make important decisions like buying a house or a car, they are best served by trusting their gut reactions.⁵⁰ As we have seen, this is because the autopilot can consider so much data at once. For example, how much sun a house will get, whether it smells damp, how easy it is to get to, how far it is from work, how big it is, and so on. The autopilot can take in all this information and consider it together. If you made this decision with your pilot, you would only consider one thing at a time, and you would not get the whole picture. So when a house 'feels' right and you decide to buy it, this can be a quite intelligent decision. On the other hand, people who buy houses and cars by making checklists and letting their pilots decide, more often report being dissatisfied with their choice.

But you should not make a difficult or complex decision impulsively. You should trust your gut instinct but also allow for time to 'mull'

50 As Ap Dijksterhuis, 'The Rational Unconscious', Dijksterhuis et al., Radboud University Nijmegen

over the decision. The idea is that if you let a difficult decision sit, your autopilot will run through all the factors. But you should also be checking that you are not basing your decision on a frivolous emotional reaction, like a painting in the house you want to buy reminding you of when you were young.

Your pilot can help your autopilot by simply holding off from deciding, but also by not interfering too much. Just because you can't completely explain why you made a difficult decision you've mulled over, doesn't mean your autopilot has not 'thought' carefully about it.

Principle 4 – When you feel swayed, step back and say so

We are social animals. Our brains make us highly tuned-in to the feelings of others at an unconscious level. Our autopilot is keyed in to what other people are feeling and thinking.⁵¹ It is also natural for us to imitate other people and to shape our behaviour to fit with what they are doing. For example, studies have shown that if someone is imitated they feel better about the person imitating them. Yet other studies have shown that if you leave the message *'The last person to use this hotel room reused their towels'*, this is more effective in getting people to reuse their towels than a message about the impact on the environment.⁵² We care about what other people think.

Other studies have shown that if everyone in a room answers a question wrongly, a person will feel highly compelled to go along

51 <http://www.theresa.org/events/audio-and-past-events/2009/neuroscience,-free-will-and-responsibility>.

52 See Matt Grist, *Changing the Subject*, RSA 2009, p45 for all these references.

with the crowd, even if they think the others are wrong.⁵³ This is sometimes called ‘herd mentality’. Before the financial crisis of 2008 a lot of bankers made a lot of bad decisions just following what everyone else was doing instead of stepping back and speaking out.

People often get stuck in a collective way of thinking or exhibit ‘groupthink’. The bankers also displayed groupthink, convincing each other everything would be all right.

We can’t help being swayed by other people because, as social animals, our brains are set up to imitate others and work out and care about what they are thinking. This can have benefits. For example, if you work with really talented people whom you trust to make good decisions about matters you know little about, then you are probably best off going along with their decisions. But if you do know something about the subject, and you sense they might be wrong, it is better to speak up and not allow yourself to just be drawn along.

We cannot avoid being influenced by others because much of their influence operates at the autopilot level. In fact this is no bad thing. Being tuned in to other people allows you to be sensitive to them. But when you are thinking about something and your pilot is switched on; don’t let the autopilot always sway your decision. Step back, say you’re not sure and discuss things further.

Principle 5 – When you can’t trust yourself, ask others to help

We have evolved to seek and acquire immediate satisfaction of our

53 Asch, S. E. (1951). ‘Effects of group pressure upon the modification and distortion of judgment’. In H. Guetzkow (ed.) *Groups, leadership and men*. Pittsburgh, PA, Carnegie Press.

needs – to get food, a partner, shelter and to survive as hunter-gatherers. Our brains are set up to reward us to get what we want and to get it now.

In experiments people were offered £100 immediately or £110 tomorrow. Participants often took the £100 immediately on offer. But if the choice is delayed by a year, so that people are offered £100 in a year and £110 in a year and a day, they will nearly always wait for the larger sum.⁵⁴ The discrepancy in behaviour is due to the brain pushing us to seek immediate reward. In other words, the autopilot wants things now, and the pilot may not be very strong in standing up to him or her. That is why we are not very good at or realistic about long-term planning. We cannot always control our desires well enough to do it.

We are also prone to overestimate our own abilities – for example 90% of US drivers rated themselves above average when asked.⁵⁵ We also tend to think things that go wrong for us are not our fault, but things that go wrong for other people *are* their fault.⁵⁶ And we also tend to overestimate the likelihood of things we do succeeding – we are very often overconfident and play down our chances of failing at something.⁵⁷

54 See 'A Discounting framework for choice with delayed and probabilistic rewards'. Myerson, J. & Green, L., 2004 Sept; 130(5):769-792.

55 Svenson, O. (1981), "Are we all less risky and more skillful than our fellow drivers?", *Acta Psychologica*, 47 (2, February 1981): 143–148.

56 http://en.wikipedia.org/wiki/Fundamental_attribution_error

57 See for example Ulrich Hoffrage, (2004). "Overconfidence" in Rüdiger Pohl. *Cognitive Illusions: a handbook on fallacies and biases in thinking, judgement and memory*. London, Psychology Press.

For the vast majority of human history many decisions would have been publicly assessed, since small-scale communities gave little opportunity for private decisions. People who constantly overestimated their abilities or planned badly for the long-term would have been made aware of their shortcomings. Moreover, in such a community, everybody would support each other in making long-term commitments where they were needed – for example, if everybody blithely ate communal stores of food, everybody would starve.

In our modern consumer society we are required to make many decisions on our own. So we don't have enough support – we don't have people supporting us to resist temptation, or telling us we are being unrealistic. If you want to be better at meeting long term commitments, and be more realistic, one useful strategy is to tell others about your decisions. They can remind you of what you have committed yourself to, and support you to keep that commitment. They can also apprise you of your unrealistic assessments of your own abilities. Our brains are set up to function with lots of social support, so without it we find it hard to make good decisions.

SECTION 4

APPLYING STEER

4.1 OUR RESEARCH

We held two workshops attended by 24 participants drawn from the general public. The same participants attended both workshops, although a few didn't attend the second. The participants were a self-selecting sample and were of varied ages as well as being from varied socio-economic and ethnic backgrounds. The participants were paid.

Participants' comments and answers to questionnaires were gathered at both workshops. At the first workshop the participants were taught the *Five Principles*, and discussed how they would apply them in-between the teaching. They completed a questionnaire prior to the beginning of the teaching. They then kept structured diaries over a two-week period making at least five entries describing decisions they had made and whether learning about the Five Principles had helped their decision-making. Participants handed in these diaries at a second workshop and completed a second questionnaire. There was some brief group discussion at the end of the second workshop.

Below we present and interpret the reactions of participants to using the Five Principles and to the learning they experienced at the first workshop. Data was gathered by means of questionnaires, structured diaries, transcriptions of group discussions, and follow-up phone interviews. This data (whether interpreted or not) is presented under themes and sub-themes. We used the Interpretative Phenomenological Analysis approach to analysing qualitative data, in conjunction with the principle of saturation (the principle that data is collated until no new themes are left unrepresented).

4.2 APPLYING STEER IN THE REAL WORLD

4.2.1 Positive changes and general relevance of the material

The areas where participants felt most empowered to guide their behaviour through the Five Principles relate to the following:

- changing habits
- learning to trust instinctive decisions more often
- learning when to think through instinctive decisions
- taking more time to mull over important decisions.

It was also clear that all the participants thought that citizens generally would benefit from reflexive learning about brains and decision-making, and that the learning was relevant and led to positive changes.

Many participants explicitly linked the learning from the workshop to positive changes in their ability to make good decisions. This involved a wide range of changes in current behaviour and attitudes, as well

as intentions to change future behaviour. The most notable types of positive change experienced are outlined in the sub-themes below.

When prompted to provide their views on the relevance of the material they had been taught about, almost all participants were very positive. They also stated that they found the knowledge about the brain presented to them interesting. The following comments were made by different participants in response to various questions, and as diary entries. These comments provide something of an answer to the over-arching question: *is learning about brains and behaviour relevant and useful?* They also seem to support the contention that metacognition is something people enjoy.

'I thought the knowledge was in a way empowering in the sense we were offered pragmatic and applicable tools (as opposed to vague advice on self-help and will power).'

'This is 100 times better than any self-help book.' [Participant (P) 1]

'I could identify with some of the elements in the examples given in the rules. I am now more informed as how my autopilot works and think more before making my decisions. It has been a very interesting journey of self-discovery.' [P6]

'I thought it applied to me. I think it's knowledge that will stay with me and which I can reconsider in the future.' [P8]

'I felt it applied to me and maybe had an evolutionary basis and was shared by everyone.' [P14]

'It was very remarkable and knowing of the pilot and the autopilot in our way of thinking was great. Yes, I felt I was learning about myself and the anatomy of my brain.' [P17]

'I felt very empowered by how our brain works – It totally applied to me.' [P23]

'Feel more secure, confident and sure about my decision' [P22]

'Knowing a bit about how our reasoning works has made me aware of the functions of the pilot and autopilot of the brain.' [P17]

From these responses it is obvious that many participants found the experience of learning about how their brains affect their decision-making and behaviour empowering – yielding confidence, new knowledge, and a sense that this knowledge is and would be useful. All participants found the knowledge relevant and interesting. Only a very small minority found it difficult to see how it could be useful.

Principle 1 – Habit is King

4.2.2 Changing habits

Participants seemed to find Principle 1 very useful in terms of making decisions to break negative habits, as well as being open to adopting new positive habits. In fact, they seemed to find this Principle the most helpful of all:

'I learned that habit is king! That willpower isn't in fact the most crucial thing in changing your life. This really makes sense, and I think I understand my "lack" of self-control more.' [P1]

Another participant clearly felt that Principle 1 helped her to take more control of her behaviour even though it counsels that changing habits is hard. She also found that learning about how habits are driven by the brain can relieve self-loathing:

'...instead of just giving up on a diet I just got straight back on it and said to myself "old habits die hard" – felt this supported me on staying on track and I didn't feel so much self loathing because I realise now its how our brain works' [P23]

And another participant found Principle 1 useful for making sense of a past attempt to give up smoking:

'I'd always worried about why I spent so much time procrastinating and I found it comforting that it seems to be natural for most people at least some of the time!' [P8]

Similarly Participant 23's comment above shows how she used self-talk to avoid becoming discouraged when she failed to stick to a diet. She clearly felt that Principle 1 helped her to take more control of her behaviour even though it counsels that changing habits is hard.

4.2.3 A more positive view of habits

When considering the diaries and second questionnaires, participants often focused on the positive benefits of changing habits in order to motivate themselves.

This focus on the positive contrasts with several comments made during the first workshop. When describing past attempts to change

habits many participants cited a sudden awareness of negative consequences (often relating to health) as an important motivator.

'But at a point in time he realised that if he doesn't, the detrimental effect that they will have on his health will be great so he has cut down considerably.'

[P17 referring to P21, Workshop (WS) 1]

'[P1] is thinking about giving up cigarettes and she's thinking about it for about six months... she feels bad about it when she actually does it but she's only felt really motivated for about a week since she went to a visit at the dentist and she got some bad news about her mouth.' [P8 referring to P1, WS 1]

This suggests that after learning about the Five Principles participants started to see behaviour change as something positive and within their control, rather than as something out of their control and with largely negative connotations.

It was not just negative habits that participants described changing. Participant 7 notes that changing something as minor as the route along which she walks her dog might have a general positive effect on improving flexible and creative thinking:

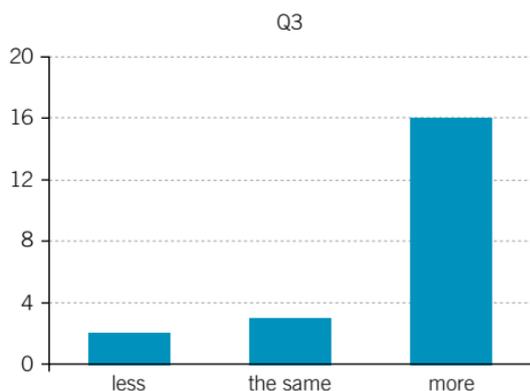
'...a change is a good thing – it challenges repetitive behaviour and makes you more aware of other options, however trivial.' [P7, Diary entry (D)]

She adds:

'...we tend to go with our usual pattern as though a change will result in some catastrophe. The familiar is so often the safer option.' [P7, D]

Given participants' acceptance of the difficulty of changing habits, it is quite striking that the biggest change in confidence, due to reflecting on and using the Five Principles, was around changing established habits.

After thinking about Principle 1, do you feel more confident about changing an established habit once you set your mind to changing it?



This result suggests that participants responded well to learning that there were neurological reasons for it being hard to change habits, and that if they were to change them, they should think more about changing the context within which their habits are manifested, rather than using willpower alone. Participants seemed to find this knowledge both a relief and an inspiration.

Principle 2 – Go with your gut, but take a moment to think when something new is happening

4.2.4 Impulses and thinking things through in novel situations

At the first workshop a considerable majority of participants told us they felt they could trust their gut instincts – that they knew when to go with them and when to be more wary.

Although making decisions on instinct was generally praised, participants recognised its limitations too. They acknowledged that good decision-making results from blending gut reactions with self-monitoring reflection. Several participants reported being comfortable moving between being thoughtful and making instinctive decisions.

Even participants who were heavily oriented towards either one of these approaches to decision-making could see the value in incorporating more of the opposite approach into their lives.

‘I’m surprised that, on occasions, I have gone with a hunch and it has turned out positive. I’m going to begin to trust my instinct much more.’ [P6]

‘I believe myself to be quite impulsive and could do with being more focused on my decision-making... ...I am hoping to try and learn and employ the rules into my life.’ [P2]

‘I usually make snap decisions but having learnt a little about the process I find I am taking more time to think or consider what I should do.’ [P15]

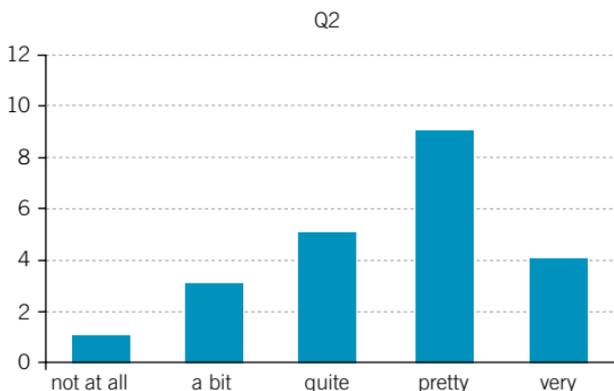
In two separate diary entries (one about booking an impromptu holiday and another on deciding to get a taxi home instead of public transport) Participant 22 describes the pleasures of occasionally shifting from being very careful and frugal to being spontaneous and treating herself:

'I am very serious and think everything very seriously (sic). Sometimes I need to trust my gut instinct to make spontaneous decisions.'

'It's fun to be spontaneous at times.' [P22, D]

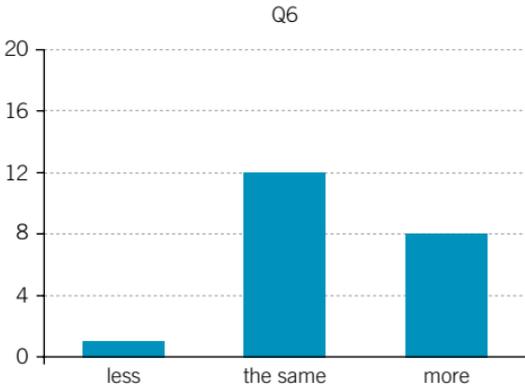
At the first workshop most participants appeared satisfied with decisions they made on instinct.

Do you feel satisfied on the whole with the decisions you make on instinct?



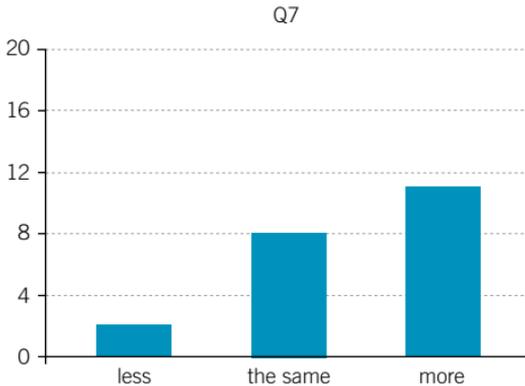
Knowledge of the Five Principles seemed to strengthen people's already high levels of confidence in their instinctive judgement.

After having thought about Principle 2, do you feel more confident about making decisions on instinct?



One of the most useful suggestions to participants seems to have been the need to assess when a situation is genuinely new and therefore not best served by instinctive and habitual responses.

After having thought about Principle 2, do you feel that when the situation is new in some way, you are more likely to stop and think about decisions you might usually make on instinct?



This finding, along with the finding that participants were often happy to trust their gut reactions, suggests they are quite willing to switch between controlled modes of decision-making and more automatic modes. Some participants did report finding the ambiguity over when to trust your gut instinct and when to think things through difficult to manage, but, overall, participants seemed to be able to move fluidly between the two modes. Many participants benefited from feeling more relaxed about their gut feelings but were also glad to be reminded to be more wary of the shortcomings of instinctive decisions.

Principle 3 – When it's difficult, just let it sit

4.2.5 *Mulling things over*

'Sometimes I act on the spur of the moment, and don't spend time to think things through – weigh up the pros/cons, consequences etc. I will try and hold back on making quick decisions on important issues, and do my research before making a commitment.' [P6, Question (Q) 2]

'I don't usually take the time to think or "mull", I am trying to do that now.' [P15]

As well as these examples of mulling things over, many participants also described the benefits of being more careful with everyday decisions. Thinking things through before making an expensive purchase was an example that occurred several times throughout the diaries, questionnaires, and workshops.

The Principles were often seen to have a clear effect on behaviour in these cases. For example, Participant 15 describes arranging for

building work to be carried out on her house:

'I usually make snap decisions but having learnt a little about the process I find I am taking more time to think or consider what I should do.' [P15, D]

4.2.6 *Becoming more reflective and self-aware*

Even when the Principles did not directly alter decision-making for the better, participants still described increased self-awareness as a positive.

'I think I would have made the same decision without the training but it did help me understand my decision-making process better' [P14, D]

Here, Participant 1 describes her shyness preventing her from going to a party:

'I found Rule 2 helpful but only so far as it helped me understand my behaviour, and not change it.'

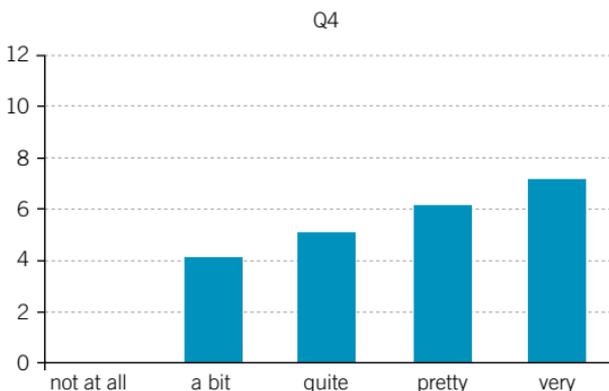
'I learned that my decisions are often made according to habit and tendencies that have become natural for me. My "default" decision is not to go somewhere where I know I will be uncomfortable.' [P1, D]

Participant 10 was generally confident in her ability to make decisions, but did indicate a greater degree of self-awareness regarding past behaviour when asked to look back over her life:

'Yes, on reflection all of my decision-making has involved following at least one of the rules listed. I think that this has been particularly apparent having completed the diary task.' [P10, Q2]

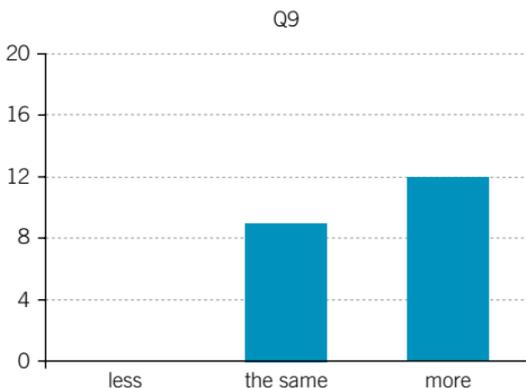
At the first workshop, the majority of the participants claimed to be happy with making important and difficult decisions.

Do you feel confident about making difficult and important decisions?



However, at the second workshop a clear majority reported that they had integrated Principle 3 (taking time to mull over complex and important decisions) into how they guided their behaviour.

After thinking about Principle 3, do you feel you are more likely to take your time over difficult and important decisions?



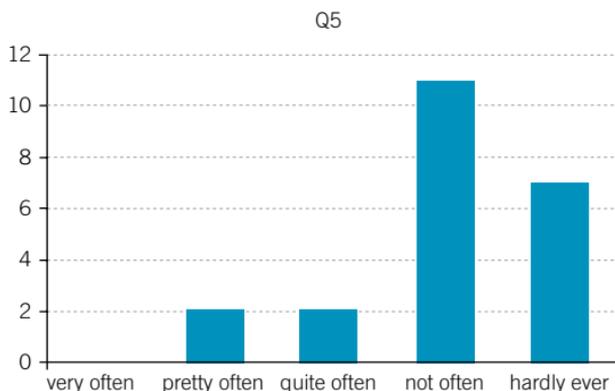
We saw earlier that quick-fire instinctive decision-making appeared to be very natural to many participants, so that learning about how it worked reinforced this proclivity and raised confidence in it modestly from a high baseline. The responses to question 9 (see previous page) show that participants were happy to mull things over and could see the value in this. Since they generally started from the baseline of being happy about their abilities to make difficult and important decisions, it is reasonably striking that taking time to mull over the possibilities was something they were so keen to adopt. Perhaps participants were already practised ‘mullers’ and simply saw Principle 3 as making them more confident. Or perhaps they saw it as a way to improve these kinds of decisions. Either way participants showed a definite comfort with using their autopilot to guide behaviour and using their pilot in order to let the autopilot do its work.

Principle 4 – When you feel swayed, step back and say so

4.2.7 *Not being swayed by others*

The graph overleaf shows that at the first workshop participants reported being largely happy with their abilities to resist the sway of others on their decision-making.

Do you feel you often make bad decisions because you get carried along by what other people think?



However, participants still reported back that they found it useful to think about resisting social influence on their decisions.

'It was empowering to use Rule 4 and speak up for someone I felt was being verbally abused behind their back.' [P7, D]

'I was particularly interested in Rule 4 and how I personally have allowed others' views and thoughts rule my own. It made me aware that being swayed by others and "going along with the crowd" was something I did quite often. Now that I recognise it, I try and not let it happen.' [P6, Q2]

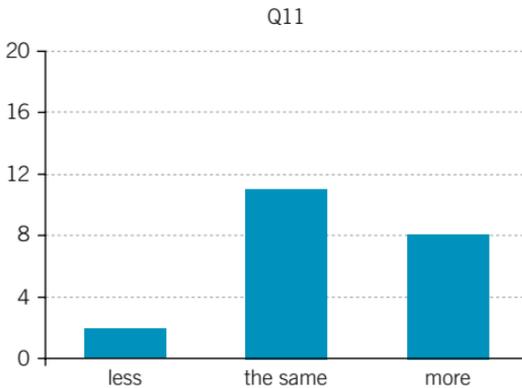
Participant 5 describes using persuasion and assertiveness to successfully change a hospital appointment [P5, D].

Participant 6 explicitly links knowledge of the Principles to a decision to not go on a holiday that she cannot afford and describes being happy with her eventual choice:

'...I'm pleased that I decided to take a step back and see what was happening, and the rule influenced my decision in this case. To be honest, if I did not learn about the 4th rule, I probably would have stayed with my initial decision.' [P6, D]

Enthusiasm for Principle 4 was reflected in a modest but notable increase in participants' confidence in resisting social pressure on decision-making.

After thinking about Principle 4, do you feel more confident about resisting social pressure on your decision-making?



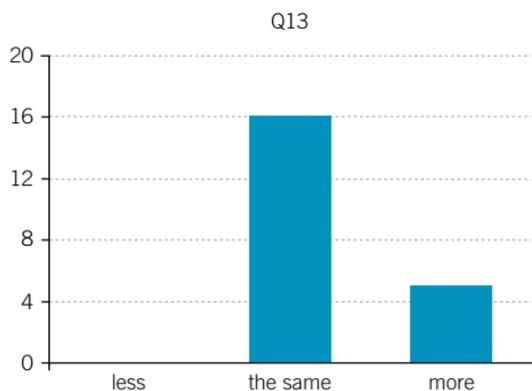
Principle 5 – When you can't trust yourself, ask others to help

4.2.8 Being more realistic

There was little mention in participants' diaries of Principle 5.

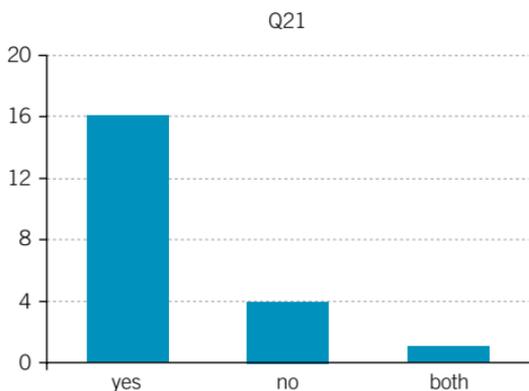
When asked if using Principle 5 had made them more likely to be realistic about their own abilities and predictions of the future, the majority thought this unlikely.

After thinking about Principle 5, do you feel you are more likely to be realistic about your own abilities and your predictions about the future?



Participants coupled a strong sense of belief in their own capacity for realism and accuracy with a sense of personal responsibility for failings, when they happen.

When things go wrong with your decisions do you usually think it is your fault?

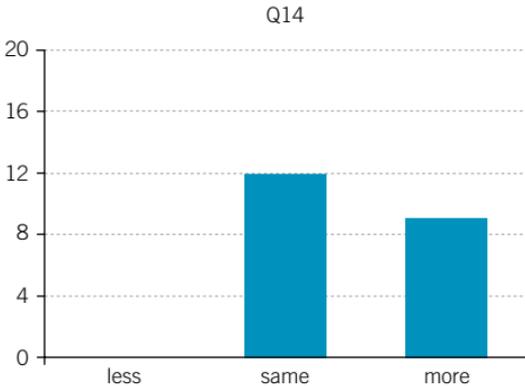


This suggests a strong sense of personal autonomy and willingness to acknowledge failure, but not necessarily learn from it.

4.2.9 Involving others in decision-making

On the other hand, participants were generally well-disposed towards the aspect of Principle 5 concerned with consulting others.

After thinking about Principle 5, do you think you are more likely to speak to other people, so that you can get feedback about your abilities and your predictions of what you will do in the future?



'When major issues arise it's very rare that a decision based on your own judgement is the best one.' [P4, Q2]

'...to share concerns with a trusted party is almost always more effective than not.' [P4, D]

Even those who were not in the habit of always sharing important decisions stated that they were beginning to see the benefits of doing so:

'Mostly I feel I know what's best for me and prefer not to discuss my decisions with others. However, having read Rule 5 perhaps I should change my attitude a bit.' [P15, Q2]

Participant 6 describes discussing with her partner a decision to have an important surgical procedure:

'I rarely discuss my health problems with a third person, but on this occasion it was very useful to have another's point of view.'

'It is good to discuss important decisions with others, as they can make you more focused on the situations at hand and plan for the future.' [P6, D]

Similarly, Participant 7 expresses surprise at how eager others can be to help:

'Rule 5 made me think! I tend not to want to bother other people but they are often only too happy to help!' [P7, D]

Participant 14 reports her experience of encouraging her friends to reflect on their collective decision to not spend a night out in Brighton. In this case she suggests that by collectively being too passive they ended up making the wrong choice:

'After the evening I told the others about the social brain ideas. I said that I felt that we were all very keen to please others and this led to us not wanting to impose our ideas and ultimately to a lack of positive decision-making. The other two were very interested and felt that this may be true.' [P14, D]

It was generally noted as important that the people consulted were both trusted and knowledgeable. But where such trust and knowledge was lacking this was perceived as a barrier to involving others.

4.3 BARRIERS TO CHANGE

Many participants seemed motivated to apply the learning from the workshop, but occasionally encountered difficulties. Although some participants relate negative experiences few people felt very negatively about their decision-making. Instead they identify a wide range of internal and external factors that sometimes prevented them from making good decisions.

4.3.1 *Internal factors: personality*

Participant 18 notes that her biggest barriers to trusting her instincts are internal:

'The biggest barrier for me to follow Rule 2 is me. I tend to over-analyse and then the "what ifs?" kick in, making it difficult to be decisive and not have an unclouded decision-making process.' [P18, Q2]

Participant 19 initially expressed a strong, unambiguous preference for impulsive decision-making. For example, when asked in the first questionnaire to identify a decision made on instinct that turned out to be a bad one she was unable to do so:

'None - when I listen to my **first** instinct it's always **right**'.

'I learnt to use my instinct with more confidence and reject too many clogging secondary additions that just muddled things.' [P19, Q1]

This strong preference was reflected in one of her diary entries. She describes being uncomfortable with situations where she needs to gather information before acting. She notes that it is hard for her to find a balance between being very impulsive on the one hand and over-thinking on the other:

'I have learnt that either I go immediately and decide on instinct/feel factor/ gut or I take ages and ages to decide! It is very frustrating not to have the in-depth knowledge to decide quickly and have to spend days, even weeks, to make a decision.' [P19, D]

Although she doesn't state it herself, it could be inferred that the workshop has had an effect in this case by raising awareness of how too much reflection can be bad for her decision-making.

Participant 1 reflects that her shyness is generally a strong determinant of her behaviour:

'For a lot of things, my shyness and reserved side probably determines what my 'gut' decision will be.' [P1, Q2]

Participant 24 also highlights the importance of confidence when describing finally making a decision to get feedback on a book she has been writing for three years:

'So I went around a cycle where I kept on making changes, being too shy to ask anyone to read it and it goes on. I finally made a decision to send the manuscript to an editor to get their opinion.'

'I learned that some of the hardest decisions to make can be based on confidence and emotions.' [P24, D]

4.3.2 Internal factors: medical and psychological conditions

Beyond these personality characteristics such as shyness, some participants also noted specific disorders, medical conditions or disabilities that sometimes made it difficult for them to utilise the learning from the workshops.

Participant 2 showed a good awareness of the Principles but a varying ability to apply them. Describing what he regards as bad decisions relating to an ex-girlfriend he notes that he considered the relevant Principles, but failed to apply them:

'I thought of Rule 3 and even consulted the handbook, however I acted on impulse.'

'I did think about Rule 1, and bad habits, but still went.' [P2, D]

He also notes that he suffers from ADHD, and reflects that this can lead to counter-productive behaviour [P2, Q2]. However, there are occasions when he is able to overcome these difficulties and successfully apply the Principles (such as resisting persuasion from an old friend to continue a night out) [P2, D].

Participant 5 notes that routine is important to her, linking this to the fact that she has suffered from strokes and transient ischemic attacks (TIAs). She notes that this makes it particularly hard for her to follow Principle 1, unless she has all the relevant information in writing [P5, Q2].

4.3.3 Other people: not wanting to hurt others

Some participants noted that their decision-making was sometimes limited because they had to consider the impact on other people, usually family members or close friends:

'...when decisions involve other people such as family or boyfriend, I can't always do what I want, what my gut tells me.'

'I have a boyfriend, so I have to make compromises. Sometimes I have to make a choice that isn't necessarily the best one for me' [P1, Q2]

'Sometimes saying the truth hurts people.' [P9, Q2]

4.3.4 Other people: social pressures

Pressure was not always from specific individuals. Instead Participant 23 refers to how society in general, as well as the law, acts to constrain her decision-making:

'Sometimes I do feel pressured by society i.e. to send my son to school when I don't necessarily agree with school and a one-size-fit-all approach to Education - but it's the law: a child has to go to school.' [P23, Q2]

Participant 5 describes the effect of wider social norms and cultural issues as factors that makes it hard for her to follow Principle 4:

'Culture and religion hang ups from education etc. which literally frowned on saying no – making me feel guilty for days on end, when it's quicker to agree and hope for the best.' [P5, Q2]

Participants 7 and 14 both refer to something similar, but actually describe it as an internal fear rather than an external pressure:

'It's a fear of being different which sometimes stops us from making a stand or opposing a view.' [P7, Q2]

'I think I worry about causing a fuss.' [P14, Q2]

Participant 18 notes that this may be something that naturally becomes easier to deal with in the course of time:

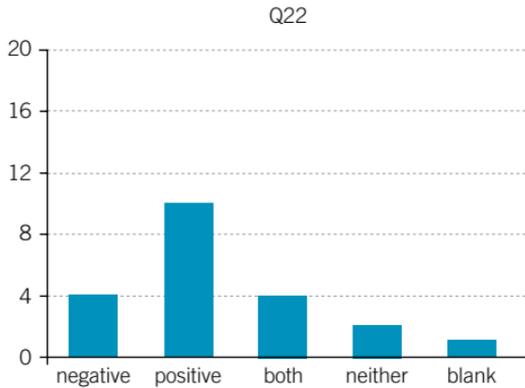
'The acceptance of others can make it difficult not to be swayed to follow the crowd. However, with age and experience this is less of an issue as being true to myself is more important than being true to someone else.' [P18, Q2]

Participant 8 mentions social norms as something that could limit the application of Principle 4, but she is one of the few who actually frames them in a *positive* light:

'I value collective decision-making and the "norm" (I spent my formative years in a very close-knit community in Northern Ireland).' [P8, Q2]

However, despite these qualms, views of how other people influenced their decision-making were largely positive.

Do you think that on the whole other people have a negative or positive affect on your decision-making?



4.3.5 Other people: not getting the right advice

Some participants were motivated to consult others, but felt that the people closest to them lacked sufficient knowledge about specific issues.

Similarly, Participant 5 was positive about some of the Principles, but noted that:

‘...the bit on Rule 5 is not applicable – because I have no one to ask and no-one I know has situations like myself...’ [P5, Q2]

Participant 8 was particularly cautious about the usefulness of seeking advice from others:

‘People are not usually truthful or accurate about their own input, because they don’t want to upset you (e.g. my boyfriend won’t input on my weight

loss, because he's afraid of an unpredictable reaction from me). They might want to sincerely help, but they have their own agenda.' [P8, Q2]

4.4 MOTIVATION TO CHANGE

Among the participants there was no overt resistance to the validity of the material in the workshop, and almost all were able to clearly identify habits that they wished to change as well as decisions that had gone badly in the past. However, a minority of participants were undecided about the usefulness of the material covered and an even smaller number felt fairly sure that the techniques were not useful or relevant to them personally.

4.4.1 Undecided about the usefulness of the Principles

Although she completed several diary entries Participant 8 rarely felt that the Principles had significantly changed her behaviour. However, she did appear open to attempting to apply the Principles:

'Normally I don't share decisions but I will try it this way to see what happens.'

'I might learn something from this new way, but it remains to be seen.' [P8, D]

Whilst Participant 8 did not describe dramatic changes in her current behaviour she acknowledged that she found the workshops interesting and also useful in making sense of her past behaviour when quitting smoking.

Participant 10 was generally very positive about the Principles, but in one diary entry on applying for a promotion she is more ambivalent about their utility:

'By incorporating Rule 5, it facilitated my ability to gain an objective assessment of my overall abilities... By incorporating Rule 5 I had in essence delayed taking a decision which I had already decided to action.' [P10, D]

Participant 24 notes that the workshops were very interesting, but she was undecided about their everyday usefulness:

'I would have loved to have gained more knowledge on the working of the brain. I felt the rules were applicable, but unsure if I would use them on a daily basis.' [P24, Q2]

Participant 19 makes a similar point, and suggests that she might need much longer than two weeks in order for any positive effects to manifest themselves:

'It has been more interesting and fascinating for me than a learning process.'

'Will it affect how I make decisions in the future? Hard to tell really. Perhaps we should send you a letter in about a year to answer that more accurately. I have hardly had decisions to make in this short spell.' [P19, Q2]

4.4.2 Not seeing the material as relevant or helpful

When asked how he felt about the knowledge taught Participant 9 notes that:

'I don't feel it applied to me.' [P9, Q2]

However, he does later identify the specific benefits of some of the Principles when prompted:

'Rule 5. It's good to talk to others about issues and problems as they can be more realistic. Rule 3. The best way to make important decisions is to take time.' [P9, Q2]

In contrast with most participants, who highlighted the practical value of the Principles, some participants questioned their connection to the real world, or noted that the Principles were nothing more than common sense:

'Most of the information was not news, though differently put. I felt the conclusions and implications were too vague.'

'I think they [the five rules] could mostly be reduced to a few snippets of fireside wisdom.' [P13, Q2]

4.4.3 Other people benefiting from the material covered

Everyone (regardless of how useful they personally found the workshop) indicated that the principles would be useful for other people.

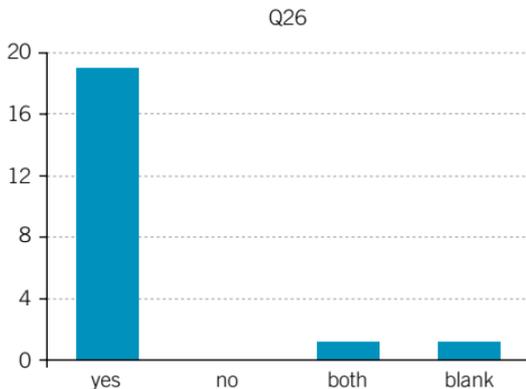
For example, Participant 24 is unsure about whether she will use the Principles from day to day, but still feels that they:

"...would be of immense benefit to school aged children from 5 years up, especially juvenile delinquents or those at risk of offending.' [P24, Q2]

This suggests at least two possibilities which are not mutually exclusive. Those participants who personally didn't think the Principles useful may possess an above-average ability to make decisions and solve problems. Alternatively, there may have been a tendency amongst them to overestimate their own ability and underestimate that of people in general.

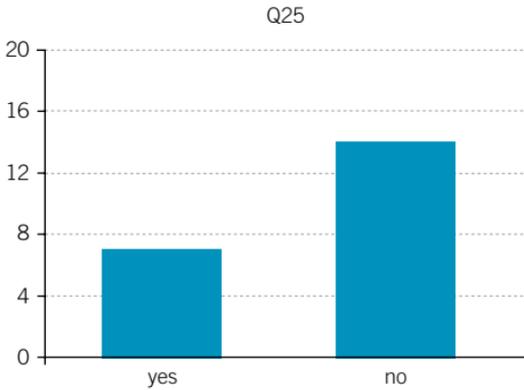
There was overwhelming support amongst participants for the Five Principles to be taught more generally.

Do you think most people would benefit from thinking about their decision-making in terms of the Five Principles?



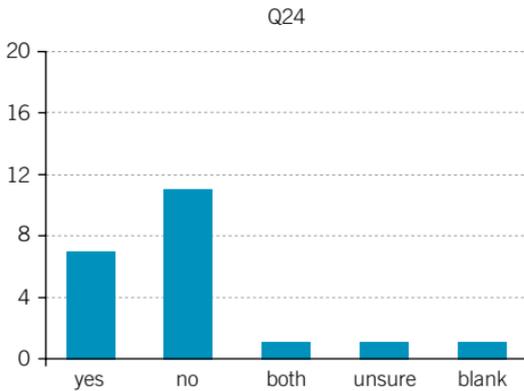
This support should be viewed against the background that the participants believed that most people do not already operate with the Five Principles.

Do you think people tend to think in terms of the Five Principles?



It should also be viewed against the background that many participants believe that on the whole British society does not support good decision-making.

Do you think British society as a whole encourages good decision-making?



4.5 RESEARCH REFLECTIONS: CONFIDENCE IN STEER

These research findings suggest that the Steer approach may have potential for enabling reflexive learning in order to empower individuals. In learning about how hard it is to change habits, how important environmental factors are in guiding them, and how incremental change through repeated effort is the best way to change them, participants were thinking in terms of Steering their behaviour both internally and externally. They seemed to find this way of thinking and feeling about guiding their behaviour very relevant to their own lives.

The other kinds of decision-making where participants experienced the biggest leaps in confidence were both self-monitoring and reflective in nature: remembering to be wary of responding to novel situations in established ways, and remembering to mull over difficult decisions. In the first kind of decision-making process, specifically cognitive abilities are brought into play, in order to reassess and think through the situation at hand. In the second kind of process the ‘autopilot’ of the automatic brain is allowed to mull over ‘all the angles’ of an important decision, although it is guided by the deliberate and controlled strategy of holding off from making a choice.

These two reflective processes involve an emphasis on (respectively) the ‘pilot’ and ‘autopilot’, or, to put it differently the ‘rider’ and the ‘elephant’. In the first the rider reins in the enthusiasm of the elephant to respond habitually to a situation. In the second the elephant wants more time to work out what to do, and the rider has to allow for this by not making a choice precipitately. The nature of

these two processes again suggests that the Steer approach is apt to enable a reflexive relationship to behaviour. In both cases it is two different kinds of internal Steer that are crucial. Moreover, the qualitative data collected from our study supports the contention that participants found that both of these reflective modes resonated with how they made their better decisions.

Although some participants clearly benefited from talking decisions through with others, there was markedly less of a rise in confidence with regard to correcting the biases of self- and future-assessing judgements, than there was with regard to changing habits, monitoring gut decisions and mulling things over.

As for feeling empowered to resist social influence, participants clearly recognised the sway other people had over their choices. The application of Principle 4 did not lead to a great rise in confidence about talking to others but this may reflect personal circumstances, such as not having anyone trusted or knowledgeable with whom to talk (several participants raised this).

It is not surprising that Principles 1 to 3 were employed more reflexively than Principle 4. A reflexive approach to guiding one's own behaviour will be less possible the further any influencing factors are from a person's agency. And it is not always within someone's gift to have around her trusted and knowledgeable people. The responses to Principle 5 revealed interesting data. The fact that few participants felt more confident about resisting social pressure after the workshops suggests this kind of resistance does not fall so squarely within the realm of agency. Perhaps participants – as

has been indicated by some of their comments – felt they could not ‘speak out and say so’ because of power structures, social pressures or personal barriers.

These last considerations may suggest the limits of the Steer approach to behaviour change. People can only be reflexive about what they can understand, and they can only be empowered to guide behaviour and environments over which they have some control. Many influences on behaviour are structural – that is, features of the context beyond the gift and ken of individual citizens. To recommend the Steer approach is not to be blind to the need for structural changes – for example, regulating or banning certain activities.

So it should be acknowledged that there are limits to the usefulness of Steer. Nevertheless, it certainly seems useful enough to be trialled in various policy areas. In the next section we examine where it might be best applied.

SECTION 5

STEERING A BETTER COURSE?

The responses from participants in our research seem to suggest a positive answer to the question of whether new knowledge about brains and behaviour is relevant and useful to people. They also seem to suggest there is scope for investigating whether a Steer approach to behaviour change might be fruitful. Below we examine a few areas in which it might be further tested.

First, though, it is worth discussing briefly the potential of reflexive interventions. When Giddens wrote about reflexivity in the 1990s he overstated people's rationality. He saw social reflexivity, that is, an awareness of the underlying principles of social organisation, as being like natural reflexivity, that is similar to an awareness of the underlying principles of, for example, memory use. But with natural reflexivity, once one becomes aware of underlying principles – such as the way memories can be deceptive – the activity that one understands changes *necessarily*. Once one's 'eyes are open', as it were, there is no going back to the naivety of a faculty of memory that is not potentially deceptive.

But social reflexivity is different. Giddens assumed that once, for example, citizens became aware of the idea that marriage was not the

only way to forge a long-term relationship, then their very understanding of marriage would change necessarily, just as the very idea of memory changes when a child learns that memory can be deceptive.

But this seems to invest people with too much reflective power: ‘a world of intensified reflexivity is a world of *clever people*,’⁵⁸ Giddens informs us. Yet this seems naïve. Whilst it is hard to escape some social reflexivity in the modern world, many people will simply either not be aware of the requisite underlying principles of an activity, or they will choose to ignore them. Giddens seems to have assumed that the average person will possess very high levels of theoretical knowledge, and will use that knowledge as an intellectually conscientious social science undergraduate might do. But reality isn’t like that.

Our research, however limited, suggests that in the area of brain science and behaviour, there is scope for reflexivity amongst citizens. Steer, as an incarnation of the Reflexive Holistic Model, could be fruitfully added to the array of behaviour change approaches.

The benefit of adopting Steer might be more effective behaviour change on the part of citizens, through handing more behavioural control over to them in a supportive setting. Just how this benefit could be realised through changes in policy and practice will be briefly examined below.

One potential problem with taking Steer into the mainstream is getting agreement on what knowledge constitutes the underlying

58 Giddens, Anthony (1994) *Beyond Left and Right — the Future of Radical Politics*. Cambridge, p7.

principles of behaviour. In the research we carried out we based the Five Principles on aspects of brain and behavioural science that seemed quite well established by evidence. But, like all science, the strength of this evidence is contestable. And even though we derived the Principles from what we understood to be the most basic facts about brains and behaviour, in the course of further research, these facts may turn out to be less important than previously thought. Any reflexive approach to behaviour change will necessarily face this problem of deciding which facts are salient.

We also recognise that the question of how to interpret and communicate the Principles derived from these facts is an open one which needs to be taken seriously and acknowledged in any reflexive approach to behaviour change. We proffer no easy solutions to it here.

5.1 A STEER FOR BETTER POLICY

Outlined below are some tentative suggestions for the application of the Steer approach in key areas of public policy.

The Steer approach could be taken into the mainstream through education.

As discussed earlier, Martin Seligman and Anthony Seldon have already taken the Reflexive Holistic Model into the mainstream through education. There is considerable resistance to their efforts amongst critics of the ‘therapeutic state’ and ‘therapeutic education’.⁵⁹ Such critics find great fault with the idea of the state teaching people how to be happy. They view such pedagogy as

⁵⁹ See for example, Kathryn Ecclestone and Denis Hayes, *The Dangerous Rise of Therapeutic Education*, Routledge (2008).

paternalistic behaviour control – the teaching of pacifying techniques intended to keep the masses quiet, or perhaps a way of papering over deep social problems.

So in the case of CBT interventions the anti-therapeutic state furore may be justified: in this case the state does in fact teach people to mollify their own behaviour, although it is not clear that this is necessarily patronising or controlling. It might just be another tool to empower young people to manage their lives. But we do not have available yet the longitudinal studies that might confirm whether CBT interventions produce capabilities in children that result in changed outcomes.

In contrast, learning about human wellbeing under Anthony Seldon's tutelage is to learn a broad array of knowledge and techniques that is expected to equip a pupil to think for herself in terms of leading a happy life. In other words, Seldon's interventions are less easily characterised as behaviour control and are perhaps more palatable as ways of empowering individuals through reflexive knowledge. Yet we cannot ignore the fact that Seldon's Wellington College school is fee-paying, which means any differences in happiness that are revealed among graduates of Wellington College may be simply due to the affluent lives they lead.

These worries notwithstanding, there may be scope to put into mainstream education a form of Steer intervention with content along the lines of the Five Principles presented here. This would give pupils a more realistic idea of how their behaviour operates, in turn potentially giving them better control over it. Our research suggests

that this kind of material is of great interest to people and makes intuitive sense to them. So educational interventions are feasible. There is also some evidence to suggest that such interventions actually improve educational attainment. Harvard psychologist Carol Dweck carried out a study where she taught pupils about how the brain works, teaching them a 'growth mindset' based on the idea of the brain's plasticity (its potential to be continually reshaped by learning and experience). She found that pupils who underwent the learning achieved higher grades and displayed improved behaviour.⁶⁰

Professions where instinctive decision-making and self-monitoring are prevalent.

The Steer approach could be used to make people more comfortable with relying on instinct, but also more aware of when to practice self-monitoring. The research presented in this pamphlet suggests people are happy to practise these ostensibly conflicting processes. Examples of such professions are the police force and social workers, and perhaps, given the financial crisis, bankers. For example, social workers need to balance intuitive psychological insights about clients with self-monitoring processes that check against such insight going awry. The Steer approach could be a useful tool for informing professional practice in social work, so that social workers are more comfortable with trusting their intuitive judgement, whilst at the same time developing skills to monitor its shortcomings.

Professions where discussing decisions is important

That is, where decisions made in the context of undue social

60 See C.S. Dweck, *Mindset*, New York, Random House, 2006.

influence, and prey to the weaknesses of self and forward-judgement, need to be put under scrutiny. Professions that suggest themselves are again social workers and the police, as well as teachers and financial workers. Structured peer-to-peer supervisory processes might be adopted in these professions, so that unrealistic or unthinking assumptions could be challenged, whilst at the same time individuals would feel supported to speak out against 'groupthink' or mistaken individual assessments. Taking the example of social work again, constructive peer-to-peer supervision might act as a check and balance to a system that allowed a larger role for intuitive judgement. This supervision would have to possess a structured format that encouraged critical but supportive discussion of judgements made. Understanding how brains naturally dispense people to be biased and indulge in groupthink could provide a neutral medium for engaging in self-criticism within a supportive setting.

Professions that deal with rehabilitation, and people that are rehabilitating themselves.

The Steer approach seems germane here due to the need to change habits, monitor impulsivity and mull over important life-changing decisions. Our research indicates that learning about how habits are driven by the brain gives people more confidence about changing them, perhaps providing a useful self-image that takes away feelings of self-loathing. At the same time it informs people about how best to change or maintain habits.

The research also indicates that the Steer approach might help people self-monitor habitual behaviour that is not appropriate in new situations. Moreover, learning to hold-off from making important

decisions and mull things over might be a useful skill to learn for people trying to initiate the life-changing decisions involved in starting the road to rehabilitation. Our research indicates that the Steer approach might be a useful way to learn the importance of ‘mulling’.

Behaviours, such as those relating to health, where habits are changed slowly.

The Steer approach seems particularly appropriate here. Changing behaviour for the sake of better health requires changing habits. Participants in our research showed a marked rise in confidence about doing this after learning about the underlying mechanisms that control behaviour. They also seemed happy to monitor their impulsive decisions. This all suggests that the Steer approach might helpfully be used to engage people in changing their own health-related behaviour. Given that participants also expressed the need for knowledgeable and trusted confidants with whom decisions could be discussed, one can imagine interventions where health professionals might play this trusted role, whilst at the same time teaching clients about the underlying principles of their own behaviour.

SECTION 6

WHERE NEXT FOR THE SOCIAL BRAIN PROJECT?

Jonathan Rowson, Senior Researcher, RSA Projects

In light of the research outlined in this pamphlet we are developing strands of work that will explore the merits and limitations of the Steer approach, and we aim to test and improve the Reflexive Holistic Model in public service contexts, including police, health and education. We will also continue to deepen and refine our theoretical account of behaviour change with particular reference to what Harvard psychologists Robert Kegan and Lisa Laskow call our 'Immunity to Change', namely the competing commitments and hidden assumptions that may act as instructive constraints on the Steer approach.

A reflexive approach to changing health-related behaviours

A recent study showed that when doctors tell heart patients they will die if they don't change their habits, only one in seven will be able to follow through successfully. It is not enough to be motivated to change; you also need appropriate context and support. Working with partners, we hope to develop a project that rigorously tests one of our (indicative) key findings: that the Steer approach can

give people greater power to improve their health by changing their habits.

Taking metacognition seriously in education

As outlined above, school pupils enjoy learning about their brains and behaviour, and such learning has a positive impact on learning outcomes. Working with partners, including the RSA Tipton Academy, we plan to embed selected metacognitive tools into particular classes, and examine the nature and extent of their transfer to other classes and to life beyond school.

Deliberative and ethnographic work with the Police

We are hoping to work with police officers to test whether the Steer approach might be a useful tool to inform their individual and collective decision-making, and improve the quality of their relationships with each other and with the public. We anticipate that this strand of work will comprise a combination of deliberative research similar to the form already used with the general public, combined with observation of participating police officers in action.

These strands of work will test the applicability of the Steer approach to both professions and behaviours. Ambitions for the future of the project also include working with social game designers to create an online game with offline elements, with a view to developing our ability to collaborate in the public interest. We also hope to disseminate our ideas with an interactive website, animation or film illustrating and exploring the core principles of brain and behaviour change.

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