STRENGTHS AND LIMITS OF BEHAVIOUR CHANGE TO FOSTER THE GREEN TRANSITION

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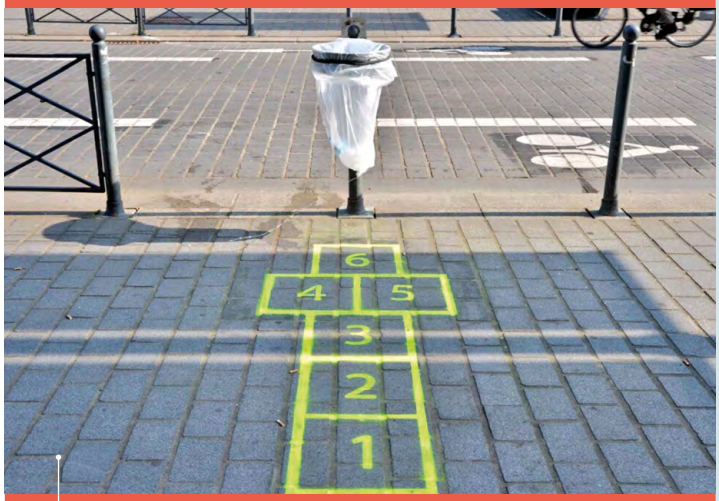

Example of nudge to encourage people to throw their waste (Lille, France).

Liam is Director and co-founder of BehaviourWorks Australia (BWA) and one of Australia's leading authorities on behaviour change. Liam holds a Bachelor of Science (Resource and Environmental Management) from the Australian National University, a Master of Ecotourism from James Cook University, a Master of Philosophy and PhD from Monash University. With a brief to bring behavioural experts together with government and industry to find solutions to real-world sustainability problems, Liam's research initially focused on the areas of water, energy, waste, litter, pollution, climate change adaptation and wildlife conservation. Since then, Liam has been directly or indirectly involved in conducting over 500 behaviour change research projects across a wide range of industries and sectors. Liam is on the executive of the Monash Sustainable Development Institute. He has published numerous research reports, research papers and public discussion pieces.

Behavioural approaches increasingly tend to be seen as one of the "go-to" approaches when it comes to solving environmental issues: to address energy and water consumptions, improve agriculture practices, preserve biodiversity, reduce GHG's emissions, etc. Behavioural interventions are more efficient when people get messages at multiple levels, as highlighted by the example of the "Millennium Drought". However, behavioural approaches should be paired with other instruments, such as regulatory or structural reform, and collaboration between behaviour change scientists, institutions and governments should be encouraged. Additionally, behavioural sciences could be used to diagnose systems, and focus on encouraging behaviour spillover, to reach a lasting impact.

Aerial view of Sydney suburb. Residents are asked to paint roofs white and plant a tree in each garden to fight climate warming *(EPA-EFE)*.

Over the last decade, an increasing focus has been put on the importance of human behaviours to achieve the green transition. Consequently, more and more behavioural experimentations aim at addressing sustainability issues. How do you account for this increasing popularity of behavioural sciences and the role they can play to accelerate the green transition?

Liam Smith: The increasing focus on behavioural sciences to tackle sustainability issues should be understood as part of the broader history of behavioural sciences' role in public policy. In this regard, a few milestones can be highlighted. The publication of the book *Nudge* in 2008, written by economist and Nobel Laureate Richard H. Thaler, and Law Professor Cass Sunstein,[1] certainly contributed to reinforce the interest and appetite for behavioural sciences within public opinion and public actors. However, it is not until the creation of the Behavioural Insights Team (BIT) in 2010, within the UK Cabinet office, that behavioural sciences and approaches began to directly influence and inspire public policies. One of BIT's first behavioural sciences-based intervention aimed at increasing tax payments by using "descriptive norms" – e.g., making people aware that most people do pay their taxes on time –, and proved to be quite effective. Those initial convincing results gave BIT a stronger license and ability to apply this perspective to more and more areas. Furthermore, the realisation that behaviour change is, *per se*, at the core of governments' missions meant that behavioural sciences have gained traction within public bodies, and this paved the way for the birth of multiple "nudge units" around the world.[2]

Regarding the use of behavioural sciences to address sustainability-related challenges, even though the last couple of years have seen an acceleration, this originated a decade ago as well. For instance, one of the BIT's first experimentations aimed at increasing loft insulation installation, by designing specific incentives – in this case, offering people a low-cost labour to clear their lofts prior to insulate them.

In this context, behavioural approaches increasingly tend to be seen as one of the "go-to" approaches when it comes to narrowing down complex challenges, including environmental issues and we've seen a significant rise in the use of behavioural science in this area. Among many, behaviour change tools are being used to encourage reductions in household energy and switching to green energy choices, water consumption, donations to green charities, environmental volunteering and lobbying for policy changes.

1 Richard H. Thaler and Cass R. Sunstein, *Nudge. Improving Decisions about Health, Wealth and Happiness*, Yale University Press, 2008.

2 For a more comprehensive view of nudge units, see OECD, *Behavioural Insights and Public Policy. Lessons from around the world*, 2018.

One of the concerns with this approach is that for governments, behavioural experimentation can bring a lot of added value because they do not require significant financial, social, or political capital investment, and offer quick solutions to complicated challenges. In this sense, green behavioural change programs have been criticised because of the short-term thinking that can accompany them.

Which are the areas in which behavioural sciences have achieved significant results so far? Could you present us with a concrete example?

L.S.: To begin with, marketing is a fairly good example of successful behavioural interventions! In a way, we, as individuals, have been nudged forever even if we do not always notice it.

If we focus rather on public goods behavioural interventions, an obvious example is the ongoing management of the pandemic. Since the beginning of the surge, behaviour change "toolkits" have been at the core of the responses implemented by governments around the world – from floor markings to encourage social distancing in subways or stores to incentives-based vaccination campaigns in some countries.

Regarding sustainability issues, one of the examples I find the most interesting and insightful occurred in Townsville, a city located in Queensland, a State in the northern part of Australia where the weather is subtropical and thus very warm. As part of the Community Energy Efficiency Program (CEEP), the city initiated a reflection to identify which behaviours could be implemented to reduce households' energy consumption and greenhouse gases' emissions. Ultimately, the team came up with a list of 240 behaviours, divided in various sub-sections – equipment (double glazing, solar panels, etc.), maintenance, habits behaviours (lowering heating temperatures, spending less time in the shower, etc.). The remaining question therefore was: where should we focus our attention? Which behaviour should we prioritize? To answer it, two assessment criteria were considered: the impact of the behaviour, in terms of energy savings, and the likelihood that the target audience would perform the behaviour. Based on this, the behaviour of "having the roof painted white" turned out to be selected – as it offered many advantages: well-recognised way to reduce energy demand in the home, not technically onerous, "one-off" behaviour, etc. The whole city therefore rallied around this "cool roofs" objective: people could buy roof paint in the hardware store next door, small businesses supported by the government offered support to promote services to paint roofs white. The result was that most roofs got painted in white.

This initiative provides us with a clear example of how behaviour change approaches and interventions can be applied as part of a thought-through strategy, with significant and lasting impact. In this case, two elements proved to be key: making the behaviour the easiest and cheapest possible for people.

Have you identified other key success factors for behavioural interventions to succeed?

L.S.: The most successful behaviour changes to address significant issues are, actually, not the product of "single-interventions" (which academics like to study), but rather suites of interventions where people are able to get messages at multiple levels. Of note, if the public discourse highlights a particular issues and this is aligned to interventions targeting specific related behaviours, they have a much higher chance of success.

For instance, in the context of the pandemic, nudges aiming at encouraging people to wash their hands, or to flash their QR code after being in a certain place, have a stronger chance of being effective in the context of a global pandemic than in 2019, prior to COVID – as they coexist with large-scale social marketing campaigns, financed by public institutions, insisting on COVID-related measures.

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Another great example is provided by the "Millennium Drought" (1996-2010), a water crisis which touched large parts of Australia and lasted over a decade, placing extreme pressure on agriculture production and urban water supply. During these years, wide-scale campaigns were regularly run to highlight water shortages – from helicopters flying over empty dams to newspapers' frontlines publishing water levels, "naming and shaming" the worst suburbs regarding water consumption. There was a clear discourse on water consumption and the importance of water savings. In this context, targeted behaviour change campaigns were more effective at encouraging Australians to adopt particular water saving behaviours such as only watering gardens at certain times, taking shorter showers and buying water-efficient appliances.

If you are able to influence both individual and macro-level scales, interventions are more likely to succeed. Similarly, a campaign that promotes public discourse but doesn't include single-behaviour interventions is less likely to achieve lasting impact.

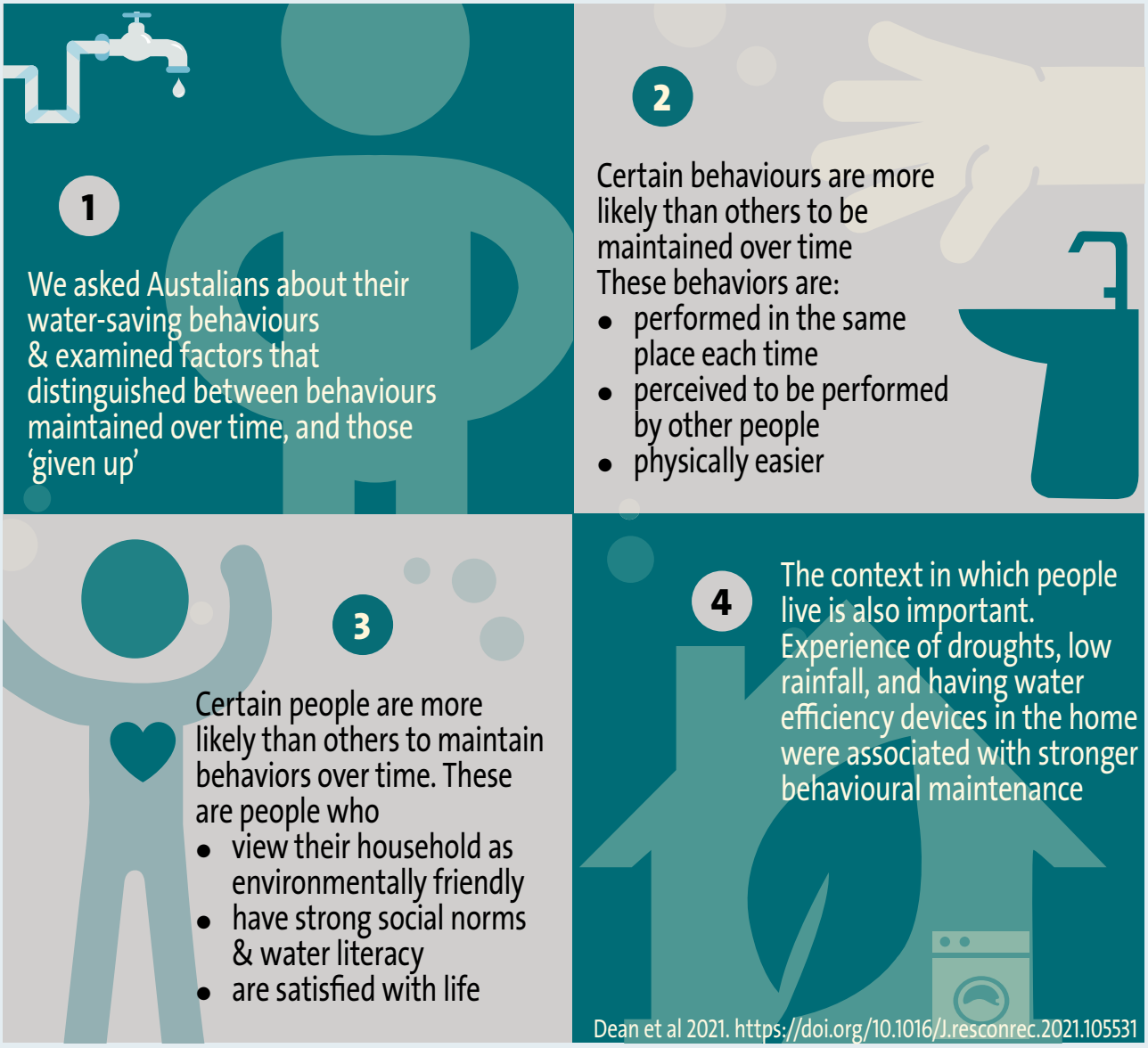
Of course, there are many behaviour change tools that have been successfully used to change behaviour. The two that readily spring to mind are the use of descriptive norms (telling people that numerous others are doing desirable behaviours) which has been shown to work in multiple contexts and the use of defaults which, where implemented, have repeatedly been shown to work.

When considering 'success', one additional key element worth discussing is the appetite for experimentation. In general, the behavioural science movement has been at least partially responsible for encouraging the use of experimental designs to test whether particular interventions are effective at changing behaviour. Experimental approaches to public policy are, as much as the introduction to behavioural science, a key contribution to changes in how governments, in particular, operate.

However, there isn't always the opportunity for these approaches. For instance, coming back to the Millennium Drought, the lessons for behavioural science from the drought weren't captured. Two elements account for this. First, as the country was undergoing a major crisis, solutions needed to be designed and implemented quickly, which didn't leave much time for testing. Second, besides this context of crisis, the appetite for experimentations

What drives maintenance of water-saving behaviours?

Results from a national survey of 4,872 Australians.



Source: Angela J. Dean, Sarah Kneebone, Fraser Tull, Nita Lauren, Liam D. G. Smith, "'Stickiness' of water-saving behaviours: What factors influence whether behaviours are maintained or given up?", in *Resources, Conservation and Recycling*, n°169, June 2021.

– like randomized controlled trial – was much lower. Behavioural sciences weren't on governments' agenda yet. Consequently, a lot of interventions got implemented without building in experimental designs. Looking back at the drought and the response, we can say that collective water consumption reduced significantly across much of Australia, but it is not possible to attribute this drop to specific behaviours.

That said, some interesting insights were identified after the crisis. In a recent paper, some colleagues and I tried to identify which factors influence whether water-saving behaviours are maintained or given up.[3] It appears that different behavioural, individual, and contextual characteristics influence behavioural maintenance. For instance, people who view their household as environmentally friendly, and have strong social norms and water literacy, are more likely than others to maintain behaviours over time.

Fortunately, it is therefore feasible to learn valuable insights after the episode of crisis. Nonetheless, it is essential to support the interest and appetite for experimentations, which is equally important than strengthening behavioural sciences' role in public institutions.

Regarding the ongoing transition, in which areas do you believe behavioural sciences could offer the most promising results in the years to come?

L.S.: The appetite for behaviour change grows continuously, throughout the whole environment spectrum: to address energy and water consumptions, improve agriculture practices, preserve biodiversity, reduce GHGs' emissions... Behavioural sciences can contribute to all these challenges. At BehaviourWorks Australia, most of our current research focuses on one of these issues.

But as suggested earlier, there's some caution to this approach. In a way, it is sometimes concerning to witness stakeholders turning "too easily" towards behaviour change, to address challenges which would be better solved through other instruments such as regulatory or structural reform. In certain cases, notably regarding climate change-related issues, we shouldn't necessarily ask individual citizens to be the solution without governments and institutions also playing a strong role.

As fighting climate change is to be one of the dominant issues of the public discourse in the upcoming years – if not decades –, even though COVID strongly disrupted this trend, one key success factor will therefore be to foster collaboration between institutions, governments and behaviour change scientists. How do we make sure different stakeholders work together to be more efficient?

This is going to be one of the most important challenge to tackle in the upcoming years. Behavioural sciences have a role to play, but it is important to ensure that actors from all levels come together if we want to achieve the required changes.

In which direction should behavioural-focussed approaches evolve to tackle sustainability challenges more efficiently?

L.S.: Sociology traditionally describes human behaviour as shaped by two dimensions: **structure** – the recurrent patterned arrangements which influence or limit the choices and opportunities available: physical structures, laws, policies, institutions etc. – and **agency** – the capacity of individuals to act independently and to make their own free choices.

By focusing primarily on the agency of individuals, many behaviour change experiments may achieve small changes... but let's take an example of an intervention that successfully changed 20% of the audience regarding a specific behaviour, which in most circles would be seen as a success. However, at least some of the reasons why the remaining 80% did not change may be attributable to structural barriers. For example, imagine a program aimed at encouraging carpooling as a solution to carbon emissions and congestion. This program might increase the occupancy rates in cars which would be seen as a success. But by doing so, the program inadvertently keeps supporting the infrastructure of roads, and ultimately

3 Angela J. Dean, Sarah Kneebone, Fraser Tull, Nita Lauren, Liam D. G. Smith, "'Stickiness' of water-saving behaviours: what factors influence whether behaviours are maintained or given up?", in *Resources, Conservation and Recycling*, n°169, June 2021.

delays the problem of cars' carbon emissions. In a way, by celebrating the change, we avoid changing the more complex issues – laws, policies, institutions, etc. This is one of the early criticisms addressed at behaviour change as the sole focus of policy responses, depicted as an alternative solution to more important, structural changes.

I believe three points could help behavioural sciences to cope with these criticisms.

- First, behavioural sciences could be used to **diagnose systems**. This would mean shifting our attention on understanding why the 80% did not change, and identifying where the structures have the most influence, and prevent people to act as free agents.
- Second, behaviour change interventions should focus on the behaviours which are the most **sensitive to systems** and / or can be used to leverage systemic change and we ought to put a lot of energy into identifying behaviours to foster. Using the example above on carpooling, a better behaviour would be to encourage people to work from home. While carpooling sustains the system, working from home takes permanent pressure off it. This preliminary reflection is crucial.
- Finally, behavioural interventions should consider how to encourage **behaviour spillover** (how engaging in one positive behaviour affects the probability of engagement or disengagement in a second related behaviour). Indeed, individual changes, through spillover, can lead to more broader policy change and increased pressure on decision makers to do things differently. For instance, if I work from home, I might want to make my house more energy efficient, and eventually support political parties backing those measures. While there's an emerging literature on spillover, early research shows that identity increases the likelihood of spillover to occur, meaning we should think about how to foster environmental identities alongside choosing impactful, system sensitive behaviours.[4]

At BehaviourWorks Australia, we gather researchers from different academic backgrounds, and work on advancing those different ideas. There is no doubt that behaviour change approaches raise legitimate hope and expectations. However, it should be seen as one element belonging to a larger set of solutions needed to achieve the green transformation.

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Some observers argue that an equal focus should be placed on individual and organizational change, as organizations have a greater impact in terms of carbon emissions. How do behavioural insights apply to organizations? How different are individual and organizational incentives?

L.S.: Most of BehaviourWorks Australiaresearch focuses on individuals. However, several of our PhD students also study organizational behaviour, and specifically look at the nexus between individuals and organizations' behaviours.

One of our key learnings is that organizations often have similar motives to individuals. The theory of planned behaviour,[5] one of the models most commonly used in behaviour change, sometimes proves to be even more relevant and predictive for organizations than individuals. According to this theory, a human behaviour is the product of:

- **Attitude** – the degree to which the person has a favourable or unfavourable evaluation of the behaviour –: organizations, like individuals, tend to adopt the behaviours they judge positively.
- **Perceived Norm** – the perception about whether most people approve or disapprove of the behaviour, and about the customary codes of behaviour within the group –: organizations, like individuals, adopt certain behaviours because they feel pressured to do so, from consumers, stakeholders, governments, etc.
- **Perceived Behavioural Control** – individuals' beliefs about their capacity – the skills and knowledge to adopt the behaviour – as well as their beliefs about opportunities to perform the behaviour: organizations, like individuals, adopt certain behaviours because they have the resources to do so and opportunities are available.

Organizational change is with no doubt a topic worth studying in more depth, even more so as discrepancies between how organizations behave and how individuals do tend to widen, resulting in negative outcomes such as burnout and frustration for individuals who work within them.

4 See also: Lauren, N., Smith, L.D.G., Louis, W.R. and Dean, A.J. (2019) "Promoting spillover: How past behaviors increase environmental intentions by cueing self-perceptions.", *Environment and Behavior*. 51(3): 235-258. https://doi.org/10.1177%2F0013916517740408. Lauren, N., Fielding, K.S., Smith, L.D.G. and Louis, W. (2016). "You did, so you can and you will: Self-efficacy as a facilitator of spillover from easy to more difficult environmental behaviour.", *Journal of Environmental Psychology*. 48:191-199. https://doi.org/10.1016/j.jenvp.2016.10.004.

5 I. Azjen, "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, vol. 50, n°2, 1991. See also: the "COM-B" model (Capacity, Opportunity, Motivation Behavior) in Michie, Stralen, West, *The behavior change wheel*, 2011.