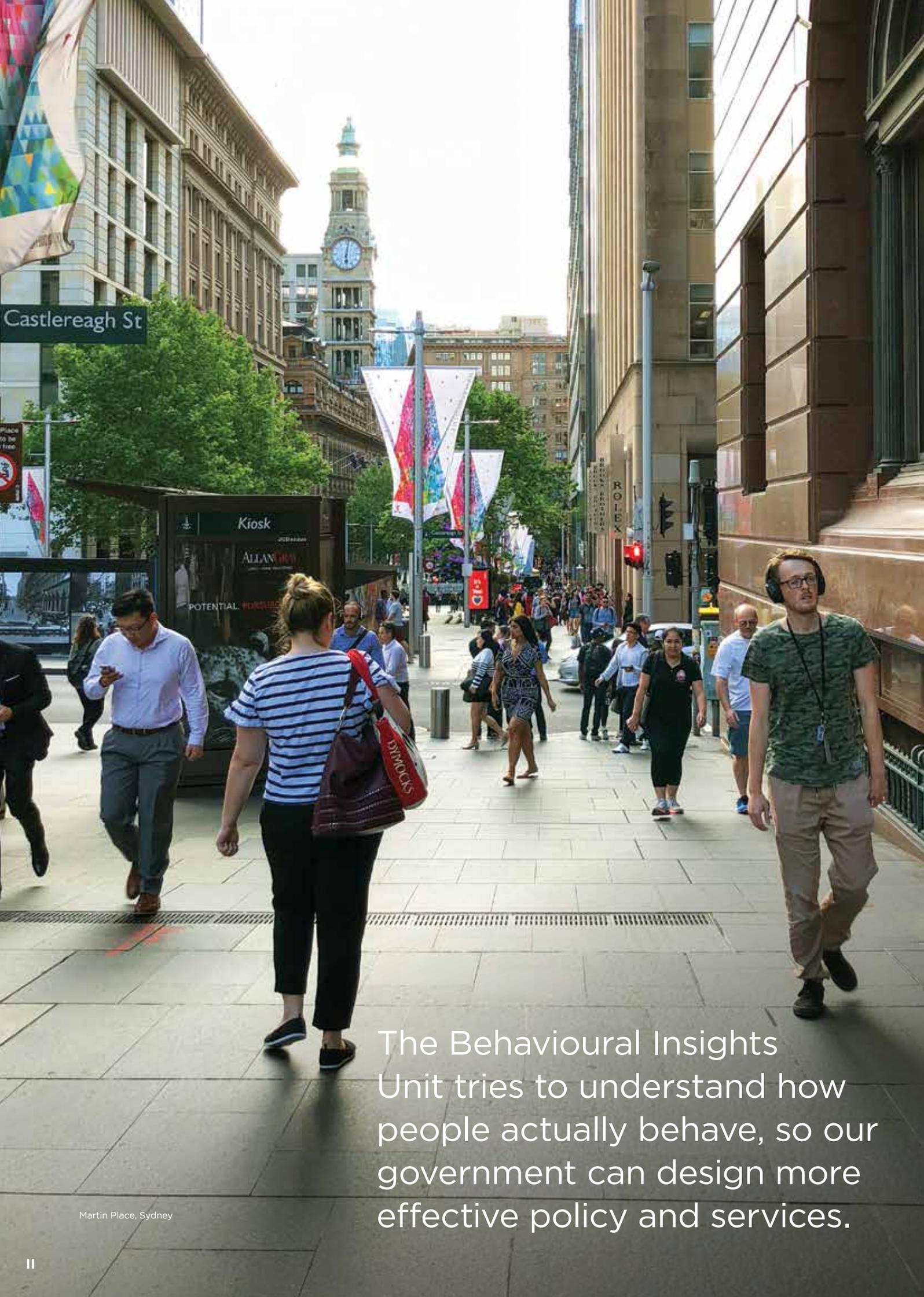


The Behavioural Insights Unit Report

April 2018





The Behavioural Insights Unit tries to understand how people actually behave, so our government can design more effective policy and services.

Commissioner's message

Australians value innovation and take pride in delivering results, and both these qualities are reflected in NSW's own Behavioural Insights Unit (BIU).

Not only was the BIU Australia's first government team embedding behavioural insights in policy, it has also made its mark in the behavioural insights arena globally.

Launched in 2012, the BIU focuses on complex problems such as domestic violence, childhood obesity and criminal reoffending. Broadly speaking, the unit's mission is to better understand behaviour surrounding fundamental issues, and to get insights into how, why and when people make the choices they do.

In turn, this helps to deliver more effective services in NSW.

Delivering better results for the people of NSW is our priority, and over the past six years the BIU has achieved good results and developed a stronger evidence base.

Principles of behavioural insights continue to be embedded in government processes, supporting our ongoing development of policies and programs to make meaningful differences in the lives of the people of NSW.



A stylized, handwritten signature in white ink, consisting of a large 'G' and 'K' with a flourish.

Glenn King

NSW Customer Service Commissioner



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Achievements



01

What we learnt

BIU 'snapshots'

Here are the key results from seven of our recent trials testing behavioural insights.

See more details inside.



23% reduction in domestic violence court non-attendance using SMS reminders

Domestic violence court attendance

Improving the rates at which defendants attend court freed up court and police resources – **page 13**



Significantly fewer people commuted during peak hour when encouraged to take up flexible working

Flexible hours and commuting

Organisations can consider using workplace policies to encourage employees to have more comfortable commutes to work by avoiding peak hour – **page 18**



3x more trainee teachers opted to take a rural or remote placement after receiving messages about the opportunity

Rural teacher trial

It can be challenging finding skilled employees to move to rural NSW, but behavioural insight techniques helped promote the benefits, with triple the number of teaching students applying for rural practical placements – **page 23**



Apprentices were **3 percentage points** more likely to attend class when their employers received a text message about their studies

More apprentices in class

Engaging employers in their apprentice's learning via text messages is beneficial to class attendance – **page 27**



A clearer fine letter encouraged **more people** to pay their fines on time. Additionally, fewer people received additional fines for late payment

Paying littering fines

Improving the layout of fine letters makes them easier to understand and pay. It also reduces the likelihood that people will be given a fine for late payment – **page 31**



Revised letter **did not increase** rates of community response about a new land-use plan

Community consultation responses

Following the revision of a community consultation letter for a land-use plan, the online survey response rate did not increase. But including pictures did encourage more free-text answers among respondents – **page 36**



Improved attendance in the Go4Fun® childhood obesity reduction program **did not increase** health outcomes

Childhood weight issues

While the Go4Fun® program itself was effective, the BIU enhancement that increased attendance did not deliver an additional benefit – **page 42**

NSW Behavioural Insights Unit



02

What are behavioural insights?

We know only too well from our own lives that we often fail to do what is best for ourselves, despite good intentions — whether it be through exercising regularly, saving money or eating healthily. This common tendency has important implications for public policy.

Behavioural insights draw on behavioural sciences including behavioural economics and psychology to help us understand how people act and make decisions in everyday life. By focusing on the social, cognitive and emotional behaviour of individuals and institutions, behavioural insights suggest that subtle changes to the way decisions are framed and conveyed can have big impacts on behaviour.

Importantly, 'real life' behaviours are often quite different from behaviours assumed in standard economic models. As a result, behavioural insights help us design public services and policies in ways that complement people's actual behaviour.

In turn, this helps all of us make better decisions for ourselves as well as our society.



We enhance the lives of the people of NSW by using behavioural insights to improve the effectiveness of public services and policy.

About us

The BIU works across the NSW Government to help improve the effectiveness of public services and policy by applying what we know about the way people think and act.

BIU sits within the NSW Department of Premier and Cabinet (DPC) and was established in 2012 in collaboration with the Behavioural Insights Team. We collaborate with international and Australian academics as well as with the Behavioural Insights Team (Australia).

We take an empirical approach, collecting and analysing a large amount of data to glean our insights, and developing an evidence base. This means much of our time is spent developing and running trials to determine what works before supporting a wider rollout of successful interventions.



Running trials

Wherever possible, we apply the ‘gold standard’ of evidence, which is the randomised controlled trial (RCT). RCTs allow us to test the effectiveness of an intervention, by comparing the results of an intervention against what would have happened in a situation if nothing had been changed. We randomly allocate participants into an intervention group or a control group (the ‘business as usual’, or BAU, group). This ensures that any potential biases are minimised through randomisation, and we can be confident that any statistically significant difference between the groups is caused by the intervention.

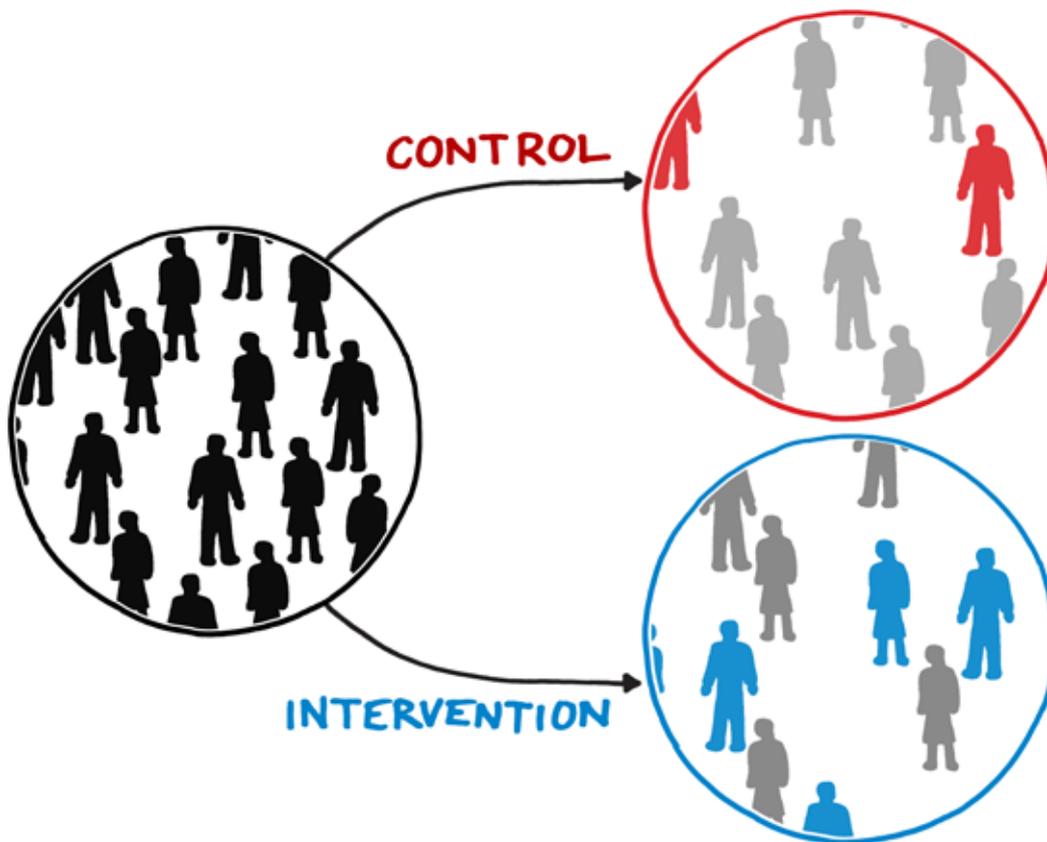
However, it is not always possible to run a gold-standard RCT. In these cases, we use other evidence-based approaches, such as before-and-after studies.

Other services

As well as developing and trialling improvements to services, we advise agencies about incorporating behavioural principles into their programs and policies.

Maintaining integrity

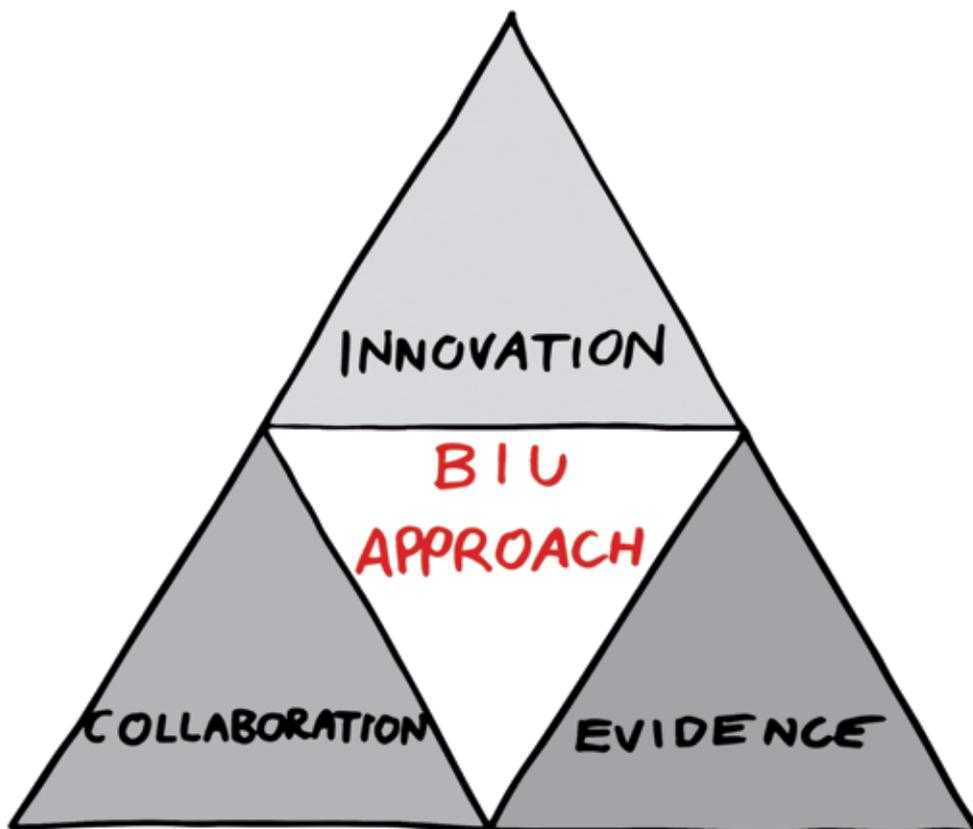
All our research and evaluation activities undergo a process of ethical review in line with Australian Standards set by the National Health and Medical Research Council. This is important to ensure that any potential risks or ethical, privacy and consent issues that could affect trial participants are fully understood and mitigated before any work is done.



Our approach: innovation, collaboration, evidence

BIU's approach combines three elements:

- **We develop and apply innovative interventions** to improve public policy and services, both breaking new ground and drawing on exciting new developments from other jurisdictions.
- **We are highly collaborative**, working in partnerships with government agencies, academics, NGOs and the private sector. We also spend time in the 'field', to get a better idea of how to improve government services from the people who deliver frontline services every day.
- **Our work is strongly evidence-based**. Drawing on what works globally, we use the most rigorous approaches, often employing gold-standard RCTs, to determine 'what works' before scaling up.



Our methodology: understand, build and test

BIU projects work through three iterative phases:

1. Understand the issue and context

We identify exactly what behaviours we want to change and then try to develop a good understanding of the context, drawing on our own fieldwork, analysis of available data, and the relevant literature.

2. Build insights and interventions

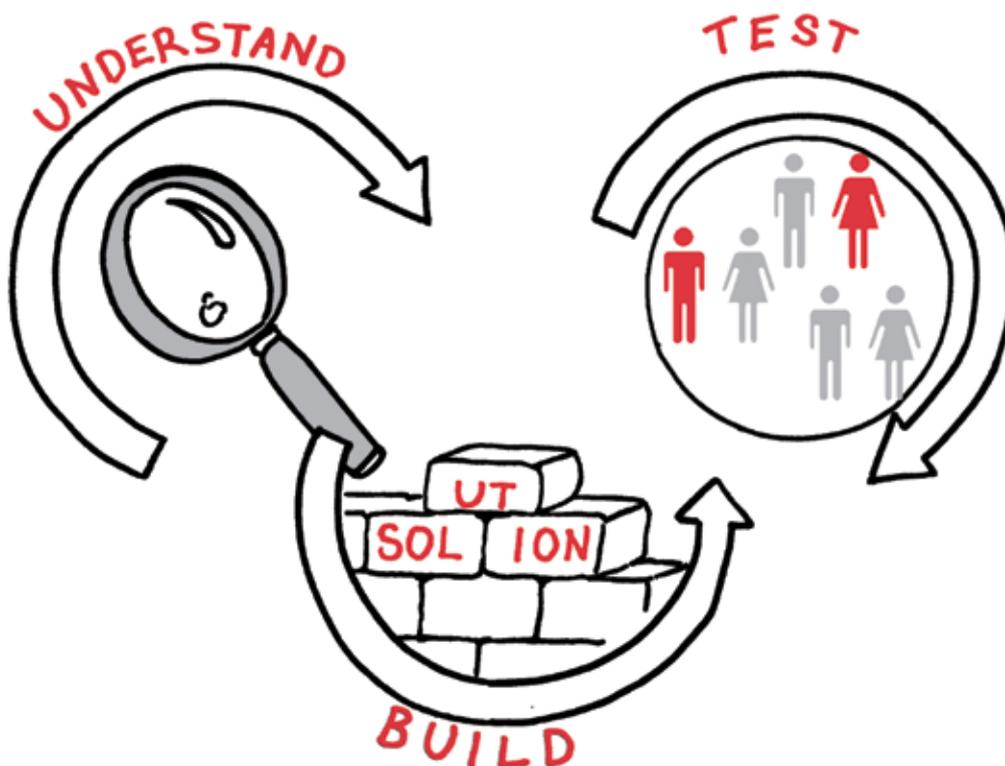
The design of our interventions is an iterative and collaborative process.

We draw on the results of our 'Understand' phase and behavioural frameworks to develop insights about the behavioural bottlenecks and enablers. Informed by this, we co-design an intervention with our partners.

3. Test, learn, adapt

We use the most rigorous methodology we can (often RCTs) to determine whether the intervention works.

Based on this, we can further refine and improve the intervention, or scale it up more widely.



Advisory work

As well as designing and running trials, we also provide advice to a wide range of NSW Government agencies on how to apply behavioural insight principles in their work. This is typically in areas not suited to running trials, such as in the early phases of policy development or where there are significant practical barriers to trialling potential interventions.

Some examples of our recent advisory work include:



Health

- Improving mental health patient safety by helping nurses better monitor wards



Planning and Environment

- Applying behavioural insights principles to better communicate new biosecurity regulations in regional and peri-urban NSW
- Reducing illegal clearing of Australian native vegetation in a south-western area of Sydney



Family and Community Services

- Improving processes to reduce unnecessary applications for the Working with Children Check in NSW
- Advising on the national women's participation strategy, encouraging women to return to work after maternity leave



Finance, Services and Innovation

- Assisting the NSW Ombudsman to improve its online complaint-handling process and public-interest disclosure website

Our results



03

Overview

Since the BIU was established in 2012, we have run trials across health, public housing and return-to-work, as well as taxes and fines. This section of the report outlines what we have worked on since our last report was published in 2016, and some of our key learnings.

Across the trials reported here, we tested a range of behavioural interventions. The table below sets out some of the key behavioural insights terminology used.

Terminology: descriptions of key behavioural insight terms	
Avoided loss/ loss aversion	People dislike losses more than they like equivalent gains. Loss aversion refers to our tendency to try to avoid losses.
Ambiguity effect	People are reluctant to make decisions if the outcome is unclear or ambiguous. People prefer options for which they know how likely they are to get a favourable outcome.
BAU	'Business as usual' (BAU) is how we refer to the control group in a trial, that is, the group of people not included in the intervention group.
Cluster RCT	A cluster RCT is a type of randomised controlled trial in which groups of subjects, rather than individuals, are randomised to receive intervention or remain in the BAU group.
Commitment	People can be encouraged to make commitments and like to be consistent with their previous commitments. Reminding people of their commitments or using commitment devices (ways to encourage people to keep their commitments) can encourage people to do what they have said they will do.
Friction costs	Small, seemingly irrelevant details can make a task more challenging or effortful. Removing friction costs can make it easier for people to complete a task or change their behaviour.
Gain framing	People can react differently to a particular message or choice depending on how it is presented. Gain-framed messages highlight the benefits of a particular behaviour, as opposed to loss-framed messages, which highlight the risks.
Goal setting	When we make a plan to do something, we are more likely to follow through on it in the future than if we just hope to do it. Goal setting can help people make concrete and specific plans, including identifying barriers they might encounter and how they will overcome them.
Incentives	People sometimes act in a certain way just because they want to (intrinsic motivation), but sometimes our behaviours are driven by a desire for external rewards (extrinsic motivation). The way a reward, or incentive, is structured and presented can influence behaviour.

Terminology: descriptions of key behavioural insight terms	
Information asymmetry	When making a decision, we may not have all the information we need to make a fully-informed choice. Information asymmetry refers to situations when one party in a transaction has more or better information than the other.
Messenger effect	People are influenced by the messenger as well as the message itself. It is important to take into consideration the way and by whom a message is communicated to fully understand the impact of the message.
Reciprocity	When someone does something for us, we can feel obligated to return the favour. If a person feels like they have received something, reciprocity can be used to influence their behaviour.
Saliency	People are more likely to respond to information that is novel, simple and accessible. Bringing important information to people's attention and presenting it in a salient way can have a strong influence on behaviour.
Social comparison	We determine our own social and personal worth based on how we compare to others. We do this generally in a variety of contexts, but also may make specific comparisons in specific contexts, such as competitions or contests.
Social norms	We are strongly influenced by what others do. Social norms are the values, actions and expectations of a particular society or group. Making people aware of what most other people do can encourage them to follow suit.
Statistical significance	Statistical significance is the probability of some result from a statistical test occurring by chance. Generally, we look for a probability of 5% or less, which means a 95% chance the results are not due to chance. When you read that the results of a trial were statistically significant, it means that you can be at least 95% sure the results are not due to chance.
Status quo bias	People are biased to prefer things to stay the same or stick to the status quo. Any change from the status quo is perceived as a loss.

Trial 01

Domestic violence
court attendance



Improving domestic violence court attendance

Reducing rates of domestic and family violence in NSW is a Premier's Priority. To address this complex behavioural problem, we worked with the Department of Justice to improve court attendance for recipients of Apprehended Domestic Violence Orders (ADVOs).

In order to do this, we used an RCT to test the efficacy of a text message to improve court attendance. Out of a large pool of defendants, one group was randomly selected to receive SMS reminders for their upcoming court attendance. The other BAU group did not receive them. We compared the groups to see if the SMS improved court attendance.

Results showed the SMS was effective in improving court attendance. The intervention group had a significantly lower court non-attendance rate of 13.5%, compared to the BAU group's non-attendance rate of 17.6%, a relative decrease of 23%.

Background

Domestic violence imposes huge personal and societal costs on our community. In 2017, 30 people died as result of domestic violence in NSW. This represents 40% of total homicides during the same period.¹ Reducing domestic violence reoffending is one of the NSW Premier's Priorities.

Since 2014, BIU has partnered with the Department of Justice to test the application of behavioural insights to address the complex behaviour of domestic violence reoffending. Central to this effort have been initiatives aimed at increasing compliance with ADVOs. Following the implementation of the Plain English ADVO in 2016, BIU shifted its focus to the ADVO life cycle, looking at ways to improve compliance with ADVOs through greater engagement with court processes.

Under NSW law, police or a person can seek protection from domestic violence by applying to court for an ADVO. Once an application is made, the defendant is required to appear

before a magistrate to determine if a final ADVO should be made. If the ADVO application is contested, the defendant may be required to attend court on multiple occasions to have the matter heard. During this process, the police or the magistrate will usually issue an interim order before a decision is made on whether to issue a final order.

Defendant engagement with the court process is an important part of enabling judicial efficiency and expediting protection for victims. On average, 18% of domestic violence defendants do not show up to their ADVO listing. Not attending court can impact court and police resources and may cause additional stress for victims. For example, when a defendant does not show up to court, the matter may be adjourned, leading to additional court listings.

By attending court, perpetrators might better understand and agree with ADVO conditions.

1. NSW Bureau of Crime Statistics and Research (2018). NSW Crime Mapping Tool; source data BOCSAR 2017. Accessed from: <http://crimetool.bocsar.nsw.gov.au/bocsar/> on 22 March 2018

What we did

BIU partnered with the Department of Justice and the NSW Police Force to run an RCT to determine whether text message reminders improve court attendance, and reduce breaches and reoffending.

The trial was a two-pronged RCT design:

- BAU — no reminder SMS was sent to defendants.
- Intervention — this group received a reminder SMS the day before their court appearance.

It was implemented across five local courts — Bankstown, Blacktown, Fairfield, Mt Druitt and Toronto — from 30 May 2016 to 1 January 2018.

Our total sample size (BAU and intervention) was 4,388 ADVO recipients who had 8,314 court appearances. Altogether, 49% of people were in the intervention group, and 51% were in the BAU group. Of our entire sample, 83% were men and 11% were Indigenous.

While the primary aim of the trial was to reduce court non-attendance, we were also interested to see if the intervention could have an impact on reducing breach rates and reducing domestic violence reoffending.



What we learnt

Court non-attendance decreased

We found that the SMS reminder produced a significant increase in court attendance. Individuals who received an SMS prior to their court appearance were, on average, four percentage points more likely to attend their court appearance.

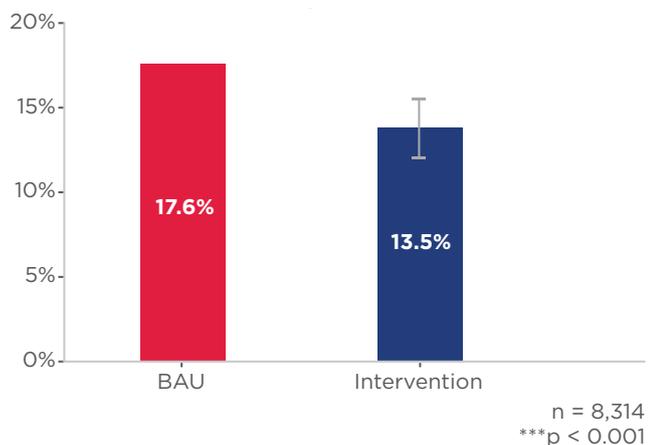
Individuals in the BAU group failed to attend court 17.6% of the time, compared to the intervention group where people failed to attend only 13.5% of the time. This corresponds to a 23% relative decrease in non-attendance ($p < 0.001$).¹

Court efficiency improved

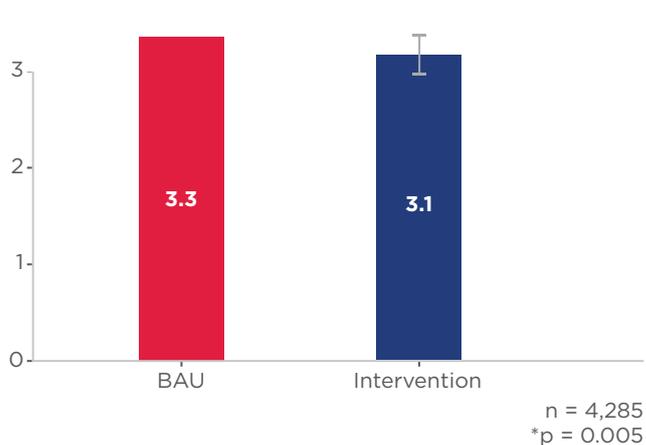
There was also a significant reduction in the average number of court listings that were scheduled for each defendant. The BAU group had an average of 3.3 appearances, compared with the intervention group, where the average case had 3.1 appearances ($p = 0.005$).

Additionally, we observed that the reminder caused a significant reduction in the time taken to finalise each court case. In the BAU group, it took cases 74 days on average to finalise, compared with 69 days in the intervention group ($p = 0.049$).²

Percentage of ADVO recipients who did not attend court on their court date, by condition



Number of court listings scheduled for each ADVO recipient, by condition



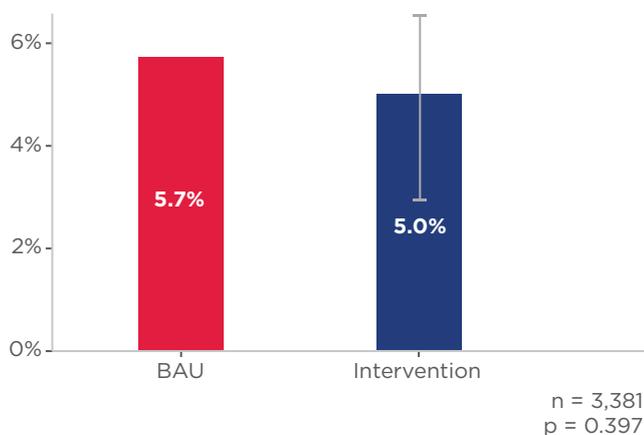
1. The sample size for each of the analyses below differs, depending on data availability. For example, we have court appearance data on 4,285 individuals, but breach and reoffending data on 3,381 individuals. This discrepancy is due to a number of individuals not being observed in the data for 180 days, as well as differences in how data collection operates at courts and in the police systems.

2. Note: A limitation of this data is that we are not able to differentiate between cases where a defendant receives an ADVO and also has an associated charge (for example, an assault). This means that the time-to-finalisation value reflects a mix of people who just have an ADVO and those who have an ADVO and an associated charge.

No significant change in domestic violence reoffending

We also observed a modest difference in domestic violence reoffending between the two groups. In the BAU group, 5.7% of individuals committed another domestic violence offence within six months of their court appearance, compared to the intervention group, where 5% reoffended. However, this difference is not substantial enough to be deemed statistically significant ($p = 0.397$).¹

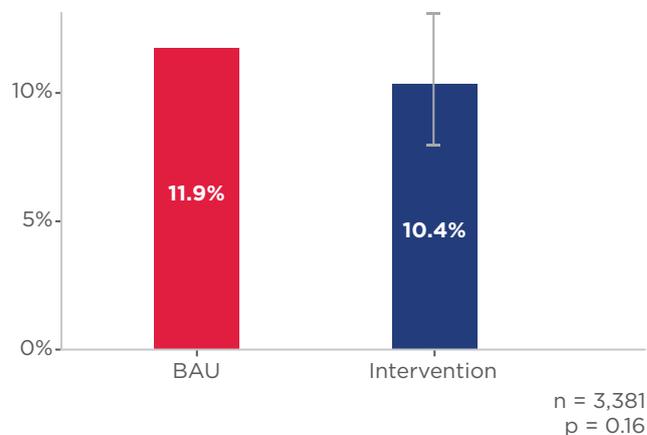
Domestic violence reoffending rates within 180 days of court date, by condition



No significant change in ADVO breach rates

Similar to the reoffending rate, we observed a slight difference in breach rates within six months. In the BAU group, the breach rate was 11.9% compared to 10.4% in the intervention group. Again, this difference was not statistically significant ($p = 0.16$).

ADVO breach rates within 180 days of court date, by condition



1. Note that the sample size for this group is slightly smaller than for the other analyses, as we had to wait for 180 days to elapse before we could look at 180-day outcomes. Not everyone in our sample has been in the trial for 180 days, so we have a slightly reduced sample.

Next steps

When data is available, we will retest whether there has been an impact on reoffending and/or ADVO breaches within a 12-month period.

We are currently working with the Department of Justice to scope options for potential applications of the intervention, and possibly a further trial to test whether alternative forms of behaviourally informed messaging can further improve court attendance for domestic violence defendants.

Trial 02
Flexible work
hours



Flexible work hours and commuting

Sydney's roads and trains are becoming increasingly congested in peak hours, giving rise to the NSW State Priority of improving road travel reliability. To help find solutions to this issue, we examined whether it was possible to shift some commuters' travel times out of the peak hour.

To do this, we developed a trial working with two government agencies - Transport for NSW (TfNSW) and DPC.

The aim was to encourage DPC staff members to travel to and from work outside of the peak hours of 8.15 am to 9.15 am, and 4.45 pm to 5.45 pm. The trial was a demonstration project and part of a NSW Government initiative called Travel Choices, which worked with businesses during the construction phase of major transport projects in Greater Sydney.

The trial successfully encouraged employees to use existing flexible work policies. As a result, morning arrivals outside peak times increased by 8.6 percentage points.

Overall, the trial resulted in 550 additional instances per month where DPC team members avoided commuting to and from work during peak hours.

Background

We hoped to encourage DPC staff members to modify their habitual commuting behaviours and avoid travelling to and from work in the peak hours. We did this by encouraging take-up of DPC's existing flexible work policy.

We were trying to change this behaviour for several reasons:

- Individuals could have greater autonomy in choosing when to come to work, which has the added benefits of increased satisfaction with their workplace, and potentially more efficient and comfortable commutes.
- For organisations, having more employees take up flexible work policies can help increase workforce satisfaction, improve the organisation's attractiveness to new recruits, retain staff and reduce turnover.
- For government, this helps to spread the demand for public transport that peaks at particular hours of the morning and evening. It also demonstrates that behavioural approaches can work to smooth transport demand.

What we did

We changed workplace defaults that had encouraged employees to work the standard 'nine to five', by disrupting informal workplace culture and norms on workplace flexibility. We also incentivised teams to try either arriving earlier and leaving earlier, or arriving later and leaving later.

Three interventions were co-designed with TfNSW.



Outlook calendars

Normally, Outlook calendars show staff as available or 'active' from 8 am to 5 pm. We adjusted the default settings for 'active hours' on all staff Outlook calendars to reflect DPC's standard core hours of 9.30 am to 3.30 pm.



Manager messages

DPC staff enter the building through electronic turnstiles which record each person's entry and exit times. Data from the turnstiles showed that employees tended to match the working hours of their directors, over and above their line managers and the rest of the senior executive. As such, BIU and DPC Human Resources showed the directors this data, and prompted them to speak to their teams about flexible work. We used behavioural insights to improve existing corporate resources, making them easier to access and understand, and thereby reducing frictions and information asymmetry.

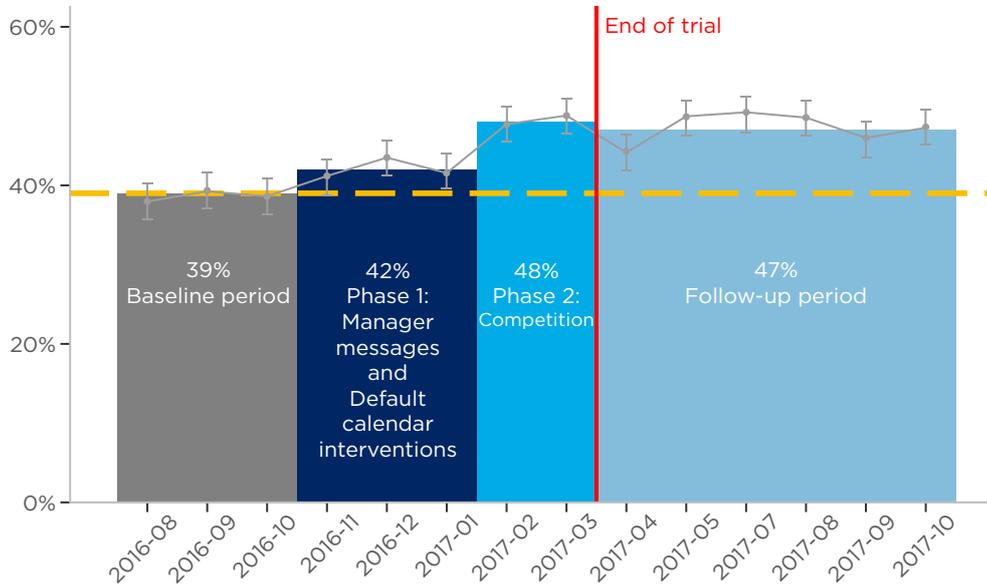


The competition

We ran a team-based competition in the workplace to encourage staff to avoid peak-hour travel. The aims were to encourage them to adjust their commuting behaviour and try other forms of flexible work such as working remotely. The competition incorporated several behavioural insights elements, including social comparison, social norms, and incentives through competition points and a competition prize. There was performance feedback through a competition leaderboard that showed each team's ranking in comparison to other DPC teams.

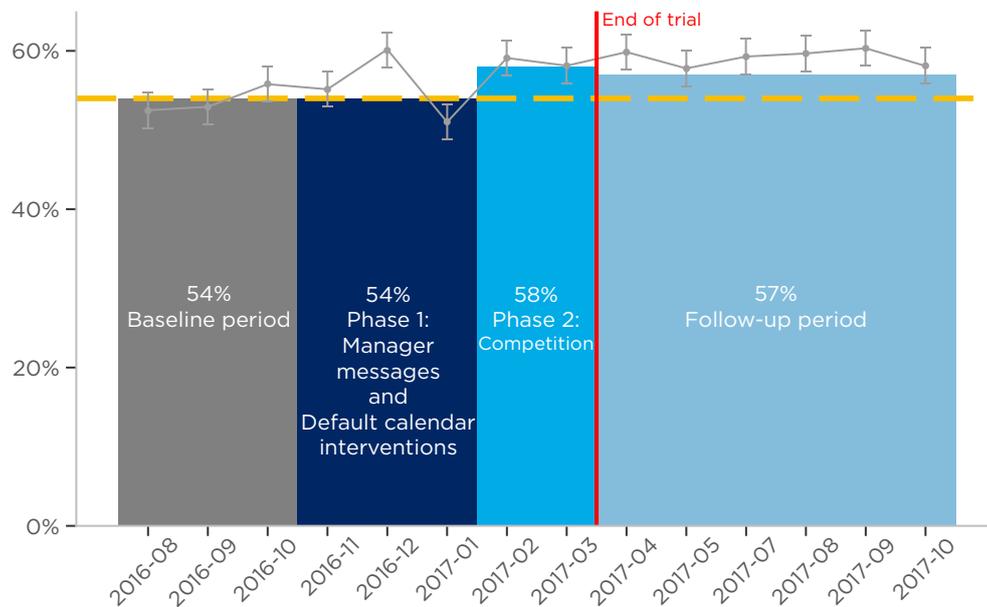
What we learnt

Percentage of good entry by month: Aug 2016 to Oct 2017



*No data for June 2017

Percentage of good exit by month: Aug 2016 to Oct 2017



*No data for June 2017

Good entries and exits are those that fell outside peak times of 8:15 am to 9:15 am in the morning, and 4:45pm to 5:45 pm in the evening.

Six months after the trial ended, we analysed turnstile data and found that:

- The proportion of work arrivals outside peak hours had increased 8.6 percentage points, compared to the baseline ($p < 0.001$). This is equivalent to 411 instances of DPC staff avoiding the peak hour in their commutes to work each month.
- The proportion of work departures outside peak hours had increased by 3 percentage points compared to the baseline ($p < 0.001$). This is equivalent to 143 instances of DPC staff avoiding the peak hour in their commutes from work each month.
- The results were more noticeable among women. Although both women and men were responsive to our interventions, the impact was particularly pronounced with female staff. It is likely the competition had a legitimising effect on women's preferences for flexible work behaviour.

Next steps

Lessons learnt:

- A key innovation was to demonstrate that behavioural insights can be applied to shift strongly resilient and habitual commuter behaviour, via the indirect mechanism of workplace levers. This is a world-first.
- Both private- and public-sector organisations were struggling to institute real change in the culture of workplace flexibility. Many major Australian employers had recognised the benefits of flexible work to the individual and the organisation, and had introduced formal workplace policies. However, informal culture still needed to catch up — including challenging informal workplace norms.

Next steps:

- BIU unsuccessfully sought private-sector partners to test similar behavioural insights interventions to increase flexible work and/or shift commuter behaviour in 2016–17.
- Trial interventions and results were published in the *Harvard Business Review* in November 2017¹, as a mechanism to influence private-sector leaders to try out behavioural approaches to improving workplace flexibility.
- DPC will identify additional, targeted products to assist NSW Government agency clusters to learn from, and try out, interventions from this trial, improving the take-up of flexible work practices and contributing to the NSW Premier's Priority of increasing diversity across NSW Government.

1. Wiryakusuma, C; Chai, H; King, A; & Pointer, G, 2017, 'How we nudged employees to embrace flexible work', *The Harvard Business Review*, journal article, 3 November 2017, viewed 8 January 2018 [<https://hbr.org/2017/11/how-we-nudged-employees-to-embrace-flexible-work>]

Trial 03
Rural teacher
placements



Trainee teachers accepting rural placements

It can be challenging to find skilled employees in rural and remote NSW. For metropolitan professionals, the decision to relocate can be a complex one, even if it's only on a temporary basis.

This is true also for graduating teachers. Attracting teachers to rural and remote NSW is an ongoing challenge for the NSW Department of Education. However, teachers are more likely to work in rural schools if they completed a rural placement during their training.

We took the first step — getting more trainee teachers to take placements in rural areas — in collaboration with the Department of Education and several NSW universities, including the University of Wollongong (UOW) and Macquarie University. By using timely and personalised prompts, we tripled application rates for rural placements among UOW students.

Background

While trainee teachers at UOW and Macquarie University are told about rural placements in general communications about the teaching placement process, the vast majority of trainee teachers do not apply. They are assigned by default to an available school closest to where they live.

With our trial partners at the Department of Education and four universities, we tested whether behavioural insights could encourage trainee teachers to undertake a practical teaching placement at a rural school.

Our fieldwork investigated factors that contributed to placement preferences.

We found:

- younger teachers are more mobile, and
- parents play an important role in trainee teachers' decision-making.

In many teaching degrees, the advantages of a placement close to home are more salient than a rural placement. Trainee teachers can be deterred because they do not know what to expect from a rural placement, have little time to consider the opportunity, and face additional administrative processes to apply for a regional placement through their university.

What we did

When asked to make a decision under time pressure or uncertainty, people tend to favour options that they know more about (ambiguity effect), and can be deterred by additional steps in a process (friction costs), thereby tending to stick with defaults (status quo bias).

We ran two different trials with two universities in 2017, seeking to increase applications for rural placements by simplifying the process and making the opportunity and advantages salient.

Our BAU groups received only the general communication about teaching placements, which briefly discussed rural placements. Our intervention group received the set of personalised and timely prompts.

We worked with UOW's School of Education to simplify the application process for all trainee teachers, by replacing the paper-based application with a partially pre-filled online form, while also increasing the number of rural schools that could be nominated.

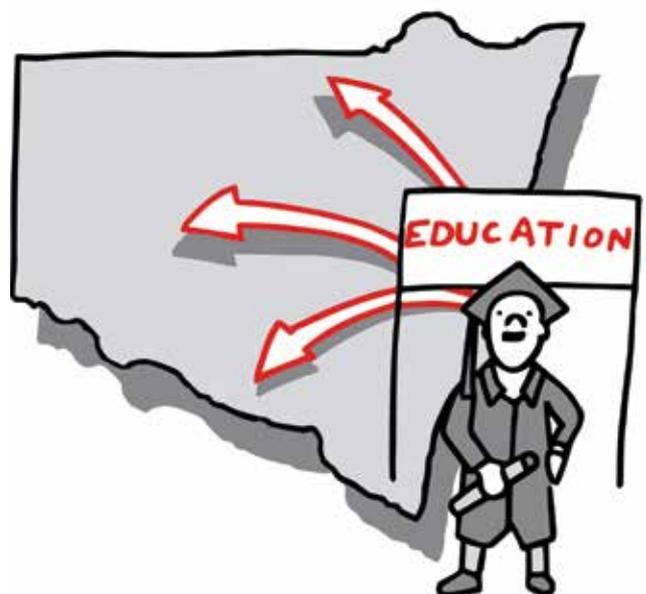
Trainee teachers then received:

- easy-to-access information about the rural schools and application process in an email
- a behaviourally-informed postcard to prompt discussion with family members or housemates
- a text message reminder two days before the application was due.

With Macquarie University we built on our initial trial with UOW. In this second trial, Macquarie's Department of Educational Studies sought to reduce possible ambiguity about which school to apply to by identifying a specific partner school. It also included a video testimonial from a trainee teacher who had previously completed a placement at that school (messenger effect).

What we learnt

In our intervention group at UOW – which received the set of personalised and timely prompts – the proportion of trainee teachers applying for a rural teaching placement tripled. In the intervention group, 12.6% of trainee teachers applied for rural placements, compared to the BAU group, where just 4.2% applied. These results represented a three-fold increase ($n = 237$, $p = 0.027$) in regional and remote applications. Moreover, there was a marked increase in applications from the intervention group in the days following each contact from the university about placements.



At our Macquarie University trial, half the trainee teachers were sent the additional rural placement information and video testimonial (our intervention group). The other half were sent no additional communication (our BAU group). Although we received four applications from the intervention group and zero applications from the BAU group, the small sample size for the trial meant that this increase was not statistically significant at conventional levels ($n = 81, p = 0.116$).

As a result of the trial, Macquarie University has decided to trial an email that will include enhanced video links to encourage more trainee teachers to undertake a rural or remote placement.

Since the trial at UOW, the School of Education has implemented the online application process and will make it easier for future trainee teachers to undertake a rural or remote placement. The university has been optimising its communication strategy using the lessons learnt about how rural placements are framed and what tools can engage students (such as the text messaging, which had not been tried before).



Next steps

In late 2018, we will have results from a third RCT encouraging uptake of rural teaching placements. Collaborating with Western Sydney University's School of Education, we will test social prompts – in particular, whether trainee teachers are more likely to apply for a rural placement if the opportunity includes the option to go with a peer or buddy.

The rural placements process is different across all universities. The success of a behavioural approach to increasing the uptake of rural placements and rural teaching positions depends on the portability of interventions. To achieve this goal, we will be collaborating with NSW Department of Education to develop and distribute a behavioural insights toolkit that will allow universities and educational institutions to customise and implement behavioural interventions.



Trial 04

Apprentices in class



More TAFE NSW apprentices in class

TAFE NSW is Australia's largest provider of training and vocational education. Each year it trains more than 500,000 students, including those undertaking apprenticeships in trades such as carpentry, electrical, hairdressing and plumbing.

However, some apprentices were not attending all their TAFE NSW classes, and not completing their apprenticeships.

We set out to increase apprenticeship completion rates – and the proportion of classes apprentices attended – in collaboration with Training Services

NSW (TS NSW) and TAFE South West Sydney Registered Training Organisation (SWS RTO). We learnt that if employers were sent a text message detailing what the apprentice was learning at TAFE NSW, we were able to increase course attendance by 3 percentage points.

Background

Since 2015, BIU has worked closely with TS NSW to design and deliver a range of interventions to improve apprenticeship and traineeship completion rates. This is in line with the state target to increase completion rates for apprentices and trainees to 65%.

To understand the behavioural enablers and barriers to apprentices and trainees completing their training contracts, we interviewed apprentices and teachers at SWS RTO, apprenticeship centres, employers and training providers.

Fundamentally, we discovered a disconnect between what happens at TAFE NSW and what happens at work. Employers are often unaware

of what their apprentices are learning at TAFE NSW and feel disengaged from the formal training of their apprentices and trainees. At work, apprentices often do not communicate what they are learning to their employers.

This disconnect may be one of the reasons behind low attendance at TAFE NSW training courses, low course and contract completion, and high course drop-out rates. As such, this trial aimed to test whether communicating the course curriculum to apprentices' employers and trainees via weekly text messages makes a difference. That is, could texts increase the completion rates and attendance rates of apprentices and trainees studying at TAFE NSW.

What we did

This trial was a cluster RCT with two arms. Students in the trial were randomly allocated to groups based on the classes they enrolled in. These were:

- a. intervention (the group receiving text messages) or
- b. BAU condition.

Employers with apprentices in the intervention group received weekly messages from TAFE NSW regarding course content, whereas those with apprentices in the BAU group did not receive any texts from TAFE NSW. Attendance data were collected from SWS RTO and analysed.

What we learnt

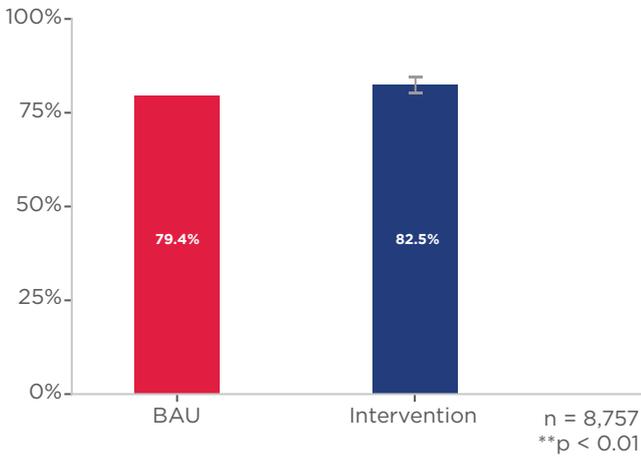
Apprentices in both the intervention and BAU groups generally attended their classes at TAFE NSW and did not withdraw from their courses within the first semester of their course. Only 15 people (8 out of 382 from BAU, or 2.1%; and 7 out of 340 from intervention, or 2.1%) withdrew from their courses, despite preconceived perceptions that many students did not attend the classes and dropped out.



Employer engagement impacted apprentice attendance

When we examined the impact of our interventions on class attendance, we found that the attendance rate for the intervention group (n = 340) was 3.1 percentage points higher than that of the BAU group (n = 382; p < 0.01). We found that the text messages to employers encouraged the students to attend their classes and this effect was mainly driven by attendance in the final two weeks of the second semester. If we ran the intervention in our BAU group, we project the 966 missed classes could have been reduced by 147.

Attendance rate, by condition



Effects of spillover

Some employers with multiple apprentices may have had apprentices in both the BAU and the intervention group. This means that the effect of the text messages could have also been felt by some apprentices in the BAU group, via their employers.

In order to understand whether this was occurring, we separated apprentices in the BAU group who were working with employers who also had apprentices in the intervention condition from the 'pure BAU' apprentices, who were working with employers that only had apprentices in the BAU group. We called this the 'spillover' group and examined if its attendance rates differed from the 'pure BAU' group.

We found a 3.8 percentage point increase in attendance rates in the 'pure intervention' group compared with the 'pure BAU' group (p < 0.05). The 'spillover' group appeared to have been affected by working at the same employers as apprentices in the intervention group, but the difference in the results of the spillover group and the pure BAU group was not significant (p = 0.218).

Next steps

We plan to examine the impact of the intervention on apprenticeship cancellation rate. We will conduct this analysis in June 2018.

TAFE NSW is interested in scaling up the intervention to other TAFE NSW campuses and will identify potential sites later in 2018.

Trial 05
Car littering fines



Paying littering fines

Littering impacts all of us. It spoils our environment and costs millions of dollars to clean up. This is why reducing litter volume by 40% by 2020 is a NSW Premier's Priority.

Littering from a vehicle can be reported to the Environment Protection Authority (EPA), which can then issue a fine. Unfortunately, people were less likely to pay littering fines on time compared to other traffic-related fines such as speeding or parking.

We partnered with the EPA and Revenue NSW to improve responses to penalty notices for littering from motor vehicles by redesigning the notices.

Our new penalty notices significantly increased the likelihood recipients would take an action within 120 days. We also found that when we included a message on environmental impact we increased timely payment by 5 percentage points and reduced the number of people accruing additional fines by not acting in time by 5.6 percentage points.

Background

Litter has harmful effects. It pollutes ecosystems, waterways and highways. On top of the environmental impacts, it costs at least \$180 million to clean up every year. Reducing litter volume by 40 per cent by 2020 is a NSW Premier's Priority. Under the *Protection of the Environment Operations Act 1997*, it is an offence to litter from a motor vehicle, with fines of \$250 for individuals and \$500 for organisations.

In early 2016, we began working with the EPA to improve the penalty notices issued for littering from a vehicle. Penalty notices are issued to the registered vehicle owner and can be sent to organisations and individuals. Our initial research found that only one-quarter of people (24%) who received a penalty notice took any action before a penalty reminder

notice was issued by Revenue NSW 28 days later. This rate is considerably lower than other traffic-related offences.

If the recipient does not act after the reminder notice is sent, they will likely have an additional fee of \$60 added to their fine. As with regular speeding fines, they may even lose their licence. The EPA and BIU were keen to ensure that the penalty notice was clear and easy to understand, hopefully increasing the likelihood that the recipients would take an action in response to the penalty notice.

Additionally, we tracked the number of people who had failed to pay the initial penalty and were subsequently fined an additional \$60 late fee.

What we did

Our trial investigated whether different messages on the fine about littering – along with a simplified and more user-friendly penalty notice – would increase the proportion of people taking any of these actions before being sent a reminder:

- paying the fine
- naming another driver or person responsible (completing a statutory declaration)
- requesting a review
- electing to go to court
- calling Revenue NSW.

If recipients do not take any of the above actions within 28 days, they are sent a reminder notice.

The trial also had two secondary aims:

1. to increase the proportion of people paying the fine (as this is the most likely outcome of the fine)
2. to decrease the proportion of people requesting reviews (before a reminder notice is issued) when, according to the current notice, they are unlikely to be successful.

In partnership with the EPA, we ran an RCT, in which we designed four new penalty notices. Three of the new penalty notices had different messages about littering, and one penalty notice tested just the new design and layout, without an additional message.



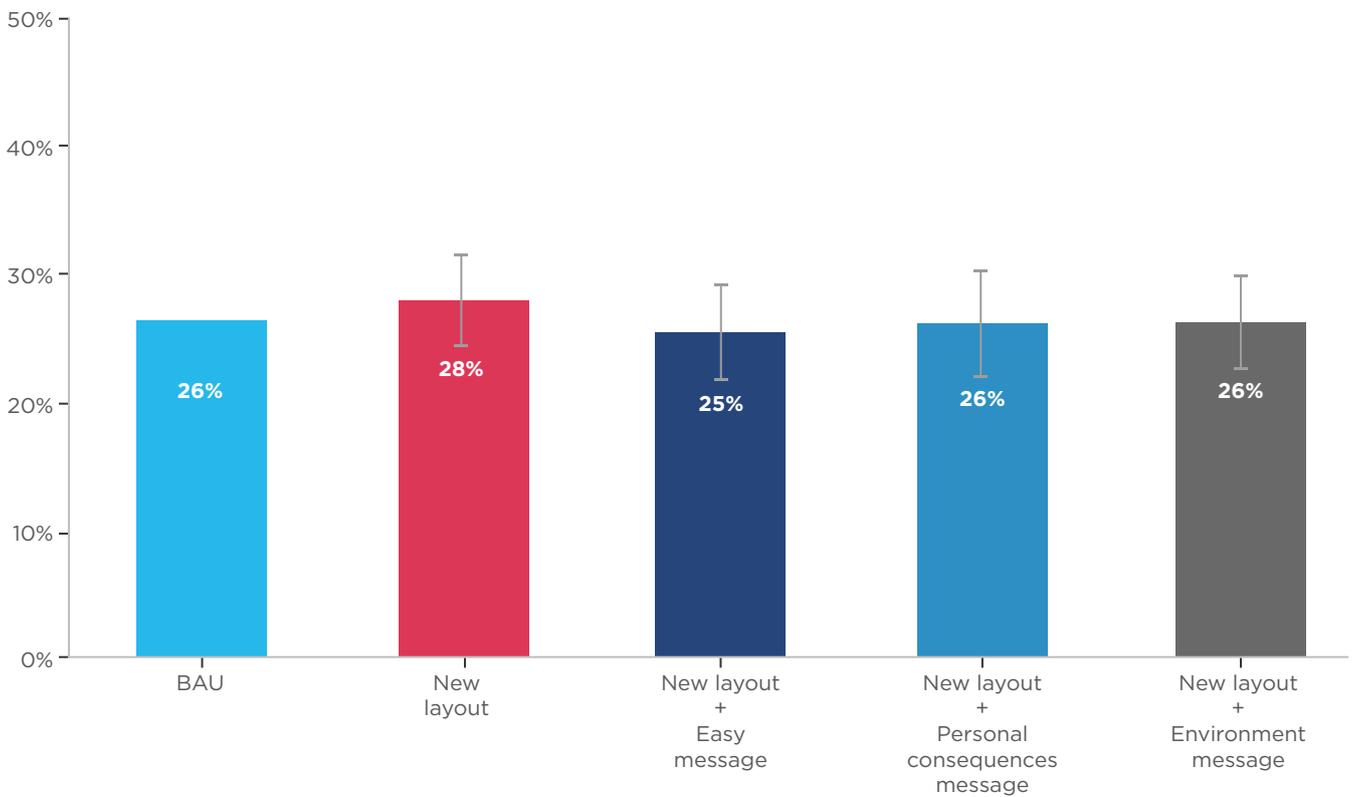
Interventions

Condition	Description
1. BAU	The penalty notice used by the EPA, with the standard accompanying letter and statutory declaration.
2. New layout	The revised penalty notice with no additional messaging.
3. New layout + 'easy' message	The revised layout penalty notice with this behavioural message: <i>'Keep litter in your Mazda - it's easy to do. Keep a bag in your car to collect your rubbish and cigarette butts.'</i>
4. New layout + personal consequences message	The revised layout penalty notice with this behavioural message: <i>'Littering from your Mazda was reported. Over 10,000 people are ready to report littering in NSW to the Environment Protection Authority. You can be reported anywhere, anytime.'</i>
5. New layout + environment message	The revised layout penalty notice with this behavioural message: <i>'Littering from your Mazda can damage our natural environment. Littering makes our spaces less safe and kills wildlife.'</i>

What we learnt

Results showed that none of the redesigned penalty notices led to more recipients taking action before a reminder was issued. This may be because fines for littering from motor vehicles are not as well known by the community as fines for other traffic offences such as speeding. The overall proportion of recipients who took any action within 28 days and therefore before the penalty reminder notice was low, regardless of which penalty notice they received.

Proportion that acted before receiving a reminder notice

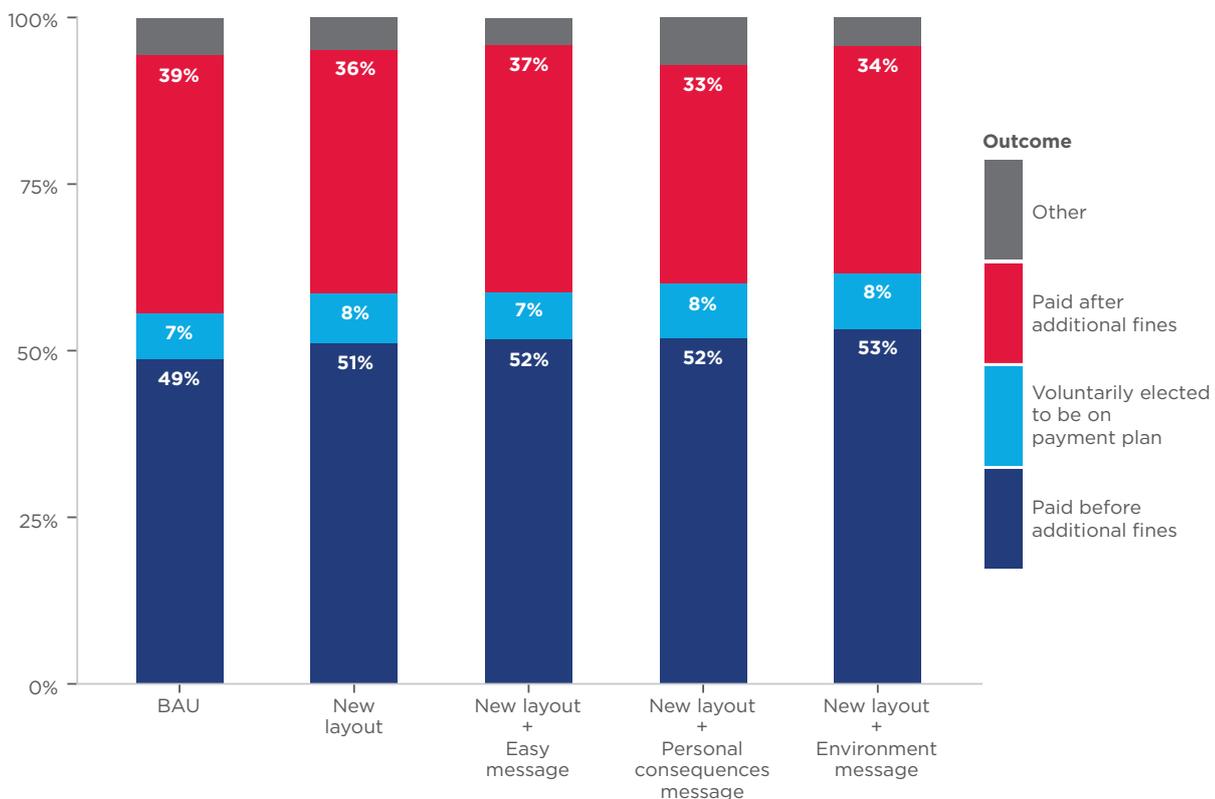


n = 5,955
all ps > 0.05

We then analysed the data to see what the overall outcome of the penalty notice was over 120 days. These further analyses found that the redesigned layout with an environment message increased payment by 5.1 percentage points, and significantly reduced the number of people who had additional fines added for not acting in time by 5.6 percentage points.¹ This result was maintained when we removed organisations from the analysis.

If everyone in the trial period had been sent the best performing penalty notice, compared to everyone receiving the usual penalty notice, we could have expected to see a difference of 820 more payments within 120 days and 777 fewer recipients receiving additional fines. As the additional fines are a minimum of \$60, this indicates a \$46,620 reduction in additional fines for the penalty notice recipients.

Outcomes for each type of penalty notice over the trial period



Next steps

The EPA plans to scale up the best performing penalty notice and use this as its standard penalty notice. This trial demonstrates that a relatively simple change to the way information is presented and messaging used can have significant impacts. In this trial, we were able to improve the outcome for government by reducing the administrative burden of following up unpaid fines. More importantly, we were able to reduce the likelihood recipients would have additional fines added to their penalty notice because they did not act in time.

¹ Note that the figures presented in the text are taken from a regression analysis that takes into account a time trend. We have included this time trend as we randomly allocated weeks to conditions, rather than individuals. The inclusion of the time trend means that the size of the effect differs slightly from the raw figures presented in the graph.

Trial 06
Community
consultation



Community consultation on land plans

When there is development planned, the NSW Government tries to gather feedback from the public. However, getting people to respond can be a challenging task.

To increase the number of responses, we worked with the Department of Planning and Environment (DPE) to design a behaviourally informed flyer, which we tested with a two-phase RCT. The aim was to increase online community participation in the consultation activities for the land-use plan for Banksia and Arncliffe, located in suburban Sydney.

We used a number of behavioural insight principles to improve the layout of flyers, including illustrations. While the behavioural insight principles used did not significantly increase community participation overall, we did find that, among respondents, people who completed surveys with illustrations submitted more comments than those who completed surveys without accompanying illustrations.

Background

The Banksia, Arncliffe and Cooks Cove Priority Growth Areas and Precincts strategy aims to deliver more homes in places with access to infrastructure, transport, services and jobs in this Sydney region. It involves detailed planning for precincts, undertaken in consultation with local communities and councils.

DPE advised that there were two ways in which community consultation could be improved. Firstly, DPE was interested in testing new approaches to encourage the community to give feedback on the draft land-use plan via an online survey. Secondly, DPE was also concerned that some community cohorts were under-represented in consultation activities, while others were over-represented.

By increasing engagement with traditionally under-represented community groups, DPE was hoping to gain a more accurate representation of the community sentiment on its draft land-use plan to help inform the final plan for the area. In partnership with DPE, we designed a trial to test whether applying behavioural insights could address these two issues.

In addition to the aim of increasing the number and representativeness of people going online to provide feedback or find out more information, we worked with DPE to improve the survey to gain extra feedback. Specifically, the goal was to improve the survey so that it was easier to understand and would elicit more feedback from survey respondents.



What we did

The trial had two main aims:

- The first aim was to test whether a behaviourally informed flyer increased:
 - the number of people going online to provide feedback or find out more information, relative to a BAU flyer
 - the representativeness of the people providing feedback online, compared to the population recorded in the census, relative to a BAU flyer.
- The second aim was to test whether changing the design and layout of information provided in the online survey increased the:
 - number of survey respondents completing the online survey
 - average rating of how easily understood the proposed changes were
 - amount of feedback provided on the plan, measured by a word count.

Interventions

To test the first aim we designed a new, behaviourally informed flyer. We then tested whether this encouraged more people to go online and complete a survey, in comparison to the BAU version. The behavioural insights flyer used several behavioural techniques such as increasing the salience of key messages and reducing behavioural frictions. As this was an RCT, residents were randomly assigned to either the intervention group or BAU condition.

To test the second aim, we ran a second phase of the RCT in the online survey, which involved two further versions. This trial compared a version of the survey that included an artist's impression of proposed changes with 'plain English' text descriptions, and a second version that used the same plain English text but without pictures. We measured whether there were differences in respondents' understanding of the land-use plan and the amount of feedback they provided.

Comparing the two flyers sent to the community

Below: The BAU flyer sent to the control group



Below: The flyer sent to the intervention group



When this artist's impression of proposed changes on Firth Street accompanied surveys, the type of response was significantly different.

Adding artist's impressions to text descriptions in an online survey

The text of the BAU survey was as follows:

The land-use plan proposes the following changes to the Arncliffe town centre along Firth Street:

- The area will be rezoned to allow cafés, shops and restaurants below residential apartments
- The area will be rezoned to allow residential buildings up to eight to twelve storeys high to allow more people the opportunity to live close to the train station
- New design guidelines to make sure that any new buildings are well designed
- More trees, plants and places to sit along Firth Street.

Text and artist's impression

The text of the intervention survey was mostly the same as that of the BAU group, however it included the above artist's impression and an additional point:

- This is an artist's impression of what the Arncliffe town centre on Firth Street towards the intersection of Queen Street might look like, based on the suggested changes set out in the plan.





What we learnt

Comparing behaviourally informed and BAU flyers

Residents who received the redesigned behavioural insights flyer were slightly more likely to go online and fill in the survey (3.04%) than those who received the BAU flyer (2.53%). However, the difference was not statistically significant ($p = 0.196$, $n = 7,111$). The trial also showed that the overall rates of uptake were very low. Fewer than 3% of respondents who were sent a flyer completed the survey based on either flyer.

Sending mail to residents is quite costly for relatively little gain in generating feedback on the survey. Using the BAU flyer, the cost per resident completing the survey was approximately \$66.11. This is because, for every 100 residents receiving the BAU flyer, only about two people would start the online survey. In comparison, the behavioural insights flyer increased the proportion to three people per 100, reducing the average cost per response to \$55.09. However, it should be noted that these differences were not statistically significant at traditional levels.

Sending mail to residents may provide unmeasurable impacts to the community, such as ensuring communication of important changes, which are not captured in these results.

Adding artist's impressions to text descriptions in an online survey

Adding the artist's impressions to plain English text descriptions did not increase survey respondents' self-rated understanding of the proposed changes ($p > 0.05$, $n = 635$). Overall, survey respondents rated their understanding of the proposed changes as very high, regardless of whether they viewed the artist's impressions or not.

However, survey respondents who saw the artist's impressions were significantly more likely to provide free-text responses than those who didn't ($p < 0.001$, $n = 742$). This suggests that the artist's impressions may assist respondents to provide more feedback on what they like and what they want changed.

Next steps

This is the first trial the BIU has completed in the planning portfolio. While this trial had a limited impact, behavioural insights principles may help our government increase engagement with community consultation activities.

Including visual depictions of proposed elements in the land-use plan did not impact the overall rating of understanding, but did significantly increase the amount of feedback provided in terms of free-text comments. This suggests using visual elements may increase engagement in online community feedback surveys.



Trial 07
Childhood obesity



Reducing childhood obesity

One of the NSW Premier's Priorities is to reduce childhood overweight and obesity rates by 5 percentage points by 2025.

Around one in five children – or 22% of those aged 7 to 16 years – are above a healthy weight.

We partnered with the George Institute for Global Health, the NSW Office of Preventive Health (OPH) and the Better Health Company to enhance the Go4Fun® program with systematic goal setting and rewards to encourage participation.

Overall, the program was associated with reduced rates of childhood overweight and obesity among both the BAU and intervention group. While our enhancements significantly increased participation, we did not detect a difference in overall program outcomes between the BAU group and the intervention group.

Background

To help reduce childhood overweight and obesity rates by 5 percentage points by 2025, we trialled an enhancement to the Go4Fun® program, a 10-week weight management program for parents and overweight and obese children aged 7 to 13 years. In Go4Fun®, parents/carers and children participate in activities to improve child health and confidence, and family eating and activity habits.

Our research suggested that while the existing Go4Fun® program was evidence-based, there was room to make goals more clear and salient, apply incentives more consistently, and improve post-program follow up.



What we did

We wanted to test the impact of enhanced and systematic goal setting, rewards and SMS reminders to improve the effectiveness of the Go4Fun® program, by increasing attendance rates, improving goal achievement rates and sustaining individual health outcomes.

We trialled whether a behaviourally informed goal setting and reward strategy could increase parental and child engagement with, and adherence to, the program.

We designed behavioural insights interventions to enhance the Go4Fun® program, which included a six-monthly prize draw for those who attained their goals; simplified goals, rewards chart and contract; and weekly text message reminders after the program.

We tested these interventions in a cluster RCT in five local health districts. We measured the sessions attended, BMI scores and waist circumference of children, and self-reported measures at six and 12 months after the program.

The BAU groups participated in the existing Go4Fun® program, whereas children and parents in the intervention groups participated in the program and received the enhanced interventions to help them better identify and set their goals, and then track how they were progressing over the 10 weeks.

What we learnt

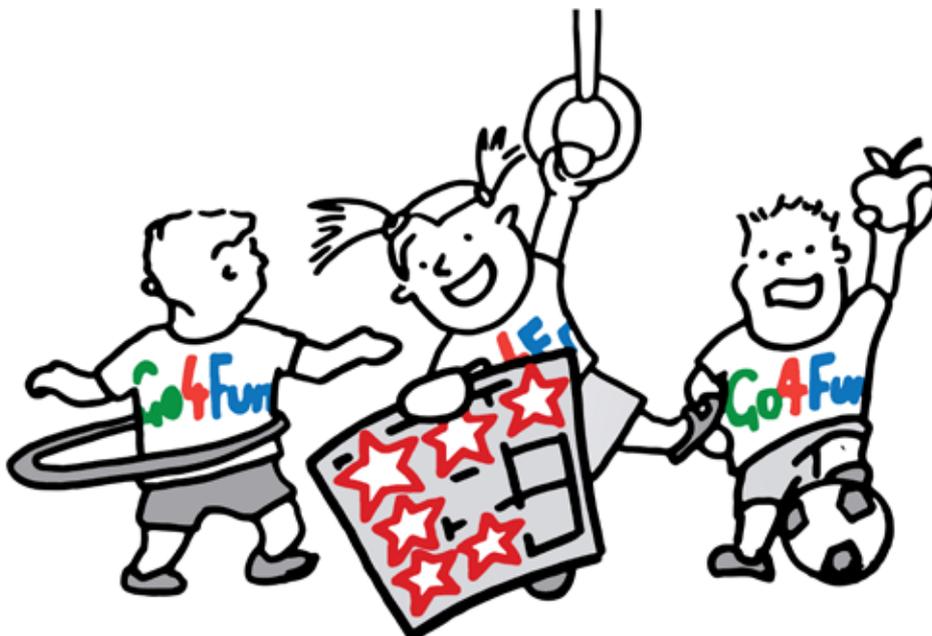
The analysis found that the mean number of sessions attended after 10 weeks was significantly greater in the intervention group than in the BAU group (6.8 compared with 6.3 sessions, $p = 0.029$). This is closer to the program target of seven sessions.

Overall, the Go4Fun® program was associated with significant improvement in a variety of lifestyle measures (diet, physical activity and sedentary behaviour), as well as clinical and self-esteem measures. However, there were no significant differences between the enhanced and usual program groups in these outcomes.

Next steps

The George Institute researchers are finalising a scientific manuscript for publication along with several papers summarising qualitative findings associated with the program.

The process evaluation will also explore the implementation, receipt and setting of the intervention, and provide some insight into why the incentive scheme may not have been effective.



What’s next for BIU

Over the past four years, the BIU has worked to embed the principles of behavioural insights and evidence-based policy development across the NSW public sector. The BIU will continue to promote the use of behavioural insights across the public sector, encouraging all policy makers to source and use high-quality evidence when building policies and programs that affect the people of NSW.

Making a difference — and measuring it

In the coming years, we will use our approach to continue tackling some of the more challenging public policy issues in both the social and economic policy spheres. We are currently working on a range of new trials across a number of NSW Government portfolios. This will require us to test more complex interventions. In some case it will require us to test more than one intervention at a time to see if we can make a difference – and measure it.

Below is a small selection of the projects the BIU is undertaking or continuing in 2018.

Partners	Project aim
Department of Justice	Digitising resources, including What’s Your Plan, to reduce domestic violence offending
NSW Public Service Commission	Investigating behavioural interventions to increase diversity in the NSW public sector
Health Cluster	Reducing childhood obesity
Finance, Services and Innovation	Helping to ensure that 70% of government transactions are conducted via digital channels by 2019



Find out more

Learn more at bi.dpc.nsw.gov.au or email behaviouralinsights@dpc.nsw.gov.au

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