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Science

New Perspectives from the Behavioural Sciences for Government Policy Making

Note of Roundtable Event on 13 June 2012

Co-sponsored by Sir John Beddington, Government Chief Scientific Adviser, the Cabinet Office Behavioural Insights Team and the Government Economic and Social Research Professions

NEW PERSPECTIVES FROM THE BEHAVIOURAL SCIENCES FOR GOVERNMENT POLICY MAKING

13 June, 2012 14:30 – 17:30

The Roundtable was co-sponsored by Sir John Beddington, Government Chief Scientific Adviser, the Cabinet Office Behavioural Insights Team and the Government Economic and Social Research Professions.

A full list of attendees can be found at [Annex 1](#).

The Roundtable Event was conducted with the anonymity of reporting allowed under the Chatham House rule. This report reflects points as discussed without attribution.

I. Welcome and introductions

Professor Jeremy Watson - Chief Scientific Adviser, Department for Communities and Local Government (Chair)

Welcoming attendees to the meeting, the Chair, Professor Watson, noted the wide range of behavioural science disciplines, including the neurosciences, represented at the table and the value these different perspectives would bring to the Roundtable discussion. Apologies were given from Sir John Beddington, the Government Chief Scientific Adviser (GCSA) who was unfortunately unable to attend.

2. Why the behavioural sciences are important to Government

A view from the Co-sponsors

The Chair invited the Co-sponsors to offer brief views on the importance of the behavioural sciences, to government policy making.

The Co-sponsors thanked the GCSA for initiating the Roundtable and noted that in the current climate there was ever more need to develop imaginative approaches to policy making. It was crucial that evidence and insights from the behavioural sciences made an effective contribution to policy making. Behaviour change thinking had been gaining increased traction across Government with Ministers increasingly interested in the application of evidence from the behavioural sciences (including the social sciences) to policy making and delivery.

In addition, the Co-sponsors emphasised the need for government to continue raising its game on testing and evaluating interventions so that it can really understand what works, and if something does not work, why it does not.

3. Smart Disclosure – Insights from the behavioural sciences from the US

Professor Richard Thaler, Professor of Behavioural Economics, Chicago Booth School of Business

Professor Thaler spoke about the Smart Disclosure initiative in the US describing it in the context of Behavioural Economics and also its links to the US National Action Plan for Open Government. Professor Thaler explained how this initiative was marrying modern technology (such as smart phone applications) with increasing access to private and public sector data to help consumers make more informed and more optimal choices.

Professor Thaler described the economics categorisation of individuals as 'Humans' or 'Econs': 'Econs' choose rationally while 'humans' may fail to choose optimally. Professor Thaler also emphasized the importance of 'making it simple' and explained how Smart Disclosure provided 'humans' with information to allow them to make optimal choices (like econs) in an easy manner. Consumers were being given the ability to very easily upload their own energy usage data to third party websites (choice engines) which could then help them pick the best rate.

4. How can recent developments in the neurosciences help government's understanding of behaviour change interventions now and in the future?

This session consisted of four short presentations to set the scene for a roundtable discussion exploring the implications of recent developments in the neurosciences for Government's understanding of behaviour change interventions now and in the future.

Presentation by Professor Vincent Walsh, Professor of Human Brain Research, Institute of Cognitive Neuroscience, University College London

Professor Vincent Walsh spoke about some of the opportunities and challenges of applying evidence from the neurosciences to existing theories of human behaviour including:

- Uncertainty about the precise function of individual brain regions.
- Applying findings from research performed largely on individuals or specific groups to populations.
- The need for improvements in the way neuroscience research is communicated to the public, including how the research community articulates uncertainty.
- The need to consider the purpose of new research - sometimes scientists are simply adding another level of explanation to an issue that is already understood (e.g. explaining behaviour in terms of the brain instead of the person).

Professor Walsh went on to identify the areas where he felt the neuroscience community could add value:

- Supplementing evidence of existing theories of human behaviour with neuroscience evidence of brain function. For example, research into the cognitive reserve of elderly individuals in their 70s and the implications this can have on retirement age.
- Aligning findings from brain imaging research with existing behavioural economics theories.

Presentation by Professor Paul Fletcher, Bernard Wolfe Professor of Health Neuroscience, University of Cambridge - 'Human Behaviour: Insights from Neuroscience'

Professor Fletcher spoke about the contribution of neuroscience to our understanding of the underlying mechanisms of pleasure, reward and habitual and goal-directed behaviours. He provided an overview of the dopaminergic system and its role in reward and pleasure behaviour and described the brain as a highly sensitive predictive organ that is more active towards pleasurable reward.

Professor Fletcher went on to illustrate how habitual and goal-directed behaviours can be modified by changing environmental cues, goals and/or associations.

He closed by emphasising how evidence from observations of the brain needs to be embedded alongside traditional behavioural science studies carried out on robust samples of the population. In concert, these different disciplines can help better understand human behaviour.

Presentation by Professor Usha Goswami, Professor of Cognitive Developmental Neuroscience, University of Cambridge - 'Neuroscience, Behaviour and Child Development'

Professor Goswami introduced her presentation by saying that neuroscience evidence on its own is not enough. Professor Goswami identified some of the key factors important in child development: cognitive skills (language, memory, attention) "non-cognitive skills" (persistence, self-regulation, pro-social skills), education and wellbeing. She continued by giving an overview of the role neuroscience can play in helping to understand the underlying mechanisms of development, in particular, how the brain learns, perceives and processes language. For example, neuroscience has provided insights into how the brain processes speech which can be implemented into cognitive prosthetics, such as cochlear implants for deaf children. Early implantation results in language development similar to that achieved by the hearing brain.

Professor Goswami went on to describe how neuroscience can also help understand the optimal environments for learning and the mechanisms underlying learning difficulties, such as dyslexia and how these insights have contributed to the development of individualised training packages, such as games software, aimed at improving reading, memory and attention. While these games have been shown to be effective, research suggests that their efficacy is dependent on an individual's genotype and/or personality type and on social reinforcement.

Professor Goswami concluded by highlighting some of the social factors that influence emotional and social development in early childhood (e.g. face-to-face interaction) and wellbeing (e.g. consistency of warmth of care-giving and communicating with children using rich/complex language). She emphasised that these factors vary more across home learning environments than the factors affecting cognitive development, hence early environments can have lifelong effects on social/emotional brain development.

Presentation by Professor Theresa Marteau, Director of the Behaviour and Health Research Unit, University of Cambridge - 'Newish Perspectives from Behavioural Sciences for Changing Behaviour in Populations'

Professor Marteau spoke about how human behaviour is shaped by two systems: the 'reflective' and the 'automatic'. The reflective (slow) system is based on reasoning, requires high cognitive capacity and is driven by intention. Traditional efforts in health promotion have targeted this system, for example, through the provision of information designed to change attitudes. In contrast, the automatic (fast) system is based on prior associations, does not require cognitive capacity and is triggered by stimuli in our environment. Changing behaviour in populations requires the development of interventions targeting automatic processes, deliverable at a population level.

In the context of strategies designed to prompt healthier behaviour, Professor Marteau described three approaches by which the automatic system can be influenced:

- Constraining behaviour by changing the environment e.g. food packaging and portion sizes;
- Activating or inhibiting existing impulses - unhealthy behaviour can be primed through advertisements; and
- Altering existing associations e.g. removing negative associations (e.g. low fat food labels) from healthy foods and replacing them with positive associations (e.g. celebrity endorsements).

Professor Marteau concluded by emphasising the importance of replication of studies as well as evidence synthesis.

There then followed a lively roundtable discussion on the appropriate role for neuroscience evidence for government education policy:

- Participants discussed the evidence supporting critical or sensitive periods for child development, brain plasticity and life-long learning and what this meant for government education policy. The view was expressed that while the early years are critical foundation years and set the way that an individual will develop they are not the end of the story and there is always scope to intervene later in life. However, evidence indicated that the early learning environment is extremely important not only for learning but for all round development - trying to change maladaptive systems that are formed early is very difficult, as plasticity is not unlimited. It was also important to recognise that while the way we learn as we get older changes this should not mean that adults who want to learn are not able to. This is particularly important in the light of demands for a more flexible workforce.
- A lively discussion followed as to what the evidence indicated about the right allocation of funds to education across the lifecycle and the trade-off between funding early and lifelong learning. There was also a discussion of the potential for government to 'nudge', with incentives for the private sector to develop innovative solutions e.g. the computer games industry, TV programme makers etc, to play more of a role in education.
- This discussion concluded with a call for the behavioural science research community to better engage with this debate and to communicate what they know on the likely impact of learning interventions at different stages of the lifecycle, more effectively.

The discussion then moved on to a wider discussion of a range of issues relating to developing, testing and evaluating behaviour change interventions:

- There was an acknowledgement of the value of using real world experiments to help understand what works and what does not. It is important to harness and learn as much as possible from real world situations. The example was then given of the effectiveness of a positive reward system - whereby employees with no sickness absence over a set period were automatically entered into a competition - that had been very effective in reducing absence compared to more traditional systems that focus on dealing with those with high sickness absence.
- The benefits of engaging members of the public, who are directly impacted by a particular issue, in developing solutions was emphasised.
- The important role that long-term economic modelling and statistical evidence can play in government policy making was mentioned, for example, to determine the real world outcomes of investment in early learning.

- Finally, there was a call for better exchange of data between the private sector and government. There is a lot of data held by the private sector (e.g. by the insurance industry) that could be helpful to government policy making.

5. Perspectives from David Willetts, Minister of State for Universities and Science, on the importance of the behavioural sciences

Welcoming this event, David Willetts highlighted the importance of understanding behaviour in order to develop sound public policy, particularly in a world where resources are tight and policy making is inevitably about trade-offs. Picking up on the earlier discussion about the role of neuroscience evidence on development in early years had played in public debate on education policy and allocation of funds, he emphasised how important it is for the external behavioural science community to input to government policy making and to challenge government decisions if they believe they are not based on evidence or based on partial evidence.

He concluded by challenging the behavioural science community to further engage with government and communicate what they know more effectively.

6. How the neurosciences and behavioural sciences more generally have been applied in the advertising and marketing world

Presentation by Professor Nick Chater - Associate Dean and Professor of Behavioural Science, Warwick Business School

Notwithstanding the large amounts spent on market research, companies still have only limited understanding of what drives consumer behaviour. Professor Chater also commented that the private sector does not tend to do robust experiments.

Professor Chater spoke about the importance of understanding how people perceive the environment they live in and how this can influence human behaviour and decision making. Using the retail sector as an example, he suggested that supermarkets do not have a feel for whether their customers think they are cheap, good quality or good value. Supermarkets tend to drive prices down and quality up in order to attract customers even though research has shown that prices have little effect on consumer behaviour compared with other non-price factors. Instead, other environmental factors such as tidiness, range of products, number of people in the store and a car park can have a

bigger effect on customers' perception of value for money. Supermarkets often do not get these things right.

The amount of crime in an area may be judged in the same way. People do not see crime in a particular area but they may perceive a particular environment as associated with high crime rates. Professor Chater suggested that Government should consider bringing basic design principles to these sorts of policy challenges as these have a behavioural basis. He touched upon design principles, such as the need for the right level of control and information and the significant impact that critical touch points and interactions (small changes) can have on desired outcomes.

Professor Chater concluded by reminding the table that the public vary and are not a homogeneous group. This needs to be kept in mind when designing products and behaviour change interventions.

Presentation by Rory Sutherland - Vice Chairman, Ogilvy UK

Speaking from an advertising perspective, Rory Sutherland started by saying that the marketing function in companies is not as powerful as people might think. This linked to the point made by Professor Chater about the lack of a scientific basis for many of the decisions being made in the private sector.

A lot of private sector companies continue to work on the basis that people are 'econs' or should be. An assumption of rational economic theory can be a common enemy.

He also reiterated the point made by Professor Chater that there is sometimes disproportionality in effect – small things can have a big effect but large things do not necessarily lead to large changes. A company might deploy considerable resources into working on the 'big idea', and then, overlooking its significance, leave the design of a key letter to junior employees.

Rory Sutherland then threw a few suggestions out to the table:

- Make it easy e.g. the idea of encouraging saving by having a large 'impulse' button on a phone to allow people to save with the touch of a button.
- Keep it simple e.g. diets cutting out certain foods might be easier for people to stick to than those based on careful calorie counting.
- Dare to be trivial.

- The best solution might be counter-intuitive.
- The best solution might not be rational. Government policy solutions need to appear rational but this might not always be in keeping with the way the brain works and people behave. At this point Rory Sutherland gave the example of advice on drinking and the use of alcohol unit guidelines - advice to people which makes sense but which is cognitively difficult to follow is often a bad idea. He commented that it might be better to have a system that, for example, tells people not to drink for 3 days a week and that asks people to make the decision not to drink when sober rather than when they have had a drink.
- The importance of public perceptions e.g. Transport for London's introduction of screens to show when trains are due to arrive had more impact on perceptions of performance than speeding up the trains would have done.
- We must have the courage to test oblique interventions which are not always intuitively obvious. For instance removing the white lines in the middle of the road reduces speeding. But testing this is far harder to justify than an intervention using standard "economic" incentives, such as speed cameras.

7. How architecture and design have been used to influence behaviour

Presentation by Professor Rachel Cooper, Professor of Design Management and Policy, Lancaster University - 'Design, Behaviour and the Environment'

Professor Cooper introduced her presentation by saying how designers have always needed to take account of behaviour either in understanding cause or in determining what to do and how to improve things. As mentioned by previous speakers, she also reiterated the point about understanding the relationship between people and their environment.

Professor Cooper then presented case studies illustrating how active design has been used to design out crime. These included:

- **The Design Against Crime Programme** - a national research and policy initiative looking at ways of reducing crime through design and design education.

- **The Regeneration of Hulme Park, Manchester** - Hulme Park was notorious for muggings, burglary, robbery and poor housing. The park was redesigned to make it open, welcoming and more secure using psychological rather than physical barriers. These included building new housing facing on to the park, partly to give residents a good view and partly to increase the sense of security; and cutting small water-recycling trenches which also serve to stop bikers riding at high speed across the park.
- Redesigning the location and orientation of Automated Teller Machines to deter credit card fraud and theft.
- Professor Cooper concluded by emphasising the importance of the design process as well as the design outcome using the example of a successful project which had involved local offenders in creating design ideas to prevent crime in crime hotspots.

Presentation by David Kester - Design Council

David Kester presented 3 case studies illustrating how successful design has influenced behaviour. These included:

- **Design Bugs Out** – a project that had been successful as a result of bringing both a behavioural and a multi-disciplinary approach to the problem of infection control which has been a source of concern to the NHS. This project brought together designers and manufacturers with clinical specialists, patients and frontline staff to help combat infections by making hospital furniture and equipment easier and quicker to clean. The designs that were developed aimed to help reduce Healthcare-Associated Infections (HCAIs) by positively influencing behaviour which reduces their transmission and further improving cleaning practices. The designs included an ‘intelligent’ mattress which changes colour when it becomes compromised by body fluids.
- **Preventing violence and aggression in Hospital Accident and Emergency Units** – incidents of violence and aggression in A&E are common however as highlighted by previous speakers, some small changes to design and peoples’ experiences can have a big impact. By redesigning and simplifying signs and clearly articulating waiting times, this project had reduced incidents of violence and aggression in A&E with a small, relatively low cost intervention.
- David Kester’s final case studies presented the ‘**Ode**’ a device that emits the fragrance of cooked food to stimulate appetite and prevent weight loss in dementia patients.

A brief discussion followed presentations on the use of the behavioural sciences in the advertising and marketing world and on the role of design in behaviour change. This discussion primarily focussed on the role of Randomised Control Trials (RCT's) in government:

- Although the gold standard for testing and understanding what works, the observation was made that RCTs are not necessarily quick and can be costly. The suggestion was made that, if made more open, existing private and public sector data could be used to test and understand what works. At this point a representative from the Cabinet Office Behavioural Insights Team highlighted publication of a paper 'Test, Learn and Adapt' on the use of RCTs in government policy making¹. The team's representative emphasised the need for increasing use of RCTs in government and that they can be much simpler and cheaper to put in place than is often supposed.
- There was a further acknowledgement of the appetite in Government for greater engagement with the academic community on the behaviour change agenda.

8. Closing Remarks

Professor Watson closed the event by thanking speakers and participants for their engagement with this event and for a rich and informative discussion. The Roundtable had shown the value of bringing together different perspectives from across the physical sciences, the social sciences and the behavioural sciences. A recurring theme of the afternoon had been the need for ever more engagement between the academic behavioural science community and government. This is already happening, Professor Watson gave two examples: a new initiative in the Department for Communities and Local Government looking at the role of design and engineering in influencing human behaviour outcomes involving behavioural researchers, designers and engineers; and the Foresight Future of Identity project which is looking at some of the issues that have been explored today. But, there is a need for greater interaction between the government and the behavioural science academic community.

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¹ Test, Learn, Adapt: Developing Public Policy with Randomised Controlled Trials (2012) is available [here](#).

Annex A - List of Attendees

	Richard Bartholomew	Chief Research Officer, Department for Education and Joint Head of Government Social Research Service
Professor	Paul Boyle	Chief Executive, Economic and Social Research Council
	David Carew	Government Head of Psychology Profession and Chief Psychologist, Department for Work and Pensions
Professor	Nick Chater	Associate Dean and Professor of Behavioural Science, Warwick Business School
Dr	Jennifer Cook	Research Associate, Department of Psychiatry, University of Cambridge
Professor	Rachel Cooper	Professor of Design Management and Policy, Lancaster University
Professor	Cary Cooper	Distinguished Professor of Organisational Psychology and Health, Lancaster University
Dr	Claire Craig	Deputy Head of the Government Office for Science
	Sarah Dowling	Centre for Outcomes Research and Effectiveness (CORE), Research Department of Clinical, Education and Health Psychology, University College London
	Stephen Dubner	
	Stephen Elderkin	Deputy Director Analytical Decision Support, Department for Business Innovation and Skills
	Rebecca Endean	Chief Scientific Adviser and Departmental Director of Analysis, Ministry of Justice
Professor	Paul Fletcher	Bernard Wolfe Professor of Health Neuroscience, Department of Psychiatry, University of Cambridge
Professor	Uta Frith	Emeritus Professor of Cognitive Development, Institute of Cognitive Neuroscience, University College London
	Ed Gardiner	Design Council
	Andrea Garman	Government Office for Science
Professor	Usha Goswami	Professor of Cognitive Developmental Neuroscience, Department of Experimental Psychology, University of Cambridge
Dr	Sunjai Gupta	Head of Public Health Strategy and Social Marketing Branch, Health Improvement and Protection Directorate, Department of Health
Dr	David Halpern	Director, Behavioural Insights Team, Cabinet Office
	David Johnson	Head of Profession for Social Research, Government Economic and Social Research Team, HM Treasury
	David Kester	Chief Executive, Design Council
	Trevor Llanwarne	Government Actuary, Government Actuary's Department
Professor	Theresa Marteau	Director of the Behaviour and Health Research Unit, University of Cambridge
	Jil Matheson	National Statistician and Head of the Government Statistical Service
	Christine McGuire	Research and Development Directorate, Department of Health
Dr	Mark Nassar	Government Office for Science
	Robyn Polisano	Joint Head of Social Science Research Unit, Food Standards Agency
	Dachi Rasmussen	Government Economic and Social Research Team, HM Treasury
Dr	Stuart Sarson	Government Office for Science
	Owain Service	Deputy Director, Behavioural Insights Team, Cabinet Office
Professor	Bernard Silverman	Chief Scientific Adviser, Home Office
Professor	Rod Smith	Chief Scientific Adviser, Department for Transport
	Rory Sutherland	Vice Chairman, Ogilvy Group UK
Dr	Lili Tcheang	Research Fellow, Institute of Cognitive Neuroscience, University College London
Professor	Richard Thaler	Professor of Behavioural Science and Economics, University of Chicago Booth School of Business
Professor	Vincent Walsh	Professor of Human Brain Research, Institute of Cognitive Research, University College London
Professor	Jeremy Watson	Chief Scientific Adviser, Department for Communities and Local Government
	Dan Wellings	Head of Public Health Research and the Behaviour Change Unit, Ipsos MORI
Rt Hon	David Willetts MP	Minister of State for Universities and Science
	Teresa Williams	Chief Social Researcher, Ministry of Justice

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