

Behavioural Science Litter Prevention Research

Divert NS Litter Summit March 2022

DAVIS PIER

Agenda

1

Background on Behavioural Science
5 minutes

2

Project Background and Research Approach
5 minutes

3

Research Insights
10 minutes

4

Q&A
10 minutes

Behavioural Science

Behavioural Science: A Definition



The science of what we do and how we can change it.

Behavioural Science



A relatively new field which combines insights from psychology, economics, sociology, and a range of other disciplines.



It is the study of understanding, influencing and predicting human behavior.



Importantly, it has led to an understanding that in particular contexts, people **systematically** deviate from rational decisions.

People are *predictably* irrational.

Behavioural Biases and Heuristics

Behavioural Scientists have identified literally hundreds of contexts in which we are ***predictably***
irrational.

For example:



Loss Aversion



Present Bias

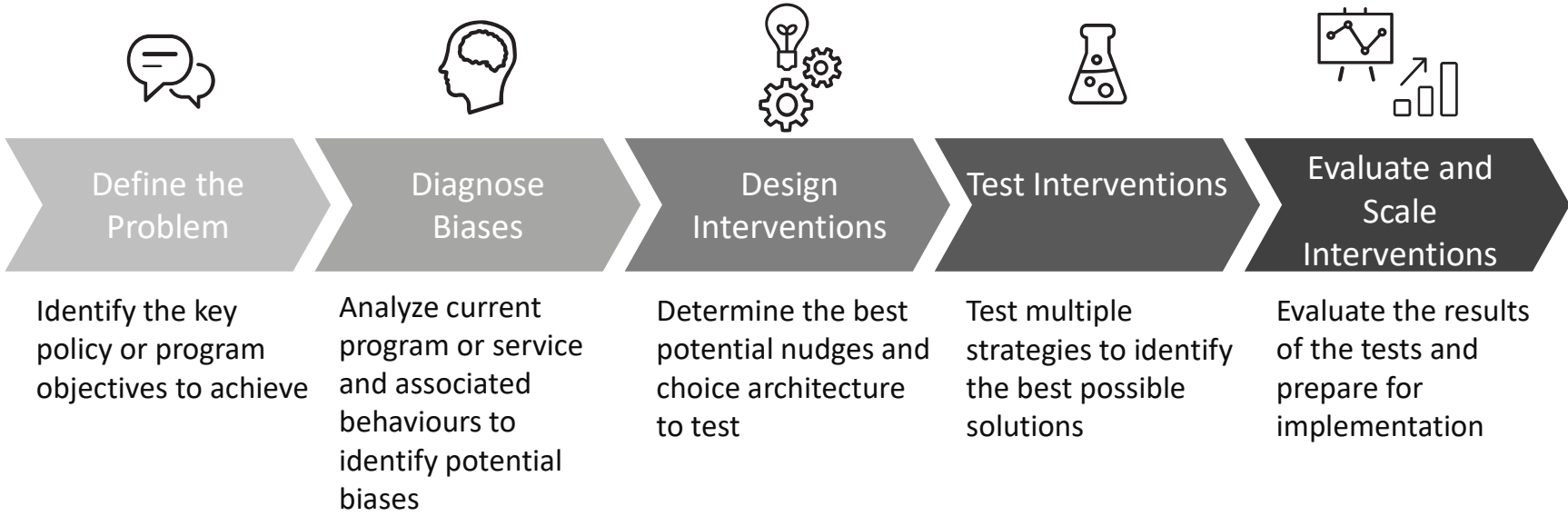


Social Norms



Endowment Effect

Behavioural Intervention Approach



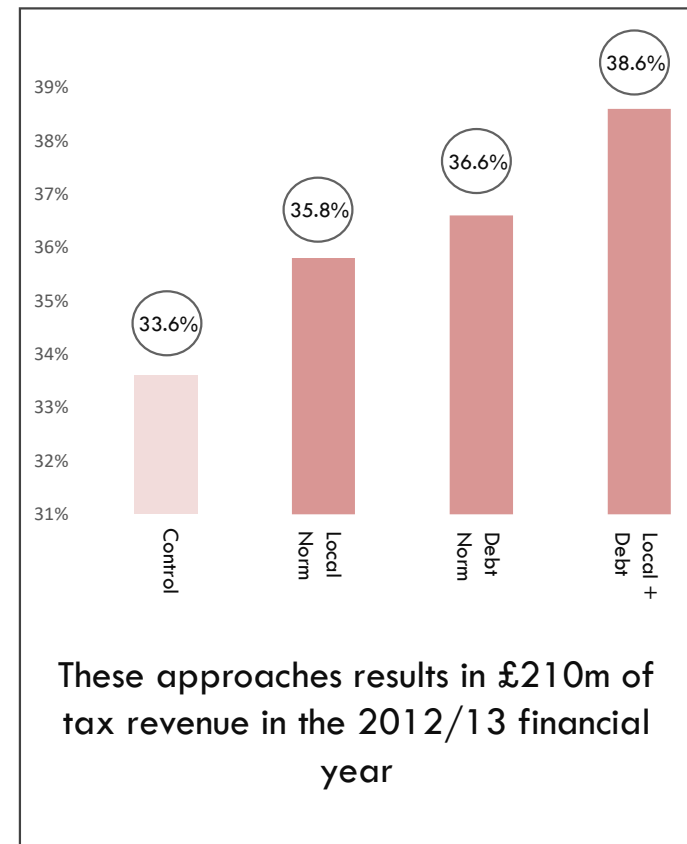
Some Examples of Behavioural Interventions

Situation

- Paying taxes on time in the UK (and other countries) reduces revenues and creates additional costs for payers

Nudges

- The Behavioural Insights Team (BIT) ran a series of trials showing how making people aware of what most other people are doing can impact behaviour
- The 'local norm' letters pointed out that the great majority of people in the recipient's local area had paid on time; the 'debt norm' pointed out that most people with a debt like theirs had already paid. The 'local and debt norm' combined these two messages.



Reducing Late Tax Payments

Dear Sir/Madam

www.hmrc.gov.uk
Date of issue 4 August 2011
Reference REFERENCE NUMBER

Please pay £9999999999.99

Our records show that your Self Assessment tax payment is overdue.

It is easy to pay. Please call the phone number above to pay by debit card, credit card, or Direct Debit.

You can also pay using internet and telephone banking. For more information on when and how to pay, go to www.hmrc.gov.uk/payinghmrc

If you don't believe that this payment is overdue, please contact us on the number above.

If you have already paid, thank you. If not, please act now.

Dear Sir/Madam

www.hmrc.gov.uk
Date of issue 4 August 2011
Reference REFERENCE NUMBER

Please pay £9999999999.99

Our records show that your Self Assessment tax payment is overdue.

The great majority of people in your local area pay their tax on time. Most people with a debt like yours have paid it by now. **

It is easy to pay. Please call the phone number above to pay by debit card, credit card, or Direct Debit.

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TECHNICAL INQUIRIES TEAM

Project Background and Approach

Project Objective

To undertake research to **understand the behavioural biases and heuristics** which contribute to littering behaviour, and identify options for **behaviourally-informed litter prevention interventions.**

Focus Areas



Fast Food Packaging



Disposable Coffee
Cups



Cigarette Butts



Alcoholic Beverage
Packaging

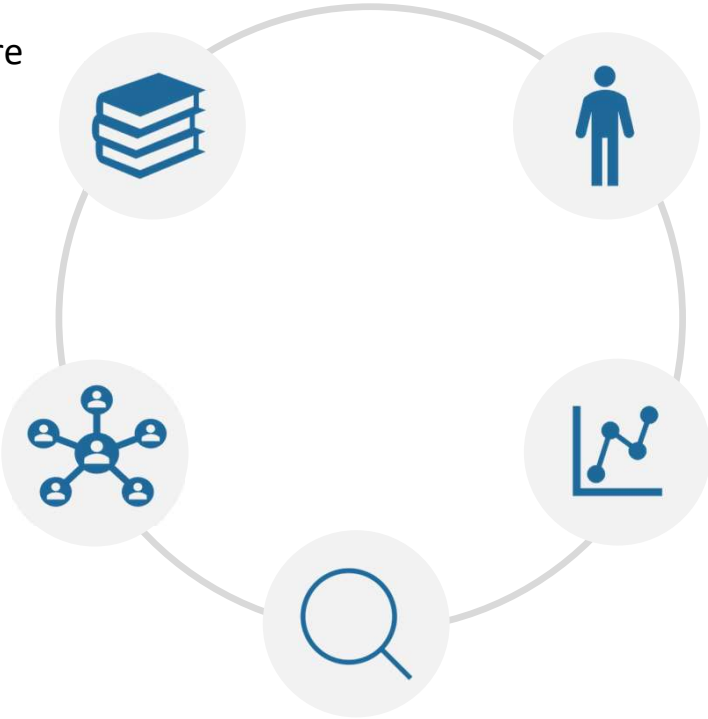
Research Approach

Literature Review

A review of academic literature on behavioural biases and heuristics found to be associated with littering behaviours.

Case Studies

Several case studies were identified which outline successful behaviorally-informed littering interventions and campaigns in other jurisdictions.



Qualitative Research

Qualitative research was conducted with 20 people connected to litter in the province, including:

- Provincial government Municipalities
- Community groups
- Business associations
- The restaurant industry.

Behavioural Analysis

A behavioural analysis was undertaken which diagnosed the behavioural biases which are hypothesised to contribute to littering behaviour.

Behavioural Interventions

Based on the research and analysis, several evidence-based littering interventions were proposed for testing.

Research Insights

Literature Review

There were two key areas of the literature review:

Literature Review Insights

1

Behavioural Factors

- Demographic
- Environmental
- Social

2

Littering Campaigns

- Behavioural Mechanisms
- Methods
- Efficacy

3

Behavioural Interventions

- Behavioural biases and heuristics
- Experimental design and validity
- Impact of fines

Case Studies

5

Don't Mess with Texas – USA

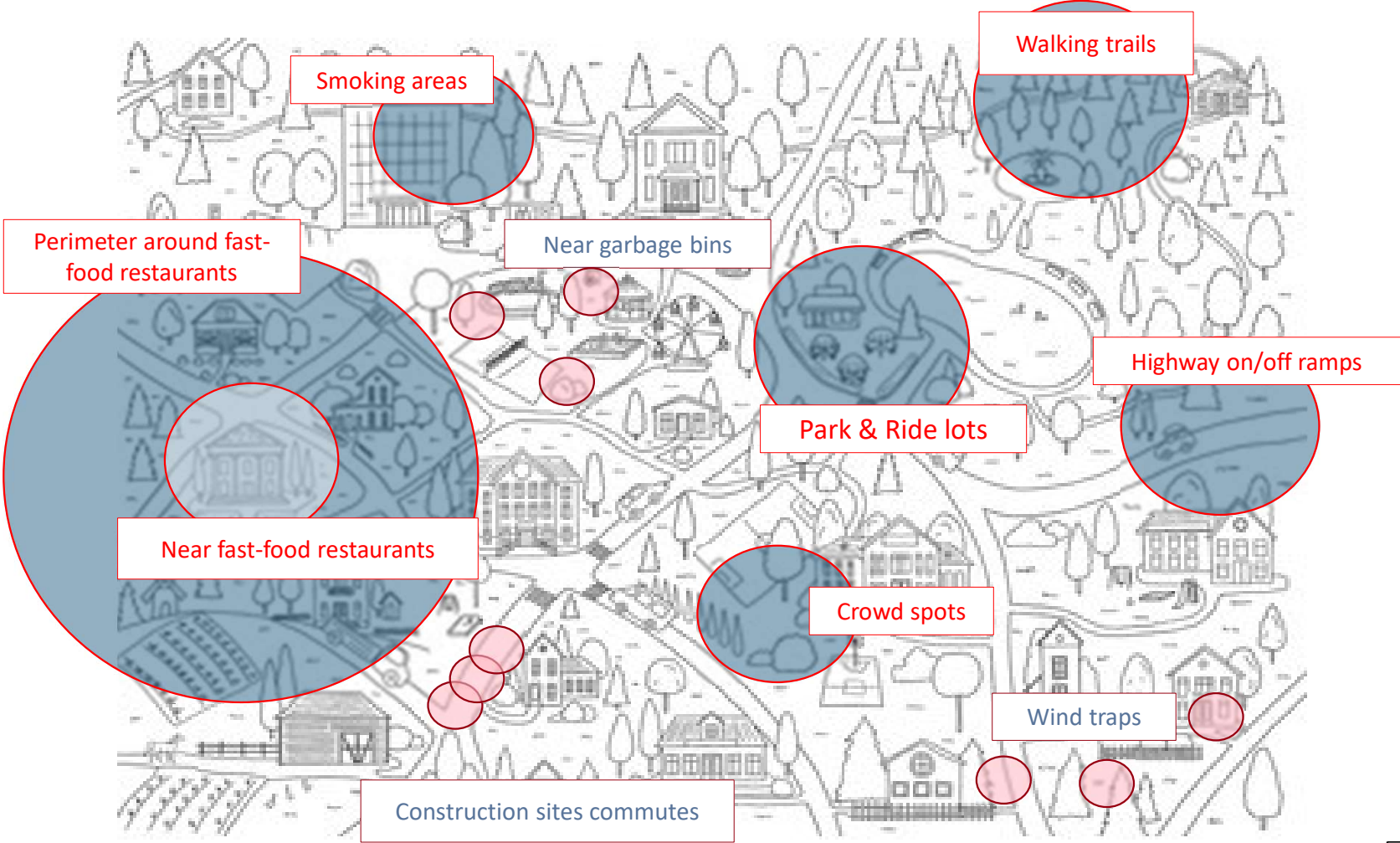
- Media sources reported that the campaign reduced littering by 72% between 1986 and 1990

6

Report a Tosser – Australia

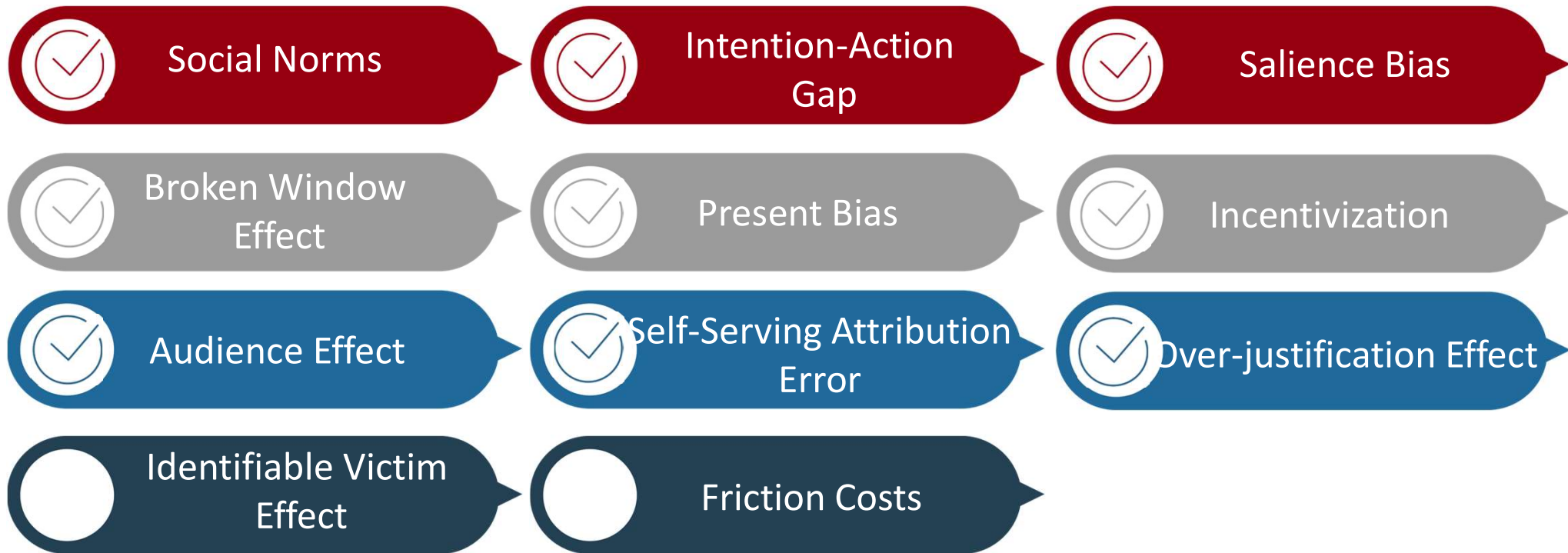
- Hypothesized to have contributed to a downward trend on the number of fines issued for littering from vehicles.

Qualitative Research: Litter Hot Spots






Behavioural Analysis: Summary

The behavioural analysis highlighted eleven biases and heuristics which are hypothesised to contribute to littering behaviour in Nova Scotia:



Behavioural Analysis: Examples

A few examples of these behavioural biases and their influence on littering behaviour:

	Definition	Influence on Littering
 Social Norms	Social norms tell us what is the 'right' or appropriate behaviour in a given situation.	If people believe that most other people do not litter, they will also be influenced to litter less themselves.
 Friction Costs	Friction Costs are the barriers to making a particular decisions or actions.	Friction costs in the context of littering include the perceived time and effort required to dispose of litter.
 Salience Bias	Salience Bias refers to the tendency to focus on information or items which draw our attention .	Where a sorting bin is clearly labeled and draws attention, it is more salient and therefore more likely to be used.

Proposed Interventions: Summary

Several evidence-based behavioural interventions are proposed fit into two categories:

Waste Receptacle Infrastructure Interventions

Green 'Footprints' Pathway Nudge

1

Interactive Cigarette Butt Receptacles

2

Anthropomorphized Waste Receptacles

3

Behavioural Messaging Interventions

5

Social Norms Messaging

6

Audience Effect Messaging

7

Identifiable Victim Effect Messaging

8

Self-Serving Messaging

Proposed Intervention: Example

Social Norms Messaging Intervention to Reduce Litter of Fast Food Packaging

The below outlines how the effect of a social norms messaging intervention might be applied to reduce fast-food littering behaviour, and how this would be measured.



Step 1.

Identify 2 similar fast-food restaurants. Measure the amount of litter collected in the drive-thru waste receptacles and in surrounding area at both venues for a week.



Step 2.

Introduce social norms messaging on drive-thru signage at one venue (treatment group, and not the other (control)).



Step 3.

Measure the amount of litter collected in the drive-thru waste receptacles and surrounding areas at both venues for another week.



Step 4.

Analyze whether there is a statistically significant change in waste collected and littered at the venue exposed to social norms messaging.

Q & A